PUBLIC VERSION

IN THE MATTER OF AN ARBITRATION UNDER ANNEX 14-C OF THE CANADA-UNITED STATES-MEXICO AGREEMENT (CUSMA), CHAPTER ELEVEN OF THE NORTH AMERICAN FREE TRADE AGREEMENT AND THE 2013 UNCITRAL ARBITRATION RULES

BETWEEN:

WINDSTREAM ENERGY LLC

Claimant

and

GOVERNMENT OF CANADA

Respondent

CLAIMANT'S FOURTH BOOK OF EXPERT REPORTS WINDSTREAM ENERGY LLC

August 14, 2023

TORYS LLP

Torys LLP
Suite 3000
79 Wellington St. W.
Box 270, TD South Tower
Toronto, Ontario
Canada M5K 1N2

John Terry
Rachael Saab
Emily Sherkey
Jake Babad
Julie Lowenstein

Counsel for the Claimant, Windstream Energy LLC

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Windstream Energy LLC CLAIMANT

-and-

Government of Canada RESPONDENT

Independent Expert Reply Report of Chris Milburn, Edward Tobis, and Pierre-Antoine Tetard

AUGUST 14, 2023

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1. INTRODUCTION

A. Assignment

1.1 This is the second report that we have prepared in connection with a claim advanced by the Claimant against the Government of Canada under the NAFTA. In our first report ("**Secretariat-1**")[1] we provided our opinion on the quantum of damages sustained by the Claimant, if any, as a result of the Alleged Breaches.[2]

1.2 The purpose of this report ("**Secretariat-2**")[3] is to respond to the report produced by Dr. Jérôme Guillet on behalf of the Respondent ("**Dr. Guillet**") dated December 12, 2022 ("**Guillet-1**").[4]

1.3 In preparing this report, we have been asked by Counsel to rely upon the conclusions set out in the following expert reports:

i. The reports set out at paragraph 1.12 of Secretariat-1; and,

ii. The report of Mr. Ian Irvine of Two Dogs Projects Ltd. dated August 14, 2023 ("**Two Dogs-2**"). Two Dogs-2 provides a detailed response to the commentary on the technical aspects of the Project contained within Guillet-1, including the capital and operating cost assumptions and the Project construction timelines.

1.4 This report has been prepared in conformity with the CICBV Practice Standards, which are discussed in Section 3 of Secretariat-1. This report is subject to the same restrictions outlined in Section 3 of Secretariat-1, and the same assumptions outlined in Section 11 of Secretariat-1. Additionally, we reserve the right to make revisions and/or further support the conclusion under specified circumstances, such as when additional facts become apparent, and documents become available to us after this report is issued.

1.5 Our scope of review is set forth in Appendix 1 of this report, in addition to the documents listed in Appendix 6 of Secretariat-1.

1.6 Our CVs are provided in Appendices 8, 9, and 10 of Secretariat-1.

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1 CER-Secretariat.

2 This report should be read in conjunction with CER-Secretariat. Unless otherwise noted, capitalized terms used in this report are as defined in CER-Secretariat.

3 CER-Secretariat-2.

4 We note that a lack of commentary on a particular point contained within RER-Guillet does not reflect either our agreement or disagreement with Dr. Guillet's view.

B. Report Structure and Contributions of Each Author

1.7 In the following section, we set out the areas of this report for which each author is primarily responsible, unless otherwise noted, along with the areas for which author is jointly responsible.

1.8 Our report is set out as follows:

i. In Section 2, we provide a summary of Secretariat-1 (Secretariat and Mr. Tetard);

ii. In Section 3, we provide a summary of Guillet-1 (Secretariat and Mr. Tetard);

iii. In Section 4, we provide a summary of Secretariat-2 (Secretariat and Mr. Tetard, and Mr. Tetard only for paragraph 4.39);

iv. In Section 5, we provide our comments on the updates to the Green Giraffe Report contained within Guillet-1 (Secretariat and Mr. Tetard, and Mr. Tetard only for paragraphs 5.8ii, 5.85, 5.88, and 5.93);

v. In Section 6, we provide our responses to Dr. Guillet's comments on Secretariat-1 (Secretariat and/or Mr. Tetard, to the extent the comments relate to the parts of Secretariat-1 that were the primary responsibility of Secretariat or Mr. Tetard, as set out in paragraph 1.27 of Secretariat-1, Secretariat only for Sections 6.D.IV and 6.D.V, and Mr. Tetard only for paragraphs 6.25 and 6.43);

vi. In Section 7, we provide a summary of the various calculation and other errors contained within Guillet-1 (Secretariat);

vii. In Section 8, we provide our expert declaration with respect to this report (Secretariat and Mr. Tetard);

viii. In Appendix 1, we set out the documents we have relied upon in the preparation of this report (Secretariat and Mr. Tetard); and,

ix. In Appendix 2, we provide additional sensitivity analyses on our calculations and on Dr. Guillet's calculations.

1.9 Notwithstanding that Secretariat and Mr. Tetard are primarily responsible for certain portions of this report, to the extent that these portions are interdependent and overlapping, the authors have reviewed the entire analysis and believe the assumptions, methodology and conclusions herein are reasonable.

2. SUMMARY OF SECRETARIAT-1

A. Secretariat-1 Mandate

2.1 We were retained by Counsel on behalf of the Claimant to provide our independent opinion of the economic damages sustained by the Claimant as a result of the Alleged Breaches as of the Valuation Date of February 18, 2020 (i.e., the date that the FIT Contract was terminated by the IESO). We were instructed to prepare our analysis on the basis that the Alleged Breaches amounted to an unlawful expropriation of the Claimant's Investment. [5]

B. Approach to Damages and the Counterfactual or 'But-for' Case

2.2 We determined the Claimant's damages due to the Alleged Breaches as the amount that provides 'full-reparations' for the damage caused, being the amount that will restore it to the financial position it would have occupied absent or 'but-for' the Alleged Breaches.[6] The 'but-for' case that we were instructed to assume was that the IESO would not have terminated the FIT contract on February 18, 2020, the Moratorium which had prevented Windstream from proceeding through its approvals process for the Project would have been lifted, and that by February 18, 2020, the MECP and MNRF would have fulfilled their commitments to the Project and the Ontario Government would have dealt with Windstream in good faith, without subjecting the Project to unreasonable regulatory delays.[7]

2.3 In preparing our opinion on damages, we were instructed to rely upon the conclusions set out in the technical expert reports set out at paragraph 1.12 of Secretariat-1. We primarily relied on these technical expert reports to derive the project construction schedule timeline, capital costs, and O&M cost assumptions for the Project.

2.4 We note that the Wood Group concluded that as at the Valuation Date the Project was *"technically feasible and could be developed and constructed within the timelines specified in the FiT contract … but for the imposition of the moratorium and cancellation of the FiT contract."*[8]

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5 CER-Secretariat, ¶ 2.15; and C-2289 - Letter from Michael Lyle (IESO) to Nancy Baines re Feed-in Tariff Contract F-000681-WIN-130-602 between IESO and the Supplier dated May 4, 2010 - Notice of Termination pursuant to Section 10.1(g) (February 18, 2020), and Notice of Arbitration dated December 22, 2020, paragraph 51.

6 CER-Secretariat, ¶ 2.16.

7 CER-Secretariat, ¶ 2.18.

8 CER-Wood-1, pages 2 and 3.

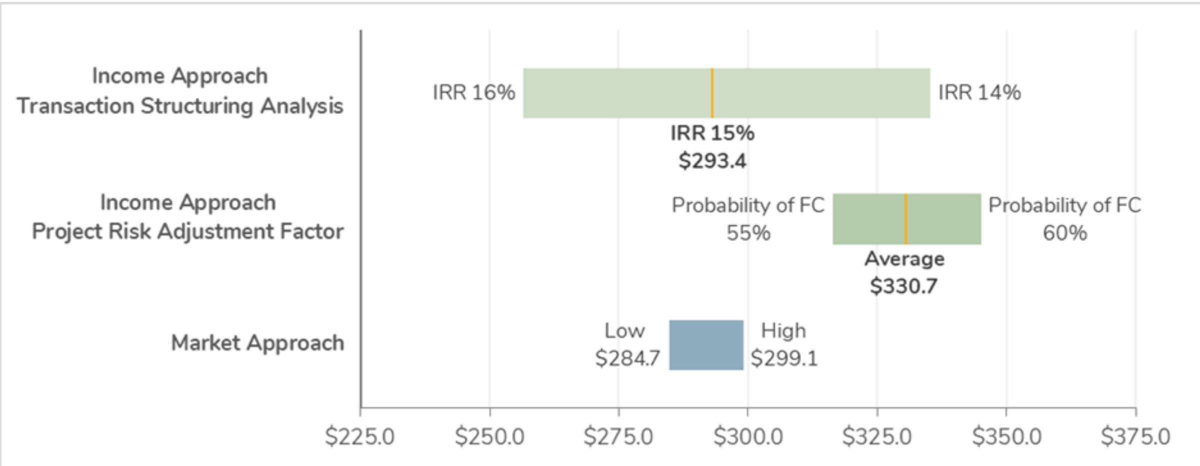
C. Secretariat-1 Conclusion

2.5 In Secretariat-1, we noted that in the absence of the Alleged Breaches, the value of the Project would have been higher as at February 2020 than it was at the time of NAFTA 1. This was primarily due to the significant growth in the global offshore industry since NAFTA 1, including in North America, the improvement in the technology used to construct and operate offshore windfarms since NAFTA 1 which caused a significant reduction in the capital and operating costs for offshore wind projects, and the general trend towards renewable energy in Canada and around the world which significantly improved the financing conditions for offshore wind projects. [9]

2.6 We valued the Project as at the Valuation Date, but for the Alleged Breaches, using an income approach, based on the DCF methodology, as well as a market approach, under a comparable transactions methodology.

2.7 Based on the scope of our review as well as the procedures, analyses, assumptions, and restrictions noted in Secretariat-1, our conclusions as to the Claimant's damages, on the premise that the Alleged Breaches of the Respondent are proven, were as follows:

Figure 2-1: Summary of the Valuation of the Project ($ Millions)



9 CER-Secretariat, ¶¶ 5.18 and 6.98 (ii),

Figure 2-2: Summary of Damages Conclusion – Income Approach ($ Millions)

	Income Approach	
	Transaction Structuring	*Risk Adjustment*
FMV of the Project at February 18, 2020, but for the Alleged Breaches (Equity Value)	**$ 293.4**	**$ 330.7**
Less: NAFTA 1 Award	(25.2)	(25.2)
Less: Return of Letter of Credit	(6.0)	(6.0)
Claimants' damages before pre-award interest	**262.2**	**299.6**
Add: Pre-Award Interest	29.2	33.4
Claimants' damages including pre-award interest	**$ 291.4**	**$ 333.0**

Figure 2-3: Summary of Damages Conclusion – Market Approach ($ Millions)

	Market Approach	
	Low	*High*
FMV of the Project at February 18, 2020, but for the Alleged Breaches (Equity Value)	**$ 284.7**	**$ 299.1**
Less: NAFTA 1 Award	(25.2)	(25.2)
Less: Return of Letter of Credit	(6.0)	(6.0)
Claimants' damages before pre-award interest	**253.5**	**267.9**
Add: Pre-Award Interest	28.3	29.9
Claimants' damages including pre-award interest	**$ 281.8**	**$ 297.7**

3. SUMMARY OF GUILLET-1

3.1 In NAFTA 1, Dr. Guillet was retained on behalf of the Respondent to provide his views on the valuation of the Project (the "**Green Giraffe Report"**). In the Green Giraffe Report, Dr. Guillet concluded that the Project had a value "*close to zero and in any case below 0.1 MEUR/MW*",[10] as at the valuation date adopted in that report of February 11, 2011.[11]

3.2 In NAFTA 2, Dr. Guillet was retained on behalf of the Respondent to:[12]

i. Provide his independent opinion as to the damages sustained by the Claimant, if any, as a result of the Alleged Breaches, using a valuation date of February 18, 2020; and,

ii. Comment on the assumptions and conclusions in Secretariat-1.

3.3 The main comments provided by Dr. Guillet on Secretariat-1 are summarized below. In Dr. Guillet's view:

i. The counterfactual scenario that we were instructed to assume in Secretariat-1 is inappropriate;[13]

ii. The use of a DCF method to value the Project is inappropriate;[14]

iii. Certain assumptions adopted into our DCF analysis, such as the project schedule, CAPEX, OPEX, debt assumptions, and the expected return to equity holders, were optimistic;[15] and,

iv. Our comparable transactions analysis did not include what Dr. Guillet considered to be appropriate comparables.[16]

3.4 To value the Project as at the Valuation Date, Dr. Guillet conducted his own comparable transactions analysis of 23 transactions carried out between Q3 2008 and Q3 2020 involving what he considered to be "early development stage" projects based in Europe, the US, Australia and Korea. In this analysis, Dr. Guillet:

i. Included six floating wind farm transactions;[17]

ii. Excluded transactions involving what he considered to be "*windfall projects*" that transacted at substantially higher "*windfall prices*". These transactions included what

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10 RER-Guillet, ¶ 6.
11 RER-Guillet, ¶ 11.
12 RER-Guillet, ¶¶ 11-12.
13 RER-Guillet, ¶¶ 122-128.
14 RER-Guillet, ¶ 53.
15 RER-Guillet, ¶¶ 194-197, 200 to 207.
16 RER-Guillet, ¶¶ 227-230.
17 RER-Guillet, ¶ 66.

Dr. Guillet described as the *"US projects with a long term PPA in place (at an attractive price) in addition to site control, and a handful of European projects that have benefited from a unique, and temporary set of circumstances, being the combination of having an old (i.e. high) tariff and having been delayed due to permitting reasons;"*[18]

iii. Did not include any transactions involving windfarms that had any revenue regime / price certainty in place as at the transaction date like the Windstream Project had through the FIT Contract;

iv. Included 13 transactions whereby the amount paid by the buyer was not publicly disclosed, and where the supporting information was not provided in Guillet-1, but which was allegedly *"available to Green Giraffe but subject to confidentiality undertakings;"*[19]

v. Included multi-project transactions with projects at different stages of development, with an arbitrary allocation of the total consideration value between the "early" and "late-stage" assets included in the transaction (i.e., 50% for the early-stage assets and 50% for the late-stage assets);[20] and,

vi. Only included transaction payments that were "*due with certainty and not conditioned by factors outside the project's control.*"[21] In other words, in some of his comparable transactions, Dr. Guillet only considered the amounts that were paid upfront and excluded contingent payments from the total purchase price and implied transaction multiples.

3.5 Guillet-1 did not contain any direct reference or response to any of the analyses set out in the other technical expert reports that we relied upon in forming our conclusions in Secretariat-1, such as 4C Offshore-3, Two Dogs-1, Wood-1, or Power Advisory-2.

3.6 Dr. Guillet concluded that "*… the valuation of the Project as of the Valuation Date [i.e., February 18, 2020] would not be different than the value articulated in the Green Giraffe Report*," which was that the Project "*would likely have no material value.*"[22] In other words, in Dr. Guillet's opinion, the value of the Project did not change at all over the nine-year period between February 2011 and February 2020.

[18] RER-Guillet, ¶¶ 74-76.
[19] RER-Guillet, Table 4, and footnote 43.
[20] RER-Guillet, ¶¶ 56-57.
[21] RER-Guillet, ¶ 245, and Figure 1 (¶ 66).
[22] RER-Guillet, ¶ 31.

4. SUMMARY OF SECRETARIAT-2

A. *Summary of Responses to Guillet-1*

4.1 In NAFTA 1, the Tribunal awarded damages of $25.2 million to Windstream based on its assessment of the Project's value as at the date of the award (September 27, 2016). This figure was derived from the implied transaction multiples from seven transactions for offshore windfarms in the UK, Germany, and the Netherlands that were carried out between 2009 and 2013.[23]

4.2 In Secretariat-1, we noted that in the absence of the Alleged Breaches, the value of the Project would have been higher as at February 2020 than it was at the time of NAFTA 1. This was primarily due to the significant growth in the global offshore wind industry, including in North America since NAFTA 1; the improvement in the technology used to construct and operate offshore windfarms since NAFTA 1 which caused a significant reduction in the capital and operating costs for offshore wind projects; and, the general trend towards renewable energy in Canada around the world significantly improved the financing conditions for offshore wind projects.[24]

4.3 Dr. Guillet concluded that the value of the Project did not change over the nine-year period between February 2011 (the valuation date adopted in Guillet-1) and February 2020, and that, in the absence of the Alleged Breaches, it would "*likely have no material value*" as at the Valuation Date. This conclusion is not credible and is inconsistent with the contemporaneous evidence. It is inconsistent with the fact that comparable, and even earlier stage offshore wind projects without any revenue regime, were acquired for significant sums of money in the period leading up to the Valuation Date, including projects in newer offshore wind markets such as the United States and Taiwan. Further, Dr. Guillet's comparable transactions analysis in Guillet-1 suffers from several flaws and errors that render his conclusions inaccurate and unreliable. Therefore, in our opinion, Dr. Guillet failed to provide a meaningful or reliable analysis of the Claimant's damages in this matter.

4.4 We summarize the key issues with Guillet-1 below and provide our detailed comments in Sections 5 through 7 of this report.

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[23] C-2040 - Windstream Energy LLC v. Canada, PCA Case No. 2013-22, Award (September 27, 2016), ¶¶ 484 and 439, and NAFTA 1 RER-BRG-2, page 87; NAFTA 1, RER-Green Giraffe, ¶ 94. See Section 5 below for a summary of the NAFTA 1 tribunal's calculation of damages.

[24] CER-Secretariat, ¶¶ 5.18 and 6.98 (ii), and Appendix 1.

A.I *Advancement in the Offshore Wind Industry between February 2011 and February 2020*

4.5 Dr. Guillet's conclusion that the value of the Project did not change at all over the nine-year period between the valuation date adopted in his first report for NAFTA-1 (February 2011) and the valuation date in NAFTA 2 of February 18, 2020 contradicts many of the other comments made throughout Guillet-1, where he acknowledged the significant advancements in the offshore wind industry since 2011. For example, he stated:

i. "*Since the Green Giraffe Report was written, there is a larger universe of lenders for offshore wind projects, and the challenges identified in paragraphs 111-114 of the Green Giraffe Report have been reduced to some extent.*"[25]

ii. "*… premiums for projects under development also decreased [since the Green Giraffe Report] … In [Dr. Guillet's] view, the IRR expectations for the development phase would still be 20-25% (probably closer to the top of the range in 2015 and nearer (sic) 20% in 2020.*"[26] All else equal, a lower IRR expectation in 2020 compared to 2015 would translate into a higher value for the Project in 2020 vs. 2015.[27]

iii. "*… utilities and increasingly oil and gas companies … have the experience of paying significant upfront fees for exploration blocks and **have lately** developed an appetite to invest in offshore wind.*"[28] (emphasis added)

iv. "*… Obviously developers and contractors have learned to do this [i.e. the construction of offshore wind projects] **better today** than 5 or 10 years ago, and understand how to mitigate risks, but the risks have not gone away.*"[29] (emphasis added)

v. "*Since the Green Giraffe Report, equity funding [for offshore wind projects] has become more widely available.*"[30]

vi. "*[Since the Green Giraffe Report] … non-recourse debt finance is also more widely available, and has been procured in new markets like the USA and Taiwan.*"[31]

4.6 His conclusion also contradicts the many comments that he and Green Giraffe have expressed in presentations available in the public domain in the period leading up to the Valuation Date. For example, in a Green Giraffe presentation given by Dr. Guillet in April of 2019, Dr. Guillet

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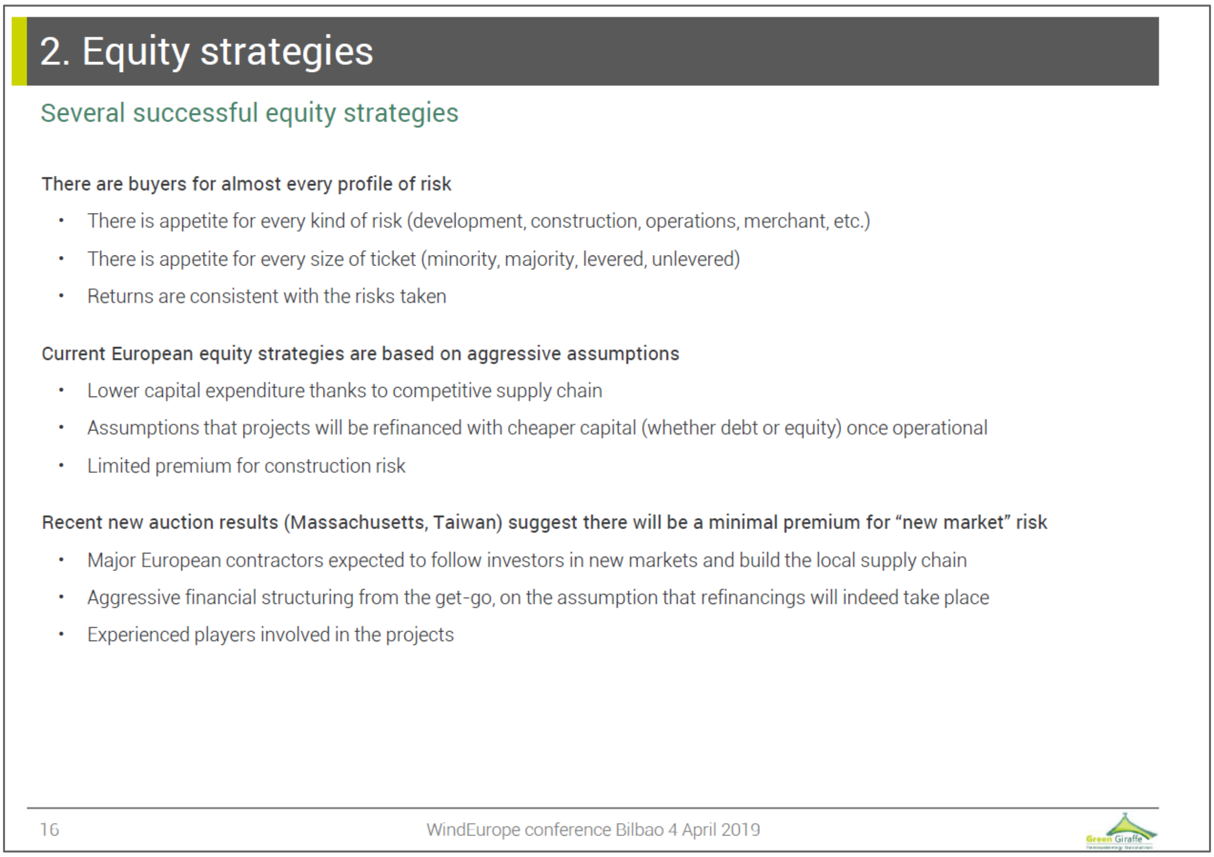
25 RER-Guillet, ¶ 84.
26 RER-Guillet, ¶ 224.
27 We note that all else equal, using a 20% IRR in our transaction structuring approach (instead of 15%) would result in a value of approximately $147.3 million for the Project as at the Valuation Date. See Appendix 2.
28 RER-Guillet, ¶ 63.
29 RER-Guillet, ¶ 83.
30 RER-Guillet, ¶ 91.
31 RER-Guillet, ¶ 93.

included the following slide which summarized the recent improvements in offshore wind valuation as at April of 2019:[32]

Figure 4-1: April 2019 Green Giraffe Presentation, Slide 16



4.7 In this same presentation, Dr. Guillet noted that as at April 2019: [33]

i. There has been "*decent, if regularly shrinking, premium for construction risk and early development (permitting) risk*";

ii. The perception of offshore wind risk is "*improving as experience and track record builds up*";

iii. "the debt market has shown it was ready to take construction risk [for offshore wind projects] on attractive terms (leverage, pricing, covenants)";

iv. The overall size of greenfield debt transactions in the offshore wind industry had increased substantially since 2011/2012;

[32] C-2216 - Green Giraffe Presentation entitled "Recent trends in offshore wind finance" (April 4, 2019), slide 16.

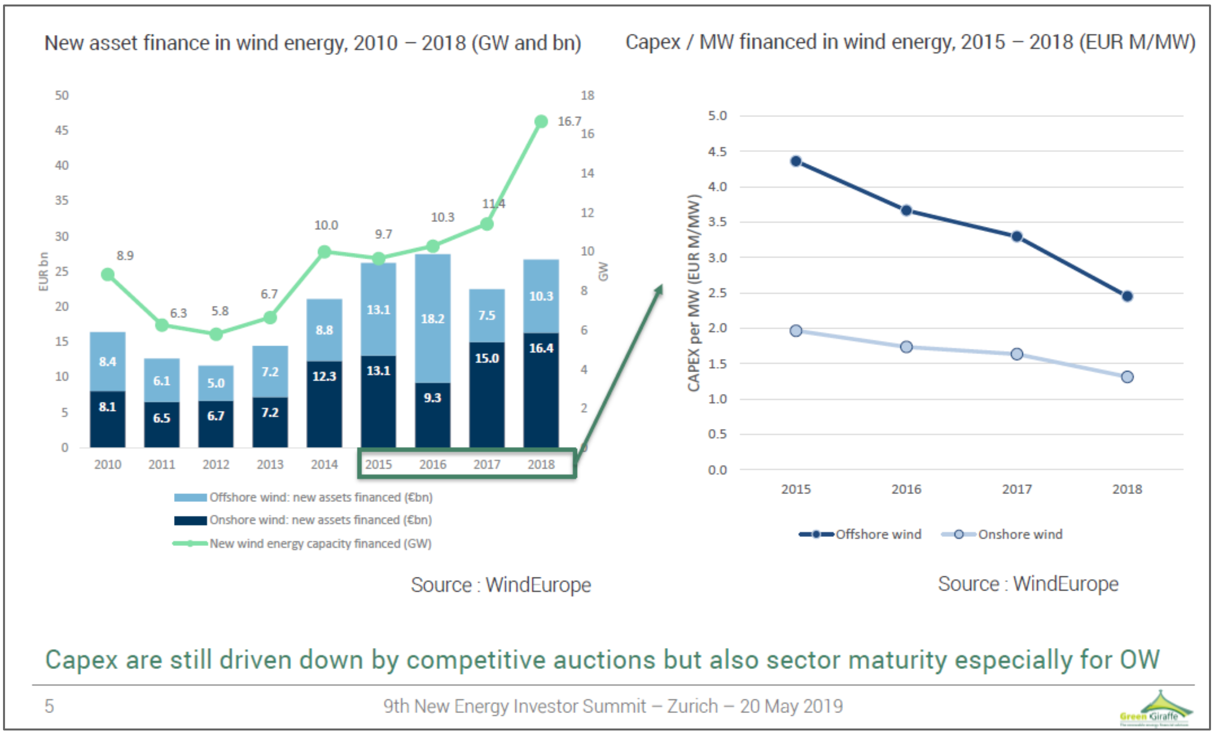
[33] C-2216 - Green Giraffe Presentation entitled "Recent trends in offshore wind finance" (April 4, 2019), slides 13, 15, 16, 23 and 24).

v. Offshore wind debt financing *"has now become mainstream"; and*

vi. There was a "*record number of projects funded last year*", which included "*several large greenfield projects.*"

4.8 As noted in Secretariat-1, part of the reason for the increase in the valuation of the Project between NAFTA 1 and the Valuation Date was due to the reduction in the capital costs required to build offshore wind projects, due to improvements in technologies. This was similarly noted in a Green Giraffe presentation from May of 2019, as shown below:[34]

Figure 4-2: May 2019 Green Giraffe Presentation, Slide 5



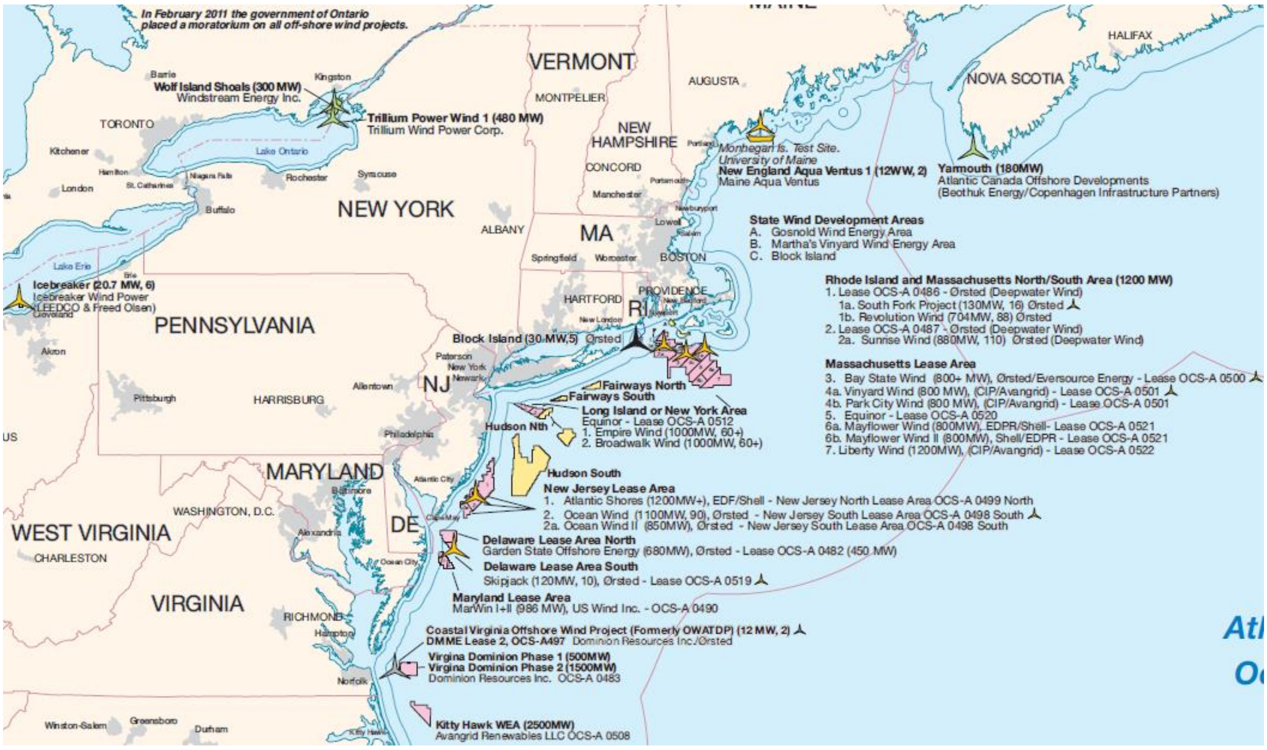
4.9 In Guillet-1, Dr. Guillet does not dispute the fact that capital costs for offshore wind farms have decreased between NAFTA 1 and the Valuation Date for NAFTA 2.

4.10 Furthermore, as noted in Secretariat-1, the first offshore windfarm in North America, Block Island, became operational in December of 2016 (i.e., after NAFTA 1), and since then, there have been several other offshore wind farms in the United States that have been progressing

[34] C-2747 - The Renewable Energy Financial Advisors presentation entitled "Wind of change: finance, regulation, deeptech" (May 20, 2019), slide 5.

through development as well.[35] The figure below shows the location of other North American offshore wind projects in the vicinity of the Project as at April of 2020:[36]

Figure 4-3: North American Offshore Wind Projects in the vicinity of the Project as at April 2020



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35 For example, this includes:

- Coastal Virginia Offshore Wind (Virginia): Became operational in June 2020. Source: C-2835 - The Hill article entitled "US Completes construction of second offshore windfarm" (June 30, 2020).
- Vineyard Wind (Massachusetts): Achieved financial close in September 2021 and commenced construction shortly thereafter. Source: R-0726 - Vineyard Wind press release entitled "Vineyard Wind 1 Becomes the First Commercial Scale Offshore Wind Farm in the US to Achieve Financial Close" (September 15, 2021).
- South Fork Wind (Rhode Island): Achieved financial investment decision in February 2022 and begun construction shortly thereafter. Source: C-2836 - Article entitled "Ørsted and Eversource Joint Venture Approves Final Investment Decision for New York's South Fork Wind Offshore Wind Farm" (February 11, 2022) and C-2837 - Southfork Wind Article entitled "Governor Hochul Announces Start of Construction of New Yorks First Offshore Wind Project" (February 14, 2022).
- Sunrise Wind (New York): Construction of the onshore substation begun in July 2023. C-2839 - Offshore Wind article entitled "Work Starts on Sunrise Wind Onshore Substation" (July 25, 2023).
- Ocean Wind 1 (New Jersey): Expected to commence construction in the fall of 2023. Source: C-2541 - Orsted website: "Transforming New Jersey with Ocean Wind 1" (accessed on August 10, 2023).

While the milestones noted above reflect hindsight information, they demonstrate that as at the Valuation Dates, these other North American offshore wind projects were continuing along their development trajectory, which therefore supports the reasonability of our conclusions derived as at the Valuation Date.

36 C-2812 – North America Offshore Wind Map (April 2020) (derived from Green Giraffe website).

4.11 In a publication issued by Dr. Guillet in September 2022, he similarly noted the upward trend in offshore wind valuations since 2016 whereby he said:[37]

> *Ørsted sold half of Borssele 1 2 in 2020 to Norges at a price of 3.6 M EUR/MW. (Note that **price is higher than it would have been in 2016 for the same asset**, as **risk perception went down in the meantime**, and the equity return requirements of investors similarly went down, **allowing them to bid more for the same kind of cashflows.** (emphasis added).*

4.12 To support his conclusion in Guillet-1, Dr. Guillet prepared an updated comparable transactions analysis where he compared the implied transaction multiples for a set of transactions that occurred between 2015 and 2020, to a set of transactions that occurred between 2008 and 2014 (after his exclusion of "*windfall*" transactions).[38] Dr. Guillet's conclusion is flawed for the following reasons:

4.13 First, the average multiples for late-stage transactions from 2015 to 2020 are over three times higher than the multiples in the Green Giraffe Report from prior to 2015.[39]

4.14 Second, Dr. Guillet failed to note that from 2018 to 2020, i.e., the period leading up to the Valuation Date, there was significant progress in the offshore wind industry. As a result, by bundling together the 2015 to 2020 period he failed to recognize and consider the improvement in the offshore wind valuations in the 2018 to 2020 period compared to the 2015 to 2017 period.[40]

4.15 Using transactions from the 2018 to 2020 period, which is the more relevant time period, results in a higher valuation compared to using transactions from the wider 2015 to 2020 period. As shown in the figures below, the figures from Dr. Guillet's comparable transactions analysis demonstrates an increasing trend over 2015 to 2020 in the value per MW, in both early and late-stage development project transactions.[41]

[37] C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 62.

[38] RER-Guillet, ¶¶ 27, 54 and 169.

[39] The average multiple for late-stage projects in the Green Giraffe Report is €0.26 million/MW, whereas the average multiple for late-stage projects transacted between 2015 to 2020 per Guillet-1 is €0.92 million/MW, which is 3.6x greater. Source: RER-Green Giraffe, page 26-27; RER-Guillet, Table 1.

[40] For example, see ¶¶ 5.15 to 5.18 and Appendix 1 of CER-Secretariat.

[41] The data in these figures are from RER-Guillet, Table 4 and Table 7, corrected for calculation errors as discussed in Section 7 below. We reiterate that the datapoints reflected in the figures above are based on Dr. Guillet's transactions, which contain several issues as discussed throughout this report. Therefore, these data points do not reflect our view on the appropriate transaction multiples to use to value the Project as at the Valuation Date. Rather, we have included these figures above to demonstrate that even based upon Dr. Guillet's own data points, there was an increasing trendline in the value/MW of offshore wind farms in the period leading up to the Valuation Date.

Figure 4-4: Dr. Guillet's Late Stage Development Transactions (2015-2020)

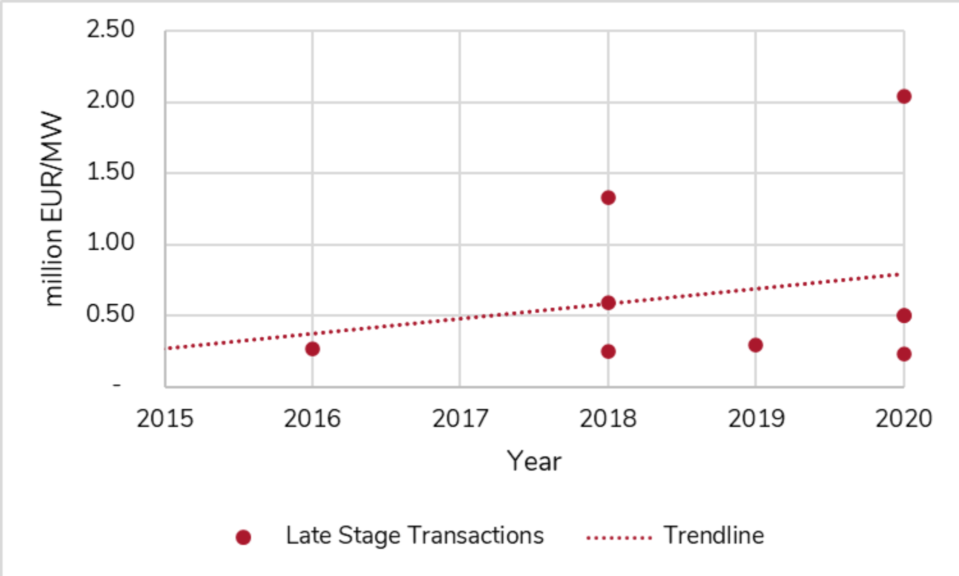
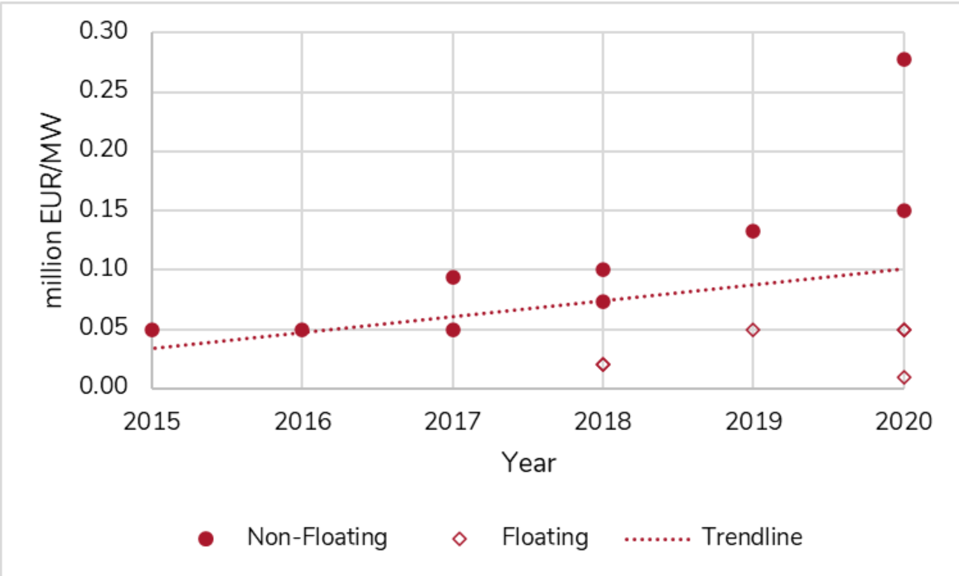


Figure 4-5: Dr. Guillet's Early Stage Development Transactions (2015-2020)



A.II *Improper Exclusion of "Windfall" Transactions*

4.16 One of the most significant flaws with Dr. Guillet's updated comparable transactions analysis in Guillet-1 was that he excluded transactions involving what he considered to be "*windfall projects*" that transacted at substantially higher "*windfall prices.*" These transactions included *"US projects with a long term PPA in place (at an attractive price) in addition to site control, and a handful of European projects that have benefited from a unique, and temporary set of* *circumstances, being the combination of having an old (i.e. high) tariff and having been delayed due to permitting reasons.*"[42]

4.17 As noted in Secretariat-1, the tariffs obtained on offshore wind project revenue contracts around the globe have significantly decreased in the years leading up to the Valuation Date.[43] At the same time, the capital costs required to construct offshore wind projects have also significantly decreased due to improvements in technologies. As a result, Dr. Guillet acknowledged that development stage offshore wind projects that have "*an old (i.e. high tariff) and having been delayed due to permitting reasons,*"[44] would achieve a higher valuation compared to projects that do not have an old (i.e., high tariff). He noted that this was the case with the Neart Na Gaoithe ("**NNG**") project, and the St. Brieuc project,[45] whereby both projects had won high PPA prices several years earlier, and thereby achieved above market valuation multiples when they were sold years later (at a time when construction costs had come down).

4.18 This is very similar to the situation applicable to the Windstream Project at the Valuation Date. But for the Alleged Breaches: it had an old (i.e., high tariff) PPA and had been delayed for several years due to what Dr. Guillet referred to as "permitting reasons" (i.e., the Alleged Breaches). On the other hand, at the Valuation Date, the construction costs have decreased. Therefore, but for the Alleged Breaches, the Project would command a higher valuation multiple compared to the other transactions that took place in the market in the period leading up to the Valuation Date.

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42 RER-Guillet, ¶¶ 74-76.

43 This point is similarly acknowledged at slide 14 of C-2216 - Green Giraffe Presentation entitled "Recent trends in offshore wind finance" (April 4, 2019).

44 RER-Guillet, ¶ 74.

45 We included the NNG transaction in our comparable transactions analysis, see CER-Secretariat, Figure 7-1, and Schedules 5 and 5A. The NNG transaction was announced on May 3, 2018, and the NNG project did not reach financial close until November 28, 2019, which was over 1.5 years after the transaction date. (C-2250 - EDF press release dated November 28, 2019) We also note that the NNG project only had a 15-year revenue contract, while the Windstream Project had a 20-year contract. All else equal, the longer the term of the revenue contract, the higher the value. In Secretariat-1, we calculated that the NNG transaction implied a valuation multiple of $1.71m / MW (approximately €1.11 million/MW) as at May of 2018.

The St. Brieuc transaction wasn't included in our comparable transaction analysis because it took place after the Valuation Date (in March 2020) and thereby represented hindsight information. Nevertheless, we note that this transaction would imply a valuation multiple $0.94CAD/MW, which is relatively consistent with our valuation conclusions from CER-Secretariat.
*Calculated as: $140 million (€90 million) of consideration for a 30% interest in the Project / 149MW acquired (30% of 496 MW) = $0.94/MW (or €0.60/MW).
Source: C-2830 - Printout from Ocean Energy Resources entitled "Iberdrola takes over 100% of Saint – Brieuc offshore wind mega – project in France" (March 10, 2020) and R-0745 - Enerdata publication entitled "Iberdrola takes over 496 MW offshore wind project in France" (March 11, 2020).

4.19 Guillet-1 is internally inconsistent with respect to how buyers would view the value of an offshore wind project with an older PPA that has prices that are above current market prices. On one hand, Dr. Guillet acknowledged that the NNG project achieved a value higher than others due to its above market (old) tariff rate. On the other hand, with respect to the Windstream Project he opined, without any support that *"lenders would actually see [the above market tariff rate] as an additional risk rather than a favourable feature of the Project, as the existence of a visible large gap between the tariff and prevailing market prices **increases the risk of political intervention to reduce such gap**, as has happened in multiple markets over the years,"*[46] (emphasis added). Dr. Guillet's opinion contradicts his own market observations. We have two further observations on this issue:

i. For projects such as NNG, Dr. Guillet considered that the older (i.e., higher) PPA price was a value enhancing feature resulting in a higher transaction multiple. However, for the Windstream Project, he considered the same feature to be a risk enhancing (value-reducing) feature.

ii. For the Windstream Project, Dr. Guillet stated that the value would be depressed due to a risk factor that the government would intervene to reduce the above market PPA price. In other words, he argued that the value of the Project would be decreased for the risk that the government would breach its contractual obligations to honour the FIT contract, even in the 'but-for' world. This is not a proper consideration in a damages analysis to provide full reparations to the Claimant due to the Alleged Breaches. First, the permitting risk that is applicable to the Project absent the Alleged Breaches is already taken into account in our risk adjustment factor and IRR rate. Second, any regulatory risk related to the Alleged Breaches (i.e., risk of government intervention 'but-for' the Alleged Breaches as referred to by Dr. Guillet), is properly excluded from the damages analysis. It is improper for Dr. Guillet to reduce the Claimant's compensation due to the Alleged Breaches for potential breaches of the NAFTA by the Respondent in the 'but-for' case (or for potential future similar breaches).

4.20 Despite the similarities between the NNG project and the Windstream Project, Dr. Guillet excluded the NNG transaction from his comparable transactions analysis. As a result, his analysis of "comparable" transactions does not reflect the premium that would be applicable to the Project due to its above-market PPA price as at the Valuation Date, which is the main driver of the Project's value as at the Valuation Date. Therefore, his "comparable" transactions are not truly comparable, and significantly understate his valuation conclusions for the Project.

[46] RER-Guillet, ¶ 40, bullet 2.

A.III *Failure to Consider the Impact of the Project's High PPA Price Relative to the Market in his Comparable Transactions Analysis*

4.21 Dr. Guillet stated that: [47]

> *The price level of the PPA is relevant for the value at FC/FID and later but has little relevance prior to that (or only for projects close enough to FC that it can be assessed with reasonable certainty. A handful of projects like NNG benefitted from windfall effects … lenders would also see a PPA too far 'out of the money' as a risk that they would want to mitigate (likely by offering a smaller amount of debt), no matter what the price level of the PPA.*

4.22 In other words, Dr. Guillet's view is that all else equal, two offshore windfarm projects that already had revenue certainty,[48] but which were not yet what he considered to be "*close enough*" to FC/FID, would have the same value, even if one of the projects had a PPA price that was significantly higher than the other one.

4.23 Dr. Guillet's assertion is unsupported and is illogical from a valuation standpoint. The value of a business is a function of its prospective cash flows. [49] If one business has a contract that will allow it to sell its products, for example, at double the price of the other one, then all else equal, the business with the higher contract price would be worth more.[50]

4.24 When conducting a comparable transactions approach for development stage offshore wind projects prior to FC/FID, one needs to consider:

i. Whether the potentially comparable transaction involves a project that has a PPA at all. In the context of preparing a valuation of the Project, transactions involving projects without a PPA or without revenue certainty cannot be used to value the Project (which had revenue certainty through the FIT Contract as at the Valuation Date) as they are not comparable; and,

ii. The actual PPA price for the project acquired in the potentially comparable transaction.

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47 RER-Guillet, ¶ 238.

48 The use of the term "revenue certainty" throughout this report implies that a project has certainty in the price per MWh component of the total revenue line through a PPA contract or similar contract that guarantees a specific price to be paid per MWh of energy generated by project. (In Secretariat-1, we referred to this as "revenue clarity", although in this report we have refined the terminology used to distinguish the characteristics of the FIT contract from other revenue regimes that may have provided clarity, but not certainty).

49 C-2537 - "Business Valuation in Canada" by Dr. Howard E. Johnson (2020), Chapters 1 and 5, PDF page 25.

50 As shown in Figure 7-2 of CER-Secretariat, most of the comparable transactions identified had a PPA price that was significantly lower than the PPA price that Windstream would have obtained from the Project, and also a PPA that was for a shorter duration than Windstream.

4.25 Dr. Guillet ignored these crucial aspects in his valuation of the Windstream Project as at the Valuation Date, which undermines the credibility of his comparable transactions analysis.

4.26 In contrast, in our comparable transactions analysis, we only included transactions which had the most salient characteristics of the Project. In other words, we included transactions involving projects that: 1) had revenue certainty at the date of the transaction (i.e., they had a PPA or other revenue agreement or mechanism in place that provided a form of revenue certainty similar to the FIT Contract),[51] but 2) had not yet reached FID/FC. We also considered the relative difference in the PPA prices of the comparable transactions in our analysis.[52]

A.IV *Failure to Review and Consider the Various Technical Expert Reports*

4.27 Our analyses and conclusions in Secretariat-1 were supported by the detailed work carried out by several independent technical experts. For example, the project scheduling assumptions, capital costs, and O&M cost inputs were derived from the reports prepared by the Wood Group and Ian Irvine, who themselves had relied upon other technical reports prepared by OCC/COWI and Weeks Marine.

4.28 While Dr. Guillet provided several critiques of the assumptions around the Project's scheduling, capital costs, and operating costs, his comments were limited to the high-level summaries of the technical experts' conclusions contained within Secretariat-1, and his report did not contain any direct references or provide any direct commentary on the detailed support underpinning these assumptions set out in the reports prepared by the Wood Group or Ian Irvine.

4.29 For example, at Figure 2-2 of Secretariat-1, we provided a "Summary of Tasks per Wood Report Development Programme" and noted that the schedule "*upon which our damages analysis is based is detailed out in the "Wolfe Island Shoals Development Programme" attached to the Wood Report*". There, we also included a footnote reference to Appendix B of the Wood Report.

4.30 Nevertheless, based on our review of Guillet-1, it appears that Dr. Guillet did not review or consider the detailed analyses set out in the "Wolfe Island Shoals Development Programme" set out in Appendix B of the Wood Report. For example, with respect to Figure 2-2 of Secretariat-1, Dr. Guillet stated:

[51] See our discussion below in subsection 5.B on the differences between the revenue certainty under the FIT Contract and the ROC regime in the UK.

[52] CER-Secretariat, ¶ 7.5, Figure 7-2, and ¶ 7.10.

i. *"[A]s a practical matter, putting together 'Design, Procurement and Construction' as a single task in the table is misleading, as these tasks are largely separate, and successive, and each step is dependent on other items having been achieved."*[53]

- In Appendix B of the Wood Report, the "Design, Procurement and Construction" category is broken out into 94 separate and successive tasks.[54] It is not treated as a "single task." It was simply shown in one category for purposes of the summary table in Secretariat-1.

ii. *"[T]he proposed timetable is not internally consistent as it has installation lasting until March 2025 and COD taking place in December 2024, whereas it seems impossible to have COD before the end of installation."*[55]

- In Appendix B of the Wood Report, it is clear that "installation" is actually completed by November 2024, which is before COD.[56] The "end date" for installation noted in the Figure 2-2 summary table in our report was simply the end date of the winter season during which installation would be carried out.[57] Therefore, Dr. Guillet's failure to review Appendix B of the Wood Report resulted in his incorrect conclusion that there was an internal inconsistency in Wood's schedule.

4.31 In Guillet-1, Dr. Guillet only provided three paragraphs of commentary on the capital cost assumptions, and only one paragraph of commentary on the operating costs adopted into our analysis, without any reference or consideration of the approximately 40 pages of detailed analyses on these inputs set out in the expert reports prepared by 4C and Ian Irvine.[58] Dr. Guillet did not provide his own independent opinion on what the CAPEX/OPEX would have been for the Project, as he did not prepare his own independent DCF analysis for the Project as at the Valuation Date.

4.32 As discussed further in subsection 5.D.II below, at the time of NAFTA 1, Dr. Guillet noted that in his capacity as a financial advisor to offshore wind projects, he typically relies upon technical advisors to advise on issues around construction costs and engineering issues.[59] He also confirmed in NAFTA 1 that SgurrEnergy (the predecessor to the Wood Group) is one of the "*top technical experts*" in the field of offshore wind, is "*highly credible*", and "*one of the two*

53 RER-Guillet, ¶ 128.
54 CER-Wood, Appendix B, ID 285-405.
55 RER-Guillet, ¶ 128.
56 CER-Wood, Appendix B, ID 456.
57 CER-Wood, Appendix B, ID 409.
58 CER-4C Offshore-3, pages 3-20; CER-Two Dogs (Capex Opex Sensitivity Report), pages 8-29.
59 C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 189.

[engineering firms] that have been accepted by lenders to do the role of lender's technical advisor."[60]

4.33 By failing to review, consider, or comment on the detailed analyses set out in the various technical expert reports that underpinned our conclusions, in particular the reports prepared by Mr. Irvine and the Wood Group on project scheduling and capital and operating costs, Dr. Guillet's assessment of the value of the Project as at the Valuation Date, but for the Alleged Breaches, is incomplete and unreliable.

A.V *Other Significant Issues with Dr. Guillet's Comparable Transactions Analysis*

4.34 In addition to the issues noted above, there are numerous other significant issues with Dr. Guillet's comparable transactions analysis which we summarize below:

i. Dr. Guillet ignored contingent consideration for some of the transactions in his comparable transactions analysis.[61] This is fundamentally incorrect from a valuation standpoint. For example, if, all else equal:

- Transaction A: The buyer is willing to pay $1 million up front, and $1 million in a year from now if certain conditions are met; and,
- Transaction B: The buyer is only willing to pay one payment of $1 million up front, without any contingent consideration.

Then the value of the project in Transaction A must, by definition, be higher than the value in Transaction B, given the additional contingent payments. Dr. Guillet's failure to account for the contingent payment would imply that these two projects are of equal value. This is incorrect. In contrast, in our analysis, for transactions that included contingent consideration, we accounted for the risk associated with the contingent consideration and included it in the calculation of the implied value per MW transaction multiples. However, in Guillet-1, Dr. Guillet ignored the contingent consideration. This is incorrect and serves to understate the value per MW for transactions that included contingent consideration.[62]

ii. Dr. Guillet included floating wind farm transactions in his comparable transaction analysis, which he acknowledged are not comparable to the Project. As further discussed in

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60 C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 186-187.

61 RER-Guillet, ¶ 245. Also see Schedule 1 and Schedule 2.

62 For example, see C-2537 - "Business Valuation in Canada" by Dr. Howard E. Johnson (2020), Chapters 1 and 5: "*The application of open market transaction multiples is further complicated where all or part of the consideration paid involves a non-cash component such as treasury shares of the buyer (particularly where the buyer is a small-cap or micro-cap public company whose shares are thinly traded), promissory notes, or earnout arrangements, which may inflate the observed valuation multiple. Where non-cash consideration is involved, a cash-equivalent price should be estimated for purposes of comparison, where possible.*"

subsection 5.C.II below, floating wind farms are riskier than traditional fixed-bottom offshore wind such as the Project, resulting in higher costs of capital and lower project value. Thus, these floating wind transactions understate the average transaction multiples derived from his analysis and should be excluded. Furthermore, Dr. Guillet's analysis is skewed and understates value, while he calculated average transaction multiples without what he considered to be the "windfall" transactions which results in a lower value, he failed to present any valuation multiples without the floating wind transactions which would result in a higher value.

iii. Dr. Guillet's comparable transactions analysis contains several arithmetic and data errors. For example, in some transactions where the purchaser acquired a 50% interest in the underlying assets, Dr. Guillet divided the consideration paid (which was for 50% of the assets) by 100% of the MW of the assets acquired (when it should only be divided by 50% of the MW), which resulted in an understatement of the implied transaction multiples by half. We describe the arithmetic and data errors contained within Dr. Guillet's analysis in Section 7 of this report.

iv. Several of the transactions included in Dr. Guillet's analysis do not have any publicly available information on the transaction price paid. Dr. Guillet stated that he knows this information from his or Green Giraffe's involvement in those deals. There is no way for a reader to verify the accuracy of these valuation multiples as no source data was provided by Dr. Guillet for the prices paid. For example, there is no way to verify if the valuation multiples he claimed were based on these transactions only reflected the upfront payment provided, and ignored any contingent consideration, or whether he committed math errors as he did in some of his other transactions, as noted above. Since Dr. Guillet is unable to provide any support for these transactions they should be excluded from Dr. Guillet's analysis. Further, for a proper FMV analysis, only the information known or knowable to a market participant should be considered.[63] Notwithstanding our disagreement or inability to verify the data in Dr. Guillet's analysis, his reliance on confidential data that would not have been known or knowable to market participants is inconsistent with the FMV standard of value applied in this case.

v. Dr. Guillet's sample of transactions is selective and incomplete. It appears that he primarily relied on transactions that Green Giraffe was involved in, and either ignored, or misstated the terms from transactions he was not involved in. For example, with respect to the Formosa 1 transaction (a transaction that was included in our comparable transactions analysis, but was excluded from Dr. Guillet's analysis without any explanation), Dr. Guillet incorrectly claimed that the financing of the project was "*not easy*" and that Ørsted provided a completion guarantee to the lenders in order to make

[63] CER-Secretariat, ¶ 5.8.

the project bankable.[64] In this case, Mr. Tetard was directly involved with this transaction personally, and notes that the financing of this project was relatively simple in that the financing was largely oversubscribed by international lenders,[65] with the financial consortium consisting of 11 international and local banks and an export credit agency.[66] Also contrary to Dr. Guillet's assertion, Ørsted was not required to provide a "completion guarantee."[67]

A.VI *Unsupported Claims Relating to US Offshore Wind Lease Transactions*

4.35 Dr. Guillet claimed that the high prices paid on the early-stage US offshore wind lease transactions that took place in the period leading up to the Valuation Date were not applicable to Canada, i.e., the Project.[68]

4.36 There are several issues with Dr. Guillet's speculative and unsupported arguments on this issue and we disagree that these transactions should be excluded from our analysis. We provide our detailed responses in **Section 5.E** below.

A.VII *Improper Comparisons Drawn from Offshore Wind Projects in Harsh Climates*

4.37 In Guillet-1, Dr. Guillet provided several criticisms of the assumptions around the Project schedule, as well as the CAPEX and OPEX assumptions incorporated into our analysis based on the technical expert reports.

4.38 Aside from the fact that Dr. Guillet is not an engineering expert, many of these critiques are misplaced. He inappropriately drew comparisons between the Windstream Project; which was to be located in a freshwater lake, in shallow water shoals, only 10km offshore, using gravity-based foundations (as opposed to monopiles or jacket foundations); and the projects located deep into oceans and seas, which are subject to much harsher climate conditions. Mr. Irvine notes in Two Dogs-2:[69]

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64 RER-Guillet, ¶ 85.

65 Per C-2728 - Macquarie press release entitled "Macquarie Capital makes its final investment decision on the second phase of Taiwan's Formosa I offshore wind farm" (June 8, 2018): "*The financing secured strong interest from a club of local and international banks demonstrating the robustness of the project and the potential of Taiwan's offshore wind sector.*"
Also per C-2723 - Inspiratia Market Insight entitled "Taiwan: the next offshore wind gold rush" (April 12, 2018): In response to Taiwan's new offshore wind strategy, "*In Europe, a number of major players in the sector have answered the call. Following close behind them are offshore wind's biggest lenders, hungry for more favourable terms than in the overly-liquid, fiercely-competitive European market.*"

66 C-2729 - Offshore Wind article entitled "Formosa 1, Taiwan's, first offshore wind farm, has reached financial close" (June 8, 2018).

67 Based on Mr. Tetard's personal experience working directly on the Formosa 1 transaction.

68 RER-Guillet, ¶ 59.

69 CER-Two Dogs-2, section 4.5.

> *WIS is in Lake Ontario, not the North Sea or the Atlantic Ocean. It is fresh water, not salt water. While the Lake Ontario surface level height will vary (mean annual variation 0.5m, seasonal variation 0.3 to 1.1m) the variation is small in comparison to tidal variations experienced at sea (up to 6m for UK offshore wind farms). Mean and extreme wave heights on Lake Ontario (extreme wave heights exceed 6m in Lake Ontario and are between 10m and 14m in the Southern North Sea) are significantly lower than those experienced in the North Sea as are mean and extreme wind speeds ...*
>
> *The WIS environment is completely different to the North Sea, with a completely different and significantly lower risk profile than the projects cited in RER-Jérôme Guillet and used to draw conclusions as to how WIS would have progressed through development, financing and construction had it been allowed to do so.*
>
> *For example, weather risk, and who takes this risk on, is a significant issue regarding project financing. Severe storms could result in major delays to projects resulting in significant cost increases and, in my experience, there are lengthy debates as to what allowance should be made for weather delay and what is borne by the developer and the contractor. The lenders must understand who is taking the risk and whether sufficient allowance has been made in the contract price/contingency. This can drag the financing process out for projects in the North Sea or similarly challenging environments. However, due to the wind and wave climate of Lake Ontario, weather delay risk will be far less of an issue compared to the North Sea.*

A.VIII *Failure to Prepare a DCF Analysis*

4.39 An offshore wind project with a PPA, even if it is yet to reach FC/FID, should be valued based upon the expected future cash flows. This is consistent with Mr. Tetard's experience as an equity investor in the offshore wind industry, and his experience for when he worked together with Ørsted (the global market leader in offshore wind). In particular, Mr. Tetard notes that when he worked on the acquisition of Deepwater Wind in the northeastern United States by Ørsted in 2017/2018, that Ørsted used a DCF model to value all development stage offshore projects with a PPA, even for projects that did not have grid access or all of their permits in place.[70]

4.40 Given the different PPA prices, CAPEX, OPEX, and operating life in different offshore wind projects, it is not possible to derive a sufficiently reliable valuation of the Project based on a comparable transaction approach alone. Therefore, for a thorough and complete valuation of the Project as at the Valuation Date it is imperative to conduct a DCF analysis tailored to the specifics of the Project, in addition to a comparable transactions analysis, as we have done in Secretariat-1. Dr. Guillet has not prepared his own independent DCF analysis of the Project

[70] See discussion of this transaction at ¶ 5.17(ii) of CER-Secretariat.

and therefore his valuation is incomplete, and his conclusions are not reconcilable with a properly conducted DCF analysis for the Project.

4.41 As noted in Secretariat 1, according to the IVSC, an income approach "*should be applied and afforded significant weight*" for assets where i) "*the income-producing ability of the asset is the critical element affective value from a participant perspective*" and/or ii) "*reasonable projections of the amount and timing of future income are available for the subject asset, but there are few, if any, relevant market comparables*.[71] While the use of multiple valuation methods is not required according to the IVSC, multiple approaches and methods should be considered, "*... particularly when there are insufficient factual or observable inputs for a single method to produce a reliable conclusion*."[72]

A.IX Other Issues with Guillet-1

4.42 Dr. Guillet has not provided any substantive comments on our analysis of the public company trading multiples and the transactions involving onshore windfarms in Ontario. These analyses were not used to derive the value of the Project in our report but were used to assess the reasonableness of our conclusions from an order of magnitude perspective.

4.43 Dr. Guillet also disregarded the discussions Windstream had with other potentially interested parties in 2017 since none of these conversations advanced to a discussion of a potential transaction. However, Dr. Guillet ignored that the reason these conversations did not progress was specifically due to the Alleged Breaches of the Respondent, that is, the continuing Moratorium in place as at the Valuation Date.

B. Secretariat 2 Conclusions

4.44 Based on our review of the Guillet-1, as well as Mr. Irvine's responses in Two Dogs-2, we maintain that our conclusions on the Claimant's damages as set out in Secretariat-1 are reasonable and appropriate.

4.45 To assist the Tribunal, in Appendix 2 of this report we have included the following three sensitivity calculations on our damages conclusions, to reflect the impact of certain issues raised by Dr. Guillet.

i. 1-Year Delay in the COD: Dr. Guillet argued that the high amounts paid for the US offshore wind leases are not applicable to the Project as the US leases did not have hard deadlines for development. However, per the Wood Report, the hard deadline for the Project would not occur until 19 months after COD, and given that, in Mr. Irvine's view, this base case

[71] C-2278 - International Value Standards (IVS) 2020, section 105, ¶ 40.2.
[72] C-2278 - International Value Standards (IVS) 2020, section 105, ¶ 10.4.

schedule is not optimistic,[73] the 19-month period provides a more than sufficient buffer to avoid applying any discount to the Project value as a result of the FIT Contract deadline. Nevertheless, we have included a sensitivity analysis for this issue raised by Dr. Guillet where we assume a delay of 1-year to COD.[74]

All else being equal, a 1-year delay in the COD would result in a $31.2 million reduction to the value of the Project under the Project Stage Risk Adjustment Factor approach, and a $44.9 million reduction to the value of the Project under the Transaction Structuring approach;[75]

ii. Revised MCOD due to REA Appeal: The Revised MCOD includes 185 days of force majeure related to the REA Appeal. We have included sensitivity calculations to reflect the impact to our damages conclusions if this 185-day adjustment is not accepted by the Tribunal. In this scenario, the Revised MCOD would be July 30, 2024. Accordingly, the COD based on the Project Schedule set out in the Wood Report of December 20, 2024, would be 143 days after this Revised MCOD. Therefore, in this sensitivity calculation, we deducted a penalty payment of $6.4 million[76] in the first year of operations after the Project would reach COD.

All else being equal, removing the adjustment to the Revised MCOD on account of the REA appeal would result in a $2.2 million reduction to the value of the Project under the Project Stage Risk Adjustment Factor approach, and a $3.0 million[77] reduction to the value of the Project under the Transaction Structuring approach;[78] and,

iii. Equity Requirement: In Secretariat-1, we noted that in Mr. Tetard's experience, and based on his discussions with lenders active in project financing of offshore wind projects, lenders would require at least 20% of the Project's construction and development costs to be funded by equity. Dr. Guillet argued that this assumption was "aggressive", and that in his view, lenders would actually require 25% to 30% of the Project's construction and development costs to be funded by equity. While we maintain that the equity requirement

73 CER-Two Dogs-2, section 6.4.

74 According to Dr. Guillet: "*...banks will typically require a substantial time buffer between the planned completion date and the date when the adverse event could happen. For an offshore wind project, such a buffer will typically be at least one year, or ideally a year plus a few months of good construction season*"; RER-Green Giraffe, ¶ 125; and
"*If one takes into account the preparation time for the bid (where bidders did a lot of the traditional late development work like contracting and financing, in order to be in a position to firm up their bids), one adds at least one more year*." RER-Guillet, ¶ 101.

75 See subsection 5.D.II below; and Appendix 2A.

76 $0.15 x 300,000 kW x 143 days = $6.435 million. See C-0245 - Feed-in Tariff Contract, Schedule 1, Version 1.3.0 (May 4, 2010), section 8.1(d).

77 See subsection 6.A.I below.

78 See Appendix 2B.

in our DCF analysis is reasonable, we have nevertheless included a sensitivity analysis for this issue as raised by Dr. Guillet.[79]

All else being equal, assuming an equity requirement of 25% instead of 20% would result in a \$11.1 million reduction to the value of the Project under the Project Stage Risk Adjustment Factor approach, and a \$23.1 million reduction to the value of the Project under the Transaction Structuring approach.[80]

[79] See subsection 6.C.IV below.

[80] See Appendix 2C.

5. COMMENTS ON THE UPDATES TO GREEN GIRAFFE REPORT IN GUILLET-1

5.1 In NAFTA 1, the Tribunal valued the Project as at the date of the NAFTA 1 award (September 27, 2016) based on the midpoint of the average and median implied transaction multiples from seven early-stage transactions for offshore windfarms in the UK, Germany, and the Netherlands that were carried out between 2009 and 2013. Six of these transactions were derived from a list of early-stage transactions set out in the Green Giraffe Report, and one additional transaction was derived from the BRG Report.[81]

5.2 We summarize the Tribunal's calculation of the value of the Project as at September 27, 2016 in the NAFTA 1 award below:

Figure 5-1: Tribunal's Calculation of NAFTA 1 Award

Project Name	Country	MW	Transaction Date	MEUR/MW	Note
Sheringham Shoal	UK	315	Q2 2009	0.10	[1] [2]
Nôrdlicher Grund	Germany	320	Q2 2011	0.10	[1]
Hornsea Subzone	UK	1,200	Q4 2011	0.04	[1]
Wind Nautilus II	Germany	560	Q4 2011	0.10	[1]
Irish Sea Round 3	UK	4,200	Q1 2012	0.02	[1]
PNE Portfolio	Germany	1,200	Q3 2013	0.01	[1]
Luchterduinen	Netherlands	129	Q1 2013	0.08	[3]
Average MEUR/MW				€ **0.06**	
Median MW/MW				€ **0.08**	

	Low	High
Project planned capacity (MW)	300	300
Transaction value per MW (Average and Median)	€ 0.06	€ 0.08
Implied value, MEUR	€ 18.00	€ 24.00
Valuation midpoint (MEUR)		€ 21.00
Euro to CAD as at date of NAFTA 1 award:		*1.485*
Valuation midpoint (MCAD)		$ 31.18
Less: Letter of credit (MCAD)		(6.00)
Equals: NAFTA 1 Award (MCAD)		**$ 25.18**

Source:

1 RER-Green Giraffe, ¶94

2 We note that in RER-Guillet-1 ¶54, this transaction is noted to have occurred in Q3 2008.

3 RER-BRG 2, ¶331, correccted in Respondent's Closing Statement from NAFTA 1, p. 260: ($0.11 MCAD/MW converted to Euro at exhange rate on transaction date of 1 Euro = 1.35 CAD)

[81] C-2040 - Windstream Energy LLC v. Canada, PCA Case No. 2013-22, Award (September 27, 2016), ¶¶ 479 to 485.

5.3 The Tribunal in NAFTA 1 adopted a valuation date of September 27, 2016, and relied upon the transactions set out in the Green Giraffe Report and BRG Report which were carried out between 2009 and 2013. It does not appear that the Tribunal in NAFTA-1 considered the impact of any transactions that were carried out since Q3 2013 in forming its conclusions on the value of the Project as at September 27, 2016.

5.4 In Guillet-1, Dr. Guillet provided an update of his analysis set out in the Green Giraffe Report. As part of this update, he included a revised table of what he considered to be 23 early-stage transactions based in Europe, the US, Australia, and Korea.[82] This table included:

i. The same six early-stage transactions from the Green Giraffe Report which were carried out prior to 2014;

ii. Two additional transactions carried out in Q4 2011 and Q4 2012, which were not included in the Green Giraffe Report;

iii. Nine new transactions carried out between Q4 2015 and Q3 2020; and,

iv. Six new transactions for <u>floating wind farms</u> carried out between Q4 2015 and Q3 2020.

5.5 Based on his updated analysis, Dr. Guillet concluded that the median and average transaction multiple for the 15 early-stage transactions carried out between 2015 and 2020 was 0.06 MEUR/MW.[83] Dr. Guillet concluded that: [84]

> *The valuation granted to the Project under the First NAFTA Award, at CAD 31 M (corresponding to EUR 21 M, calculated using a valuation of 0.07 MEUR/MW), is consistent with a project "not fully permitted, but with good visibility on getting there". As suggested in the Green Giraffe Report, this is a relatively optimistic view of the progress actually made by the Project, within the range that can be considered to apply to the Project.*

5.6 In this section, we provide our comments on the updates to the Green Giraffe Report contained within Section 3 of Guillet-1. Our comments relate to the following key issues:

i. <u>Offshore wind project life cycle</u>: Dr. Guillet conducted his comparable transactions analysis by broadly categorizing offshore wind projects between early and late development stages. Whereas we focused on specific characteristics like revenue certainty and progress to FID/FC. In our opinion, Dr. Guillet's approach of broadly categorizing the projects into early or late development stage is overly simplistic. Notwithstanding our disagreement with Dr. Guillet's use of broad classification in the market approach, we disagree with him that the Project was in an early development

82 RER-Guillet, Table 4
83 RER-Guillet, ¶ 55.
84 RER-Guillet, ¶ 111.

stage, as defined by him. In subsection 5.A below, we provide our analysis of the four milestones considered by Dr. Guillet and discuss the appropriate classification for the Project, but for the Alleged Breaches;

ii. Dr. Guillet's analysis of UK Round 3 projects: This analysis contains several flaws: (a) Dr. Guillet erroneously included projects in this analysis that were not UK Round 3 projects, (b) his analysis included incorrect and missing information, and (c) he considered renewable obligation certificates ("**ROC**s")[85] as revenue certainty when, in fact, the ROC multipliers changed on several occasions and were dependent on the market conditions over the 15-20 years that the projects would receive ROC's, that is, the UK Round 3 projects did not have revenue certainty like the Windstream Project did. We provide our detailed comments on this analysis in subsection 5.B below;

iii. Offshore wind project valuation: Dr. Guillet's valuation of the Project based on his comparable transactions approach contained several issues as discussed in subsection 5.C below. Correcting for these issues results in a higher valuation for the Project;

iv. US offshore wind lease transactions: Dr. Guillet provided several speculative and unsupported reasons for why he believed that the high prices paid in the recent US offshore wind transactions would not be applicable to the Project. We provide our detailed comments on these issues in subsection 5.D below; and,

v. Offshore wind financing: Dr. Guillet stated that there are several challenges in financing offshore wind projects. As discussed in subsection 5.E below, these "challenges" are either incorrect, not applicable to the Project, and/or contradictory to comments Dr. Guillet has made publicly.

A. Offshore Wind Project Life Cycle

5.7 Dr. Guillet's analysis is largely premised on his distinction between what he defines as "early development" phase and "late development" offshore wind projects. He stated that a project in the "early development" stage is focused on four milestones: site control, permits, a revenue regime, and grid access, while a project in the "late development" stage would be focused on contracting and financing.[86]

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[85] Under the Renewables Obligation (**"RO"**) scheme, electricity suppliers are required to source an increasing proportion of electricity from renewable sources. The process starts with renewable power projects obtaining accreditation under the scheme and being issued ROCs based on the net renewable electricity that they generate. These projects can then sell these ROCs to electricity suppliers, who will redeem them in order to meet their renewables obligation. Source: C-2745 - OFGEM Renewables Obligation (RO) – Guidance for generators that receive or would like to receive support under the Renewables Obligation (RO) scheme (April 2019).

[86] RER-Guillet, ¶¶ 48 to 50.

5.8 As detailed in Appendix 2 of Secretariat-1, it is important to consider these four milestones when assessing the value of a development stage offshore wind project. However, we disagree with Dr. Guillet on the following points:

i. It is a widely held view within the offshore wind industry that the most important consideration (out of the four milestones noted above) is a project's revenue regime, i.e., a confirmation of the guaranteed price that it would receive for the sale of its power. An offshore wind project without revenue certainty is simply not comparable to a project that has already obtained revenue certainty, such as the FIT Contract obtained by Windstream. This is because it is only once a project has obtained revenue certainty that it can be valued with a reasonable degree of certainty. In the NAFTA 1 proceedings, Dr. Guillet similarly agreed that "*price stability is a single most important factor in financing renewable projects.*"[87] He also stated the Windstream FIT Contract "*was a very good contract for offshore wind*", due in part to its 20-year term, which was relatively longer than other offshore FIT contracts, and its price stability.[88]

ii. We agree that site control is an important milestone for a development stage offshore wind project, however we disagree with Dr. Guillet that the absence of complete site control would "*be seen as a fundamental weakness and prevent a project from having any material value.*"[89] Instead, in Mr. Tetard's experience, a potential buyer of an offshore wind project would consider what the path to obtain complete site control is, and whether there is any competition for the site. In Windstream's case, "*the Project had priority over all other applications to lease the crown lands that the Project would require. Therefore, Windstream had an exclusive and priority position secured on the site that the Project would be built on.*"[90] As a result, from a valuation perspective, the risk around site control for the Project would be immaterial, but for the Alleged Breaches.[91]

- In his discussions of the New York offshore wind lease acquired by Equinor in December of 2016 for $56.9 million, Dr. Guillet noted that that while these sites did not "*formally have revenue clarity*", the appreciation by investors was that revenue clarity was highly likely, and therefore, the risk of this issue would be minimized.[92] Therefore, Dr. Guillet's comments on the necessity for formal site control are

[87] C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 194.

[88] C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 195.

[89] RER-Green Giraffe, ¶ 70.

[90] CER-Secretariat, ¶ A2.8, with reference to First Witness Statement of Ian Baines, ¶¶ 56-57.

[91] Since the PPA was offered by the Ontario government, in our view, it would be reasonable for a buyer to expect that the Ontario Government would also offer a lease to the project, and by that, offer site control.

[92] RER-Guillet, ¶ 163.

internally inconsistent with his comments on the necessity of formal revenue clarity when valuing an offshore wind project.

iii. Given the differences in the regulatory framework in different jurisdictions, it is inappropriate and an oversimplification to distinguish development stage projects into the binary "early development" and "late development" categorizations as done by Dr. Guillet in his valuation analysis. In different jurisdictions, these four milestones are not typically achieved in the same order. Therefore, in our view, the more objective way to categorize development stage projects is by reference to a project's progress towards each of the milestones, with revenue certainty being the most crucial one, from a financial and valuation perspective, as it establishes the economic visibility/certainty of the project.

5.9 In the Green Giraffe Report, Dr. Guillet also acknowledged that the order and ease by which offshore wind projects obtain the four milestones noted above can differ substantially by jurisdiction, and therefore *"the value of a non-permitted project needs to be evaluated on a case by case basis in each country."*[93]

5.10 We note that this is generally consistent with our comments in Secretariat-1 whereby we stated that:[94]

> *[D]epending on the country, and the regulatory framework within each country, the above noted elements that compose a 'shovel-ready' project are gathered in different orders. In some markets, site control comes first, in other markets, grid access comes first, and in other markets, the PPA comes first. It is also important to note that a project that has secured a PPA (and which is sufficiently attractive economically) typically completes the development phase.*

5.11 Therefore, as noted in Secretariat-1, when selecting comparable transactions to use as benchmarks to value the Project, rather than applying arbitrary distinctions between "early stage" and "late stage" development projects, we only included "*transactions that had 'revenue clarity' at the date of transaction (i.e., they had a PPA or other revenue agreement or mechanism in place)*" and "*transactions involving projects at the development phase, where the project had not yet reached FID / FC.*"[95] We then separately considered the impact of the other differentiating factors for each comparable transaction that would impact value, such as permits, grid connection, site control, PPA price, length of PPA Contract, number of turbines, turbine capacity, max development depth, and wind speed.[96] For example, we noted that most of the comparable transactions identified had a PPA price that was significantly lower than

93 RER-Green Giraffe, ¶ 69.
94 CER-Secretariat, ¶ A2.12.
95 CER-Secretariat, ¶ 7.5 (ii) and 7.5 (iii).
96 CER-Secretariat, Figure 7-2.

the PPA price that Windstream would have obtained from the Project, but for the Alleged Breaches, per the FIT Contract.

5.12 Based on the four milestones set out above, Dr. Guillet categorized the Project as "*an early development project*."[97] We disagree. As set out in Secretariat-1, we note the following with respect to the Project in relation to the four milestones considered by Dr. Guillet as distinguishing factors between "early stage" and "late stage" development projects:

i. Site control: As noted in Secretariat-1:[98]

> *Windstream had already submitted applications for all project areas which was registered and accepted by the MNR. This meant that Windstream's applications took precedence over all others for this site and would receive priority attention from the MNR. This further means that Windstream would have access rights to the project site, that it required for its FIT Contract. As a result, Windstream had priority over all other applications to lease the crown lands that the Project would require. Therefore, Windstream had an exclusive and priority position secured on the site that the Project would be built on.*

The Project had a priority status for the land lease that eliminates most, if not all, of the risk associated from site control. The priority status for a land lease is materially analogous to site control from a risk and value perspective.

ii. Grid access: As noted in Secretariat-1 prior to the Valuation Date, Windstream had received confirmation from the IESO that the Project had a grid connection.[99] In NAFTA 1, the Tribunal similarly concluded that the Project had a grid connection.[100]

iii. Revenue regime: The Project had a revenue regime through the FIT Contract, which as stated in Secretariat-1, provided it with a 20-year fixed price (subject to inflationary increases) to be paid by the OPA/IESO for offshore wind power to provide greater investor certainty and to ensure that the FIT Contract would be "*… financeable by way of long-term limited recourse debt financing to fund the project.*"[101]

iv. Permits: As at the Valuation Date, Windstream still required certain approvals from the Government of Ontario and the Government of Canada to advance the Project into a construction stage project. As noted in Section 2 above, part of the 'but-for' or

97 RER-Green Giraffe, ¶ 181.
98 CER-Secretariat, ¶ A2.8, with reference to First Witness Statement of Ian Baines, paragraph 56-57.
99 CER-Secretariat, ¶ 2.12 and footnote 23, with reference to First Witness Statement of Ian Baines, paragraph 93 and footnote 49. We note that in NAFTA 1, Dr. Guillet confirmed that he did not understand how grid connection works under the FIT Contract in Ontario. Source: C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 200.
100 C-2040 - Windstream Energy LLC v. Canada, PCA Case No. 2013-22, Award (September 27, 2016), ¶ 475.
101 CER-Powell, ¶¶ 18-19; and CER-Secretariat, ¶ 4.10.

counterfactual case that we have been instructed to assume was that the *"Ontario Government would have dealt with Windstream in good faith and would not have subjected the Project to unreasonable regulatory delays,"* and that based on the evidence set out in the Wood Report, "*Windstream and WWIS would have obtained environmental and other permits and approvals for the Project by February 20, 2023.*"[102]

5.13 Notwithstanding our disagreement with Dr. Guillet on the proper categorization of development stage offshore wind projects, we note that Dr. Guillet has inconsistently applied his own criteria when distinguishing between "early development" and "late development" stage projects. For example, several of the projects included in his summary of "late stage" projects at Tables 7 and 8 of Guilllet-1 did not have permits or grid access as at their respective transaction dates.[103]

5.14 In particular, according to Table 8 of Guillet-1, five out of 24 transactions involving what Dr. Guillet defined as "late development" stage projects did not have permits in place as of their respective transaction dates.[104] This is similar to Windstream, which also did not yet have permits in place and therefore if these "late development" stage transactions for projects without permits would have been included within Dr. Guillet's "early development" stage calculations, it would have increased his value conclusions for early development stage projects.

[102] CER-Secretariat, ¶¶ 2.12 and 2.18-2.19.

[103] For example, the assets with a PPA included in the Ørsted US assets transaction in Q1 2019, which Dr. Guillet categorized as "late stage" and which was also included in our comparable transactions analysis (denoted as "Revolution Wind & South Fork" in Figure 7-1 and 7-2 of CER-Secretariat) did not have grid access or permits, as at the transaction date. Source: C-2209 - Ørsted press release entitled "Ørsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019). Seagreen 1 also did not have revenue certainty at the transaction date as it was yet to bid in the upcoming UK Contract for Difference auction. Source: R-0744 - SSE news release entitled "SSE acquires Fluor Ltd.'s 50% share of Seagreen Wind Energy Limited" (September 25, 2018).

[104] Dudgeon, Gemini, Ørsted US assets, Empire Wind, and Maryland Bay are listed as "No" under the "Permits" column. Source: RER-Guillet, Table 8. The Dudgeon and Gemini transactions occurred in 2012 and 2013 respectively and therefore were outdated as at the Valuation Date. The Ørsted US assets transaction relates to the Revolution Wind and South Fork transaction from February 2019, which was also included in our comparable transactions analysis, and the Empire Wind and Maryland Bay transactions occurred after the Valuation Date.

B. Dr. Guillet's Improper Analysis of UK Round 3 Projects

5.15 In the Green Giraffe Report, Dr. Guillet stated that out of the 18 zones allocated as "Round 3" projects in the UK in January 2010, by November of 2015:[105]

i. One was under construction,

ii. Three were at a stage where they could expect to start construction soon,

iii. Three were consented but without a tariff regime, and,

iv. 10 were abandoned or dormant.

5.16 Dr. Guillet relied on this data to support his conclusion that at the time of the Green Giraffe Report, the project failure rates were high even for projects that already had site control such as the UK Round 3 projects.

5.17 In Guillet-1, Dr. Guillet updated this analysis and alleged that by the end of 2020, three out of the 18 "Round 3" projects that he analyzed in the Green Giraffe Report were operational, four were under construction, two were fully permitted, and the same 10 that were abandoned or dormant as at November 2015 were still abandoned or dormant as at 2022.[106] Dr. Guillet did not provide an updated conclusion in Guillet-1 with respect to the UK "Round 3" projects.

5.18 There are a number of issues with Dr. Guillet's analysis and the conclusions he has drawn from the UK Round 3 projects:

i. Nine out of the 18 projects included in Dr. Guillet's list of UK Round 3 projects were not UK Round 3 projects at all. Rather, they were part of the Scottish Territorial Waters leasing round ("**STW**").[107] If Dr. Guillet intended to include the STW projects in this list, then his list was incomplete. For example, he excluded the 588 MW Beatrice offshore wind project which was fully commissioned during 2019.[108]

ii. It is incorrect to characterize the STW projects as having "site control" in the same way as the UK Round 3 Projects or the Windstream Project. The 10 STW sites were initially provided with "Exclusivity Agreements" that allowed them to take the first step towards

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[105] RER-Green Giraffe, ¶ 70.

[106] RER-Guillet, ¶ 51 and Table 3.

[107] This includes: The Inch Cape and NNG projects, and the following seven projects which were included within the 10 projects that were abandoned or dormant: Islay, Solway Firth, Wigtown Bay, Kintyre, Forth Array, Bell Rock, and Argyll Array. Source: C-1913 - 4C Comparables (Excel), tab 'Database'.

[108] C-1913 - 4C Comparables (Excel), tab 'Database'. Filtering the 'Round' column for "Scottish Territorial Waters 1" results in 10 wind farms (the nine listed in footnote 107 above and the Beatrice wind farm which was not included in RER-Guillet, Table 3).

securing a commercial lease.[109] Three of these projects (Bell Rock, Kintyre, and Forth Array) were withdrawn by the developer before the confirmation of site control.[110] An additional two sites were deemed by Scottish Ministers to be unsuitable for offshore wind and were not progressed as part of the final plan (Solway Firth and Wigtown Bay).[111] Therefore, only five out of the 10 STW projects were provided with actual lease agreements and confirmed site control (Islay, Argyll Array, Beatrice, Inch Cape, and NNG)[112] and three out of these five are being developed, or have already been commissioned (Inch Cape, NNG, and Beatrice).[113]

iii. In Two-Dogs 2, Mr. Irvine provides a detailed analysis setting out why the UK Round 3 projects are not sufficiently comparable to the Project. For example, he notes that the UK Round 3 Projects are larger and consist of differing technology, metocean conditions, distance to shore, and water depth.[114]

iv. There is missing and/or incorrect information in Table 3 of Guillet-1:

- Dogger Bank A & B, comprising 2.4 GW of the 3.6 GW is described by Dr. Guillet as "fully permitted" as at the end of 2020, in Table 3 of Guillet-1. However, this project had reached FID in November 2020 and was already under construction as at the end of 2020.[115]

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[109] C-2563 - Marine Scotland Part A – The Plan entitled "A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters" (March 2011), page 15.

[110] C-2563 - Marine Scotland Part A – The Plan entitled "A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters" (March 2011), pages 31 and 39; and C-2561 - Windpower Monthly News Release entitled "FOR pulls out of Forth Array offshore project" (November 22, 2010).

[111] C-2563 - Marine Scotland Part A – The Plan entitled "A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters" (March 2011), page 41.

[112] C-2570 - Offshore Wind News Release entitled "Crown Estate to Lease 5 Sites Offshore Scotland" (October 28, 2011).

[113] As at the end of 2020:

1) Inch Cape was consented. It was originally consented in 2014 and again in 2019 when the developer re-submitted an application for a new design. Source: C-2748 - Inch Cape Wind Press Release entitled "Inch Cape Wind Farm Granted Consent for Improved Offshore Proposal" (June 18, 2019).
2) NNG was under construction. It reached FC on November 28, 2019. Source: C-2250 - EDF Renewables Press Release entitled "The EDF Group launches the construction of Neart na Gaoithe 450 MW offshore wind farm along with new Irish partner, ESB" (November 28, 2019).
3) Beatrice was fully operational as of June 2019. Source: C-2534 - Beatrice Wind article entitled "Beatrice is a fully operational 84 Turbine Offshore Wind Farm" (Undated).
4) Islay was abandoned by its developer due to company restructuring. Source: C-2594 - Imeche.org news article entitled "SSE axes planned offshore wind farms" (March 26, 2014).
5) Argyll Array was abandoned by its developer due to unsuitable ground and wave conditions and presence of protected sharks. Source: C-2539 - Reuters News Release entitled "Scottish Power becomes third firm to scrap UK offshore wind farm" (Undated).

[114] CER-Two Dogs-2, section 4.1.2, 4.2 and 4.5.

[115] C-2772 - Dogger Bank Press Release entitled "Dogger Bank Wind Farm A and B reaches financial close" (November 26, 2020)

- Hornsea Project 3 obtained development consent on the last day of 2020 for a 231-turbine project. The current design of the project is in the region of 2.4 GW.[116] This update is not reflected in Table 3 of Guillet-1.

v. All 10 projects in Table 3 of Guillet-1 that were abandoned or cancelled as at November 2015 did not have permits in place or revenue certainty at their time of their cancellation or abandonment. Dr. Guillet alleged that the UK Round 3 projects had "*revenue certainty under the [renewable obligation certificates] ROC regime then in place*".[117] However, ROCs do not bring revenue certainty in the way that a FIT contract does since ROC prices are market-dependent, so they fluctuate and do not provide price certainty. Therefore, these cancelled projects are not comparable to the Windstream Project. For example, the multiplier on ROCs changed on several occasions from 1.5 ROCS/MWh between 2006-2010 to between 1.8 and 2.0 ROCS/MWh from 2010 onwards.[118] The challenges associated with bringing projects to financial close under the ROC regime were part of the reason for the introduction of the Contract for Difference ("**CfD**") mechanism in 2013:[119]

> *In particular, CfDs lower the costs to developers of financing a project, by reducing exposure to volatile wholesale prices and reducing project risks. This greater degree of price certainty means that hurdle rates can be reduced. Moreover, investors are able to secure support through a CfD at an earlier stage in development than under the Renewables Obligation, further reducing development risk. Finally, the structure of the CfD as a private law contract means that developers have greater certainty over their rights and obligations than in a scheme governed solely by regulations.*

vi. In the Green Giraffe Report, Dr. Guillet referred to the projects that were part of the ROC regime but without CfDs as "*consented but without a tariff regime*."[120] In other words, Dr. Guillet's comments in the Green Giraffe Report imply that he did not consider that the ROC regime provided revenue certainty to the projects.

vii. All 8 projects that were not cancelled as at the date of the Green Giraffe Report (November 2015) were either operational, under construction, or consented by the date of Guillet-1. In other words, these projects were still active as at the date of Guillet-1.

[116] C-2776 - Press Release entitled "Hornsea Project Three Offshore Wind Farm given development consent" (December 31, 2020). Also see C-1913 - 4C Comparables (Excel), tab 'Database', column 'ConsentAuthorised'.

[117] RER-Guillet, ¶ 228.

[118] C-2745 - OFGEM Renewables Obligation (RO) – Guidance for generators that receive or would like to receive support under the Renewables Obligation (RO) scheme (April 2019), page 70-71.

[119] C-2585 - Gov.uk Report entitled "Electricity Market Reform – Contract for Difference: Contract and Allocation Overview" (August 2013), ¶ 1.10.

[120] RER-Green Giraffe, ¶ 71.

5.19 As a result, the analyses set out in the Green Giraffe Report and in Guillet-1 on the UK Round 3 projects are supportive of the notion that the failure rate is relatively low for the projects that had already obtained actual revenue certainty. This is consistent with our assessment of the Project stage risk adjustment factor set out in paragraphs 6.97 to 6.105 of Secretariat-1.

5.20 See figure below for a corrected version of Table 3 from Guillet-1:

Figure 5-2: Table 3 of Guillet-1 with Secretariat Corrections[121]

	Round 3 projects	Size (MW)	Status (Green Giraffe Report)	Status (end 2020) (Guillet-1)	Status (end 2020) Secretariat Corrections
1	Moray Firth	1,300	Consented but no CfD	950 MW under construction	
2	Firth of Forth	3,500	Under development	1,075 MW under construction	
3	Dogger Bank	7,200	First 4,800 MW consented, but no CfD yet	3,600 MW fully permitted	3,600 MW fully permitted, of which 2,400 MW (Dogger Bank A & B) were under construction
4	Hornsea	4,000	First 1,200 MW consented and with CfD	1,200 MW operating 1,400 MW under construction	1,200 MW operating (Hornsea 1) 1,400 MW under construction (Hornsea 2) 2,400 MW consented (Hornsea 3)
5	East Anglia	7,200	First 700 MW consented and with CfD	714 MW operational 1,400 MW consented	
6	Rampion	600	400 MW project under construction	400 MW operational	
7	Navitus Bay	900	Consent rejected		
8	Atlantic Array		Project abandoned		
9	Celtic Array		Project abandoned		

C. *Offshore Wind Project Valuation*

5.21 In Guillet-1, Dr. Guillet provided a table of 23 transactions involving what he defined as "early-stage" development projects, that were carried out between Q3 2008 and Q3 2020; and 24 transactions involving what he defined as "late-stage" development projects that were carried out between Q4 2008 and Q3 2020. [122]

[121] We have excluded the following projects from this table as they were part of the STW leasing round as discussed above, and not UK Round 3: Inch Cape, Neart na Gaoithe, Islay, Solway Firth, Wigtown Bay, Kintyre, Forth Array, Bell Rock, and Argyll Array.
The Navitus Bay, Atlantic Array and Celtic Array projects were rejected or abandoned prior to the date of the Green Giraffe Report (November 2015), and none of these projects had revenue certainty at the time that they were cancelled or abandoned. See Schedule 3.

[122] RER-Guillet, Table 4 & Table 7.

5.22 Based on these transactions, Dr. Guillet concluded that early-stage development projects would generally have a value below 0.1 MEUR/MW, and that late-stage development projects would generally have a value of approximately 0.2 MEUR/MW.[123]

5.23 There are several significant issues with Dr. Guillet's transactions analysis, namely, Dr. Guillet:

i. Excluded contingent consideration in the calculation of some of his transaction multiples for certain transactions where a portion of the consideration agreed to by the parties was contingent on future events;

ii. Included transactions for floating wind farms, which are not comparable to the Project;

iii. Excluded transactions he considered to be "windfall" projects, which are comparable to the Project;

iv. Did not consider the impact of PPA price differences between the comparable projects and the Project;

v. Included transactions for wind farms that did not have revenue certainty, which are not comparable to the Project;

vi. Included transactions for which he did not provide support and that did not have publicly available information. Therefore, we were unable to confirm the reliability or relevance of the multiples calculated by Dr. Guillet for these transactions;

vii. Subjectively allocated value between different projects in multi-project transactions;

viii. Inexplicably left out certain transactions from his analysis;

ix. Made arithmetic errors and/or used incorrect data in some of his calculations; and,

x. Included transactions that fell outside of the relevant period, with some transactions being too outdated and some taking place after the Valuation Date.

5.24 We provide our comments on these issues below. Also, see Schedules 1 and 2 for our detailed review of Dr. Guillet's transactions analysis.

[123] RER-Guillet, ¶ 52, Table 6 & Table 9.

C.I *Failure to Include Contingent Consideration*

5.25 Dr. Guillet ignored contingent consideration in some of the transactions in his comparable transactions analysis, stating that he took "*into account only payments that are due with certainty and not conditioned by factors outside the project's control.*"[124] This is fundamentally wrong from a valuation standpoint. All else equal, if:

i. Transaction A: The buyer is willing to pay $1 million up front, and $1 million in a year from now if certain conditions are met; and,

ii. Transaction B: The buyer is only willing to pay one payment of $1 million up front, without any contingent consideration,

then the value of the project in the first transaction must, by definition, be higher than the value in the second transaction, given the contingent consideration. Dr. Guillet's failure to account for the contingent payment would imply that these two projects are of equal value. This is incorrect.

5.26 For example, for Sumitomo's acquisition of LEM from EDPR in Q4 2018, Dr. Guillet calculated a transaction multiple of €0.15 million/MW, which was based on consideration of €43 million.[125] However, the €43 million considered by Dr. Guillet only represented the upfront portion of the consideration paid in this transaction.[126] In addition to the upfront consideration, the transaction also included contingent consideration, the fair value of which was calculated to be €36.6 million.[127] Therefore, the fair value of the total consideration paid in this

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[124] RER-Guillet, ¶ 245. Also see RER-Guillet, ¶ 66, Figure 1, where Dr. Guillet included a note that said: "*this graph only shows the price paid upfront*".

[125] RER-Guillet, Table 7.

[126] C-2186 - EDPR Press Release entitled "EDPR sells 13.5% stake in French offshore wind projects" (December 18, 2018). According to the press release: "*As part of this transaction, EDPR reduces its shareholding to 29.5% in both projects in exchange of a €42.8m* ***payment upfront****, which can increase over time as predefined conditions are met*" (emphasis added).

[127] Source: C-2260 - EDPR 2019 Independent Auditor's Report - Consolidated Annual Accounts and Consolidated Management Report (as at December 31, 2019), page 44. According to the Annual Report, the fair value of the contingent consideration incorporated into this transaction was of €16.408 million for Le Treport and €20.143 million for Noirmoutier.

The EDPR Annual Report provides the following definition of *"Fair value measurement of contingent consideration":*

"The contingent consideration, from a business combination or a sale transaction is measured at fair value at the acquisition date as part of the business combination or at the date of the sale in the event of a sale transaction. The contingent consideration is subsequently remeasured at fair value at balance sheet date. Fair value is based on discounted cash flows. ***The main assumptions consider the probability of achieving each objective*** *and the discount factor, corresponding to the best estimates of management at each balance sheet date…"* (Emphasis added)

transaction was €79.3 million.[128] All else equal, using the total consideration (instead of only the upfront consideration) results in a valuation multiple of €0.27 million/MW,[129] which is nearly double the value of the incorrect multiple adopted in Dr. Guillet's analysis.[130]

5.27 In our analysis, for transactions that included contingent consideration, we accounted for the risk associated with the contingent consideration and considered it in the implied value of the transaction. However, in Guillet-1, Dr. Guillet ignored contingent consideration. This is incorrect and results in a significant understatement of Dr. Guillet's transaction multiples.

C.II *Improper Inclusion of Floating Wind Transactions*

5.28 Six out of the 23 transactions included in Dr. Guillet's table of "early-stage" transactions were floating wind farms. Floating wind farms are not comparable to the Project and should be excluded from the analysis. Dr. Guillet himself acknowledged the non-comparability of the floating wind farms. He stated that:[131]

> *[Floating wind projects] tend to be very early stage development projects … are also seen as more risky than traditional fixed-bottom offshore wind such as the Project, as the technology is not yet proven on a large scale and future costs are less well understood. Accordingly, their finance-ability is seen as lower and will require funders with a higher cost of capital, driving down the value of the projects. The value of these projects can thus be seen as a lower bound for the value of development projects at a similar stage.*

5.29 Further, Dr. Guillet's analysis was not balanced. While Dr. Guillet calculated an average of the transaction multiples without what he considered to be the "windfall" transactions (which caused his valuation conclusions to be lower), he did not present a valuation multiple that excluded the non-comparable floating wind transactions (which would have caused his valuation conclusions to be higher). Excluding the floating wind transactions from Dr. Guillet's sample would increase his average and median multiples by 17% and 40%, respectively.[132]

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128 €42.8 million + €16.408 million + €20.143 million = €79.3 million. (minor differences due to rounding) Source: C-2260 - EDPR 2019 Independent Auditor's Report - Consolidated Annual Accounts and Consolidated Management Report (as at December 31, 2019), page 44.

129 Calculated as: € 79.3 million / (992 MW x 29.5% stake) = 79.3 million / 292.64 MW. MW and stake from RER-Guillet, Table 7.

130 There was another arithmetic error in Dr. Guillet's calculation of the transaction multiple for this transaction with respect to the stake acquired. Correcting for the above errors results in a multiple of €0.59 million/MW ($0.91 million/MW) compared to Dr. Guillet's multiple of €0.15 million/MW. See ¶ 7.2iii for details.

131 RER-Guillet, ¶ 66.

132 See Schedule 2. Dr. Guillet's late stage transactions analysis did not include floating wind projects; therefore, we have only recalculated his multiples for the early stage projects. These percentages are calculated using our recalculation of Dr. Guillet's multiples when floating wind transactions are excluded vs. our recalculation of his average and median multiples shown in RER-Guillet, Table 2.

C.III *Improper Exclusion of "Windfall" Transactions*

5.30 In Dr. Guillet's comparable transactions analysis, he excluded transactions involving what he considered to be "windfall projects", which transacted at substantially higher "windfall prices." These transactions included: [133]

> *US projects with a long term PPA in place (at an attractive price) in addition to site control, and a handful of European projects that have benefited from a unique, and temporary set of circumstances, being the combination of having an old (i.e. high) tariff and having been delayed due to permitting reasons.*

5.31 As noted in Secretariat-1, the tariffs obtained on offshore wind project revenue contracts around the globe have significantly decreased in the years leading up to the Valuation Date.[134] At the same time, the capital costs required to construct offshore wind projects have significantly decreased due to improvements in technologies. As a result, Dr. Guillet acknowledged that development stage offshore wind projects that have "*an old (i.e. high tariff) and having been delayed due to permitting reasons*"[135] would achieve a higher valuation compared to projects that do not have an old (i.e., high tariff). He noted that this was the case with the NNG project and the St Brieuc project,[136] whereby both projects had obtained high PPA prices several years earlier, and thereby achieved above market valuation multiples when they were sold years later (at a time when construction costs had come down). This was because their older PPA prices were higher than the prices being contracted for in newer offshore wind farms around the time of the transactions.

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133 RER-Guillet, ¶¶ 74-76.

134 This point is similarly acknowledged at slide 14 of C-2216 - Green Giraffe Presentation entitled "Recent trends in offshore wind finance" (April 4, 2019)

135 RER-Guillet, ¶ 74.

We included the NNG transaction in our comparable transactions analysis, see CER-Secretariat, Figure 7-1 and Schedule 5 and 5A. The NNG transaction was announced on May 3, 2018, and the NNG project did not reach financial close until November 28, 2019, which was over 1.5 years after the transaction date (C-2250 - EDF press release dated November 28, 2019). We also note that the NNG project only had a 15-year revenue contract, while the Windstream Project had a 20 year contract. All else equal, the longer the term of the revenue contract, the higher the value. . In Secretariat-1, we calculated that the NNG transaction implied a valuation multiple of $1.71m / MW (approximately €1.11 million/MW) as at May of 2018.

The St. Brieuc transaction wasn't included in our comparable transaction analysis because it took place after the Valuation Date (in March 2020) and thereby represented hindsight information. Nevertheless, we note that this transaction would imply a valuation multiple $0.94CAD/MW, which is relatively consistent with our valuation conclusions from CER-Secretariat.
*Calculated as: $140 million (€90 million) of consideration for a 30% interest in the Project / 149MW acquired (30% of 496 MW) = $0.94/MW (or €0.60/MW).
Source: C-2830 - Printout from Ocean Energy Resources entitled "Iberdrola takes over 100% of Saint – Brieuc offshore wind mega – project in France" (March 10, 2020) and R-0745 - Enerdata publication entitled "Iberdrola takes over 496 MW offshore wind project in France" (March 11, 2020).

5.32 This is very similar to the situation applicable to the Windstream Project at the Valuation Date. But for the Alleged Breaches: it had an old (i.e., high tariff) PPA and had been delayed for several years due to what Dr. Guillet referred to as "permitting reasons" (i.e., the Alleged Breaches). On the other hand, at the Valuation Date construction costs have decreased. Therefore, but for the Alleged Breaches, the Project would command a higher valuation multiple compared to the other transactions that took place in the market in the period leading up to the Valuation Date.

5.33 Guillet-1 is internally inconsistent with respect to how buyers would view the value of an offshore wind project with an older PPA that has prices that are above current market prices. On one hand, Dr. Guillet acknowledged that the NNG project achieved a value higher than others due to its above market (old) tariff rate. On the other hand, with respect to the Windstream Project, he opined, without any support that *"lenders would actually see [the above market tariff rate] as an additional risk rather than a favourable feature of the Project, as the existence of a visible large gap between the tariff and prevailing market prices* ***increases the risk of political intervention to reduce such gap****, as has happened in multiple markets over the years"*[137] (emphasis added). Dr. Guillet's opinion contradicts his own market observations. We have two further observations on this issue:

i. For projects such as NNG, Dr. Guillet considered that the older (i.e., higher) PPA price was a value-enhancing feature resulting in a higher transaction multiple. However, for the Windstream Project, he considered the same feature to be a risk enhancing (value-reducing) feature.

ii. For the Windstream Project, Dr. Guillet stated that the value would be depressed due to a risk factor that the government would intervene to reduce the above market PPA price. In other words, he argued that the value of the Project would be decreased for the risk that the government would breach its contractual obligations to honour the FIT contract, even in the 'but-for' world. This is not a proper consideration in a damages analysis to provide full reparations to the Claimant due to the Alleged Breaches. First, the permitting risk that is applicable to the Project absent the Alleged Breaches is already taken into account in our risk adjustment factor and IRR rate. Second, any regulatory risk related to the Alleged Breaches (i.e., risk of government intervention 'but-for' the Alleged Breaches as referred to by Dr. Guillet), is properly excluded from the damages analysis. It is improper for Dr. Guillet to reduce the Claimant's compensation due to the Alleged Breaches for potential breaches of the NAFTA by the Respondent in the 'but-for' case (or for potential future similar breaches).

[137] RER-Guillet, ¶ 40, bullet 2.

5.34 Despite the similarities between the NNG project and the Windstream Project, Dr. Guillet excluded the NNG transaction from his comparable transactions analysis. As a result, his analysis of "comparable" transactions does not reflect the premium that would be applicable to the Project due to its above-market PPA price as at the Valuation Date, which is the main driver of the Project's value. Therefore, Dr. Guillet's "comparable" transactions are not truly comparable, and significantly understate his valuation conclusions for the Project.

C.IV <u>Failure to Consider the Impact of PPA Price Differences in the Comparable Transactions Analysis</u>

5.35 Dr. Guillet stated that: [138]

> *The price level of the PPA is relevant for the value at FC/FID and later but has little relevance prior to that (or only for projects close enough to FC that it can be assessed with reasonable certainty). A handful of projects like NNG benefitted from windfall effects … lenders would also see a PPA too far 'out of the money' as a risk that they would want to mitigate (likely by offering a smaller amount of debt), no matter what the price level of the PPA.*

5.36 In other words, Dr. Guillet's view is that all else equal, two offshore windfarm projects that already had revenue certainty, but which were not yet what he considered to be "*close enough*" to FC/FID, would have the same value, even if one of these two projects had a PPA price that was significantly higher than the other one.

5.37 Dr. Guillet's assertion is unsupported and is illogical from a valuation standpoint. The value of a business is a function of its prospective cash flows.[139] If one business has a contract that will allow it to sell its products, for example, at double the price as the other one, then all else equal, the business with the higher contract price would be worth more. [140]

5.38 If Dr. Guillet's assertion was in fact correct, then a rational investor would always buy the project with the higher PPA price, take the same risk of progressing it to FC/FID (same as the project with a lower PPA), and at the end would have a gain through higher project revenues. In a global market of sophisticated rational investors, market participants will recognize this additional value and will drive up the value of the project with the higher PPA price.

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[138] RER-Guillet, ¶ 238.

[139] C-2537 - "Business Valuation in Canada" by Dr. Howard E. Johnson (2020), Chapters 1 and 5, PDF page 25.

[140] As shown in Figure 7-2 of CER-Secretariat, most of the comparable transactions identified had a PPA price that was significantly lower than the PPA price that Windstream would have obtained from the Project, and also a PPA that was for a shorter duration than Windstream.

5.39 When conducting a comparable transactions approach for development stage offshore wind projects prior to FC/FID, one needs to consider:

i. Whether the potentially comparable transaction involves a project that has a PPA at all. In the context of preparing a valuation of the Project, transactions involving projects without a PPA or revenue certainty cannot be used to value the Project (which had revenue certainty through the FIT Contract as at the Valuation Date) as they are not comparable; and,

ii. The actual PPA price for the project acquired in the potentially comparable transaction.

5.40 Dr. Guillet ignored these crucial aspects in his valuation of the Windstream Project as at the Valuation Date, which undermines the credibility of his comparable transactions analysis. Further, we were able to confirm that at least 14 out of the 23 transactions included in his analysis of transactions involving "early-stage" development projects did not have any revenue certainty as of their respective transaction dates.[141] In a comparable transactions analysis, including transactions that involve offshore windfarms without revenue certainty as at the transaction date (as Dr. Guillet has done), is inappropriate and significantly understates the value of the Project.

5.41 In contrast, in our comparable transactions analysis, we only included transactions which had the most salient characteristics of the Project. In other words, we included transactions involving projects that: 1) had revenue certainty at the date of the transaction (i.e., they had a PPA or other revenue agreement or mechanism in place that provided a form of revenue certainty similar to the FIT Contract),[142] but 2) had not yet reached FID/FC. We also considered the relative difference in the PPA prices of the comparable transactions in our analysis.[143]

C.V *Failure to Provide Support for Transaction Multiples*

5.42 For 21 out of 47 transactions in Dr. Guillet's analysis,[144] i.e., for 44.7% of the transactions, the actual amount paid by the buyer in the transaction was not publicly disclosed. According to Dr. Guillet, the consideration paid in these transactions was allegedly only "*available to Green Giraffe but subject to confidentiality undertakings*."[145] In addition, in Dr. Guillet's calculation of the average transaction multiples, he included transactions that were not disclosed in his

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[141] We were unable to find public information in order to confirm whether the remaining nine transactions had revenue certainty as at the respective transaction date.

[142] See our discussion below in section 5.B on the differences between the revenue certainty under the FIT Contract and the ROC regime in the UK.

[143] CER-Secretariat, ¶ 7.5, Figure 7-2, and ¶ 7.10.

[144] 14 out of the 23 transactions "early stage" transactions and seven out of the 24 transactions "late stage" transactions. See Schedule 1 and Schedule 2.

[145] RER-Guillet, Table 4, and footnote 43.

report at all. He noted: "*The average values are calculated on the basis of the real numbers I have access to (**including those not disclosed in this report**) and not the rounded figures" (emphasis added).*[146]

5.43 Based on the disclosure provided in Guillet-1, there is no way for a reader to verify the accuracy of these valuation multiples as no source data has been provided for the prices paid. For example, there is no way to verify if valuation multiples he claimed were based on these transactions only reflected the upfront payment provided, and ignored any contingent consideration, or whether he committed math errors as he did in some of his other transactions, as noted above. Since Dr. Guillet is unable to provide any support for these transactions, they should be excluded from Dr. Guillet's analysis.[147] In contrast, we have provided all underlying data our selected transactions were based upon.[148]

5.44 Further, Dr. Guillet has provided various figures with obscure and unsupported metrics without identifying the supporting data or calculations relied upon to create these figures. For example, in Figure 1, he produced a figure allegedly showing the upfront payments for offshore windfarms at early development stages, however this figure includes data points referred to by Dr. Guillet as "DI" values which is his *"estimate for each project, taking into account the regulatory framework of the country, the development status of the project at the time of the transaction, and the perception of the market at the time. It does not allocate the same weight to each factor leading to a project being fully permitted, as these may of differing relevance in different countries."*[149] There is no way for a reader to verify the relevance or accuracy of these data points reflected in this figure, as no source data or underlying calculations have been provided for these "DI" values in Guillet-1.

C.VI <u>Unsupported Allocation of Value in Multi-Project Transactions</u>

5.45 Dr. Guillet included transactions for Ørsted's US assets (i.e., Revolution Wind and South Fork in Q1 2019), Empire Wind (Q3 2020), and Maryland Bay/US Wind (Q3 2020),[150] which had

[146] RER-Guillet, footnote 4.

[147] In Section 7 below, we discuss several mathematical errors in Dr. Guillet's analysis in respect of transactions that we were able to independently verify using publicly available data.

[148] Our report was prepared in accordance with CBV Practice Standards. According to CBV Practice Standard 110, ¶ 12.1: *"The Valuation Report shall contain a scope of review that clearly identifies the specific information on which the Valuator relied to arrive at a conclusion"***.** C-1944 - CBV Institute Practice Standard No. 110 (June 17, 2009)
In contrast, Dr. Guillet's report does not appear to have been prepared in compliance with any set of professional standards, but would not meet the CBV Practice Standards with respect to this issue since he has not provided the information on which he relied to arrive at his conclusion.

[149] RER-Guillet, ¶ 67.

[150] When referring to this transaction in his "early stage development projects" table (Table 4), Dr. Guillet referred to this as the US Wind transaction, and stated that it took place in Q2 2020. However, in Table 7, Dr. Guillet

assets in both early and late-stage development. He then arbitrarily allocated the total consideration paid equally between the early and late-stage assets included in the transaction (i.e., 50% for the early-stage assets and 50% for the late-stage assets). Dr. Guillet did not provide any support for this assertion or how he came up with the 50% allocation factor.[151] Based on this arbitrary allocation factor, he calculated the following transaction multiples for the early and late-stage components of these three transactions:

Figure 5-3: Dr. Guillet's Allocation of Early Stage and Late Stage Values[152]

	Total Consideration		MW		MEUR/ MW	
Project	MEUR	Stake	Early stage	Late stage	Early stage	Late stage
	A	B	C	D	(A * 50%) / (B * C)	(A * 50%) / (B * D)
Ørsted US assets*	200	50%	3140	860	0.06	0.23
Empire Wind*	1,000	50%	3600	800	0.28	1.25
Maryland Bay / US Wind**	250	Unknown	1030	270	0.15	0.50

**After correcting arithmetic errors discussed in Section 7*

***The stake acquired in the Maryland Bay / US Wind transaction is not publicly disclosed, and is noted as "n.a." in Guillet-1*

5.46 In Secretariat-1, we also included the transaction for the Ørsted US assets in our comparable transactions analysis, where we noted the following:[153]

> *Massachusetts, US-based Eversource Energy announced their acquisition of 50% of these US based projects from Denmark-based Ørsted A/S on February 8, 2019. Revolution and South Fork Wind are offshore wind farms with capacity of 700 MW and 130 MW, respectively. At the time that the transaction was announced, South Fork had a finalized PPA, and Revolution Wind had signed a PPA agreement that was still subject to finalization. Neither had reached FC as at the transaction date, and wind farms also did not have a grid agreement or permits in place at the time of the transaction.*
>
> *The projects have been awarded contracts for prices ranging from $114/MWh to $213/MWh, which are lower than Windstream's Indexed FIT Contract Price of $253.8/MWh.*
>
> *Additionally, this transaction included a 257 square mile tract of land (164,480 acres). In order to arrive at a value for the Revolution Wind and South Fork wind farms only, we have reduced the transaction value by approximately $115.8 million,*

referred to this as the Maryland Bay transaction, and stated that it took place in Q3 2020. The transaction actually took place in August of 2020. US Wind is the owner of the project, and Maryland Bay is the name of the project.

151 RER-Guillet, ¶¶ 56-57.

152 Based on figures reflected in Tables 4 and 7 of Guillet-1. As noted in ¶ 7.2 below, Dr. Guillet erroneously used a capacity of 860 MW instead of 834 MW his calculations of the multiple for the Ørsted US assets, and he also erroneously used a capacity of 800 MW for the Empire Wind transaction, instead of 816 MW.

153 CER-Secretariat, ¶¶ A4.17 to A4.19.

which we calculated as 164,480 acres x $1,408.15/acre leasing cost (see Figure 7-5 in ***Section 7C*** *[of Secretariat-1]) x 50% interest acquired.*

5.47 Instead of applying subjective percentages to allocate the amount paid between the "early" and "late stage" components of this transaction, we applied an objective methodology based on the $/acre paid for other transactions involving undeveloped offshore wind lease areas (without any revenue certainty, permits, grid access, etc.).

5.48 Based on the above, in Secretariat-1, we concluded on a value of $0.44 million / MW[154] (€0.29 million / MW)[155] for the Revolution Wind and South Fork component of this transaction, which represented the assets from this transaction that most comparable to the Project as at the Valuation Date. In contrast, after correcting for Dr. Guillet's mathematical error (see **Section 7** below) in his calculation of this transaction multiple, his subjective approach results in a multiple of only $0.35 million / MW (€0.23 million / MW).[155]

5.49 We did not include the transactions involving the Empire Wind and Maryland Bay projects from Q3 2020 in our comparable transactions analysis or our FMV conclusions, as these transactions took place after the Valuation Date and therefore these transactions represent hindsight information that are not appropriate to use in an *ex-ante* damages analysis. As noted in Secretariat-1, "*…hindsight information should not be considered in the determination of FMV, since market market participants at that time would not have had the benefit of this information and would have transacted based only on the information available.*"[156]

5.50 However, we did review the Empire Wind transaction as a reasonability check on our valuation conclusions to demonstrate the continued trend towards increasing valuations and increasing appetite from international investors for the North American offshore wind industry as at and around the Valuation Date. In Secretariat-1, we stated that the Empire Wind "*transaction had a value of $1.4 billion, which translates to approximately $0.66 million/MW, based on 2,200 MW of potential. This would imply a value of approximately $196 million for the Project.*"[157] We also noted that as at the transaction date, "*…only Phase 1 of Empire Wind had a revenue*

[154] CER-Secretariat, Figure 7-1.

[155] Based on the Euro to CAD FX rate on the transaction date of February 8, 2019, of 1.504:1.

[156] CER-Secretariat, ¶ 5.11. Also see C-2537 - "Business Valuation in Canada" by Dr. Howard E. Johnson (2020), Chapters 1 and 5: "*Commensurate with the notion of time-specific value, it's generally accepted in notional market valuations, and a fact in open market transactions, that hindsight or retrospective information shouldn't be considered. When negotiating an open market transaction, neither the buyer nor the seller has the benefit of knowledge of events that will take place at a future date. Rather, they can only utilize informed judgement, and as a result, hypothesize such events. Canadian courts have generally found that hindsight evidence is inadmissible when determining value in a notional market context, except in limited circumstances where hindsight has been permitted solely for the purpose of determining whether subsequent events were consistent with the assumptions made and conclusions reached at the relevant valuation date.*"

[157] CER-Secretariat, ¶ 7.23.

mechanism in place. The wind farms also did not have permits or grid agreements at the time".[158]

5.51 In our calculation of the implied transaction multiple of the Empire Wind transaction in Secretariat-1 referred to above, we did not allocate the transaction value between the early and late-stage components. Allocating the value of the Empire Wind transaction between the early and late stage components based on the same methodology applied in our calculation of the transaction multiples for the Revolution Wind/South Fork transaction,[159] results in an implied transaction multiple of $3.19 million/MW (€2.04 million/MW) for Empire Wind.[160] In contrast, Dr. Guillet has calculated a multiple of only $1.96 million /MW (€1.25 million/MW) for the component of the Empire Wind transaction that already had a PPA at the transaction date.

5.52 As for the US Wind / Maryland Bay transaction, we are unable to calculate an implied value as the percentage of the equity stake acquired by Apollo was not publicly available and was not disclosed in Guillet-1.[161] It is therefore unclear how Dr. Guillet calculated the implied transaction multiples for this transaction.

C.VII *Missing Transactions*

5.53 Dr. Guillet's comparable transactions analysis is only based on transactions that he is "*aware of*."[162] As a result, he has left out certain transactions from his analysis, such as the Formosa 1 transaction in Taiwan that took place in January of 2017. This transaction involved an offshore wind project in a new market (Taiwan) that did not have all its permits in place at the transaction date, and which did not reach FC until approximately 1.5 years after the

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[158] CER-Secretariat, ¶ 7.22.
[159] CER-Secretariat, Schedule 5, note 8.
[160] Calculated as: (USD1.1 billion * 1.316 USD:CAD FX rate as at Sept 10, 2020)
– [(80,000+128,000 acres) x 50% stake x $1,408.15 leasing cost per acre]
/ (816 total MW with a PPA agreement at transaction date x 50% stake)
= $3.19 million / MW
/ 1.564 EUR:CAD FX rate on Sept 10, 2020 = €2.04/MW.
Source: C-2318 - Equinor Press Release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020); C-2204 - Equinor News Releases entitled "Equinor offshore wind bid wins in New York State" (2019), and C-2238 - NYSERDA Report entitled "Launching New York's Offshore Wind Industry - Phase 1 Report" (October 2019), Table 1: ORECRFP18-1 Contracting Summary, page 22.
[161] RER-Guillet, Table 4 and Table 7.
[162] RER-Guillet, ¶ 245.

transaction date.[163] As noted in Secretariat-1, this transaction implied a valuation multiple of $0.35 million / MW.[164]

C.VIII *Technical / Arithmetic Errors*

5.54 Dr. Guillet's calculations contain several basic arithmetic errors and incorrect data.[165] For example, in some transactions where the purchaser acquired a 50% interest in the underlying assets, Dr. Guillet divided the consideration paid (which was for 50% of the assets) by 100% of the MW of the assets acquired (when it should only be divided by 50% of the MW), which resulted in an understatement of the implied transaction multiples by half.

5.55 We describe these errors in Section 7 below.

C.IX *Relevant period*

5.56 Out of the 24 transactions in Dr. Guillet's late-stage transactions analysis, 20 had transaction dates that were either more than 3 years old at the Valuation Date[166] or occurred after the Valuation Date. Specifically, 16 occurred before 2017, and four of the transactions occurred after the Valuation Date which represents hindsight information.[167] Out of the remaining four transactions, one involved a project that did not have revenue certainty at the transaction date (Seagreen 1).[168] We included the three remaining transactions in our comparable transactions analysis in Secretariat 1.[169]

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163 C-2150 - Orsted.com article entitled "Ørsted commits to invest in the second phase of Taiwan's Formosa 1 offshore wind farm" (April 26, 2018); states that the permitting process is on schedule (i.e., still ongoing). Financial Close took place in June 2018: Source: C-2155 - Orsted.tw article entitled "Financial close achieved for Taiwan's Formosa 1 offshore wind farm" (June 2018).

164 CER-Secretariat, Schedule 5.

165 RER-Guillet, Table 4 and Table 7.

166 As noted in CER-Secretariat, in our comparable transactions analysis we only considered transactions that were completed in the three-year period prior to the Valuation Date. CER-Secretariat, ¶ 7.5 (i). We limited our analysis to this period given the significant growth in the offshore wind industry in the period leading up to the Valuation Date which would cause older transactions to be less relevant as at the Valuation Date. In particular, the first offshore windfarm in North America, the Block Island Wind Farm in Rhode Island, became operational in December of 2016, which was approximately three years prior to the Valuation Date. CER-Secretariat, ¶ 5.15.

167 See Schedule 1, column 'Transaction Date' and column 'In relevant period'.

168 Per R-0744 - SSE news release entitled "SSE acquires Fluor Ltd.'s 50% share of Seagreen Wind Energy Limited" (September 25, 2018): "*SSE remains focused on preparing the Seagreen Phase1 projects in readiness to bid in the upcoming UK contracts for difference (CfD) auction*," i.e., no revenue certainty as of the transaction date.

169 That is: NNG, Dieppe-Le Treport & Yeu- Noirmoutier (referred to as LEM by Dr. Guillet), and Revolution Wind & South Fork (referred to as "Ørsted US Assets" by Dr. Guillet).

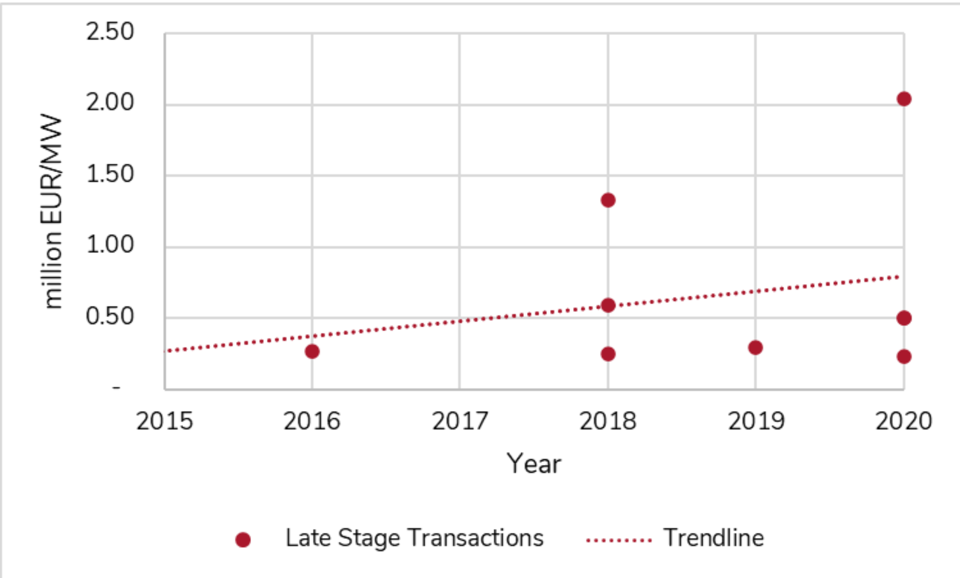
5.57 Out of the 23 transactions in Dr. Guillet's early-stage transactions analysis, 15 had transaction dates that were either more than 3 years old at the Valuation Date or occurred after the Valuation Date. Specifically, 10 occurred before 2017, and five occurred after the Valuation Date which represents hindsight information.[170] Three of the remaining eight transactions were floating wind transactions, and none of the remaining eight transactions had revenue certainty at the transaction date.[171] One of the remaining eight transactions reflected Dr. Guillet's unsupported allocation of the component of the consideration paid for the early stage portion of Ørsted's US Assets in February 2019. Therefore, none of these transactions involved projects that were sufficiently comparable to the Project.. See Section 5.C.VI above for our comments on these allocation factors.

C.X *<u>Trendline of Guillet's Transactions</u>*

5.58 Based on his comparable transactions analysis, Dr. Guillet's concluded that "*there has not been any major move in the valuation of projects under development.*"[172]

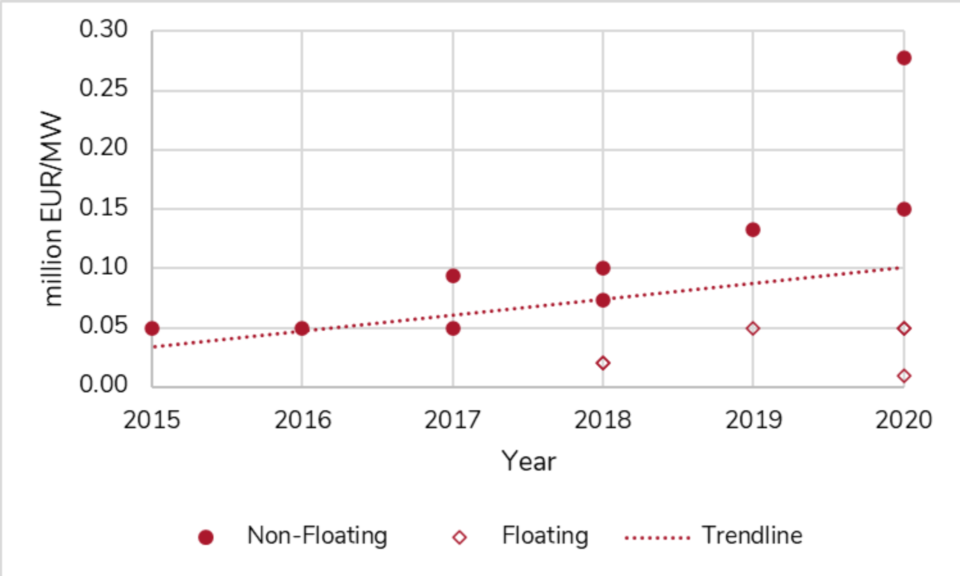
5.59 After correcting for the various issues described above, Dr. Guillet's analysis demonstrates an increasing trendline for the value/MW of late stage development projects in the years leading up to the Valuation Date, as shown below: [173]

Figure 5-4: Dr. Guillet's Late Stage Development Transactions (2015-2020)



[170] See Schedule 2, columns 'Transaction Date' and 'In relevant period'.
[171] See Schedule 2, columns 'Floating wind' and 'Revenue certainty'.
[172] RER-Guillet, ¶ 169.
[173] The data in these figures are from RER-Guillet, Table 4 and Table 7, corrected for calculation errors as discussed in Section 7 below.

Figure 5-5: Dr. Guillet's Early Stage Development Transactions (2015-2020)



5.60 We reiterate that the datapoints reflected in the figures above are based on Dr. Guillet's transactions, which contain several issues as discussed throughout this report. Therefore, these data points do not reflect our view on the appropriate transaction multiples to use to value the Project as at the Valuation Date. Rather, we have included these figures above to demonstrate that even based upon Dr. Guillet's own data points, there was an increasing trendline in the value/MW of offshore wind farms in the period leading up to the Valuation Date.

D. US Offshore Wind Transactions

5.61 Dr. Guillet alleged that the "*recent US transactions [for offshore wind projects] have seen higher prices than those previously seen … and also higher than those in Europe.*"[174] He argued that the bidders in the US offshore wind lease transactions paid substantially above what he would expect for assets "*that have no permit, no grid access and no tariff.*"[175] He provided several reasons for why he believed that the high prices paid in the recent US offshore wind transactions would not be applicable to the Project. Generally, in our opinion, Dr. Guillet's reasons lack support from market data and are highly speculative. We provide our detailed responses to his comments on these issues below.

[174] RER-Guillet, ¶ 59.
[175] RER-Guillet, ¶ 61.

D.I *Alleged Expectation of High PPA Prices on the US Offshore Wind Leases*

5.62 Dr. Guillet speculated that buyers paid higher prices on the US offshore wind leases since they assumed that they would eventually be able to obtain high PPA prices on the projects they planned to build on these sites, and that they would then be able to recoup the high amounts paid on the leases through higher revenues in the future. He further speculated that these purchasers assumed that they would obtain these higher PPA prices assuming that: (1) there would be reduced competition for PPAs available for these projects as they are limited in number; and (2) other purchasers would have paid a similar amount for their own leases, and therefore would similarly expect to obtain higher PPA prices.[176]

5.63 We disagree with Dr. Guillet's arguments for the following reasons:

i. These assertions suggest that the acquirers of the US offshore wind leases would seek to obtain a high (above market) PPA price on the contracts they hope to eventually obtain, and that the state would agree to pay above market prices for electricity. This is an unreasonable and speculative assumption. It would be in the best interest of these states to (1) keep energy prices as low as possible for the consumers (retail and corporates/industrials) and (2) keep energy prices competitive against international energy prices to the extent possible.

ii. In Figure 5-7 below we show that the actual PPA prices obtained by projects that had secured PPAs in the period between May-17 and October 19 in the North-Eastern US were significantly lower than the PPA price that would have been applicable to the Project. These PPAs have been secured at a weighted average price of approximately $121/MWh. As a comparison, WIS's PPA price as at the Valuation Date is $254/MWh, which is approximately 110% higher than the weighted average of the US PPAs.[177] We do not believe that it would be reasonable to expect that, as implied by Dr. Guillet, the future PPAs to be secured by the buyers of the US offshore wind leases could be at prices that would be 110% higher than the PPAs secured on other US projects around the same time period.

[176] RER-Guillet, ¶¶ 56-61.
[177] $254 / $121 – 1 = 110%

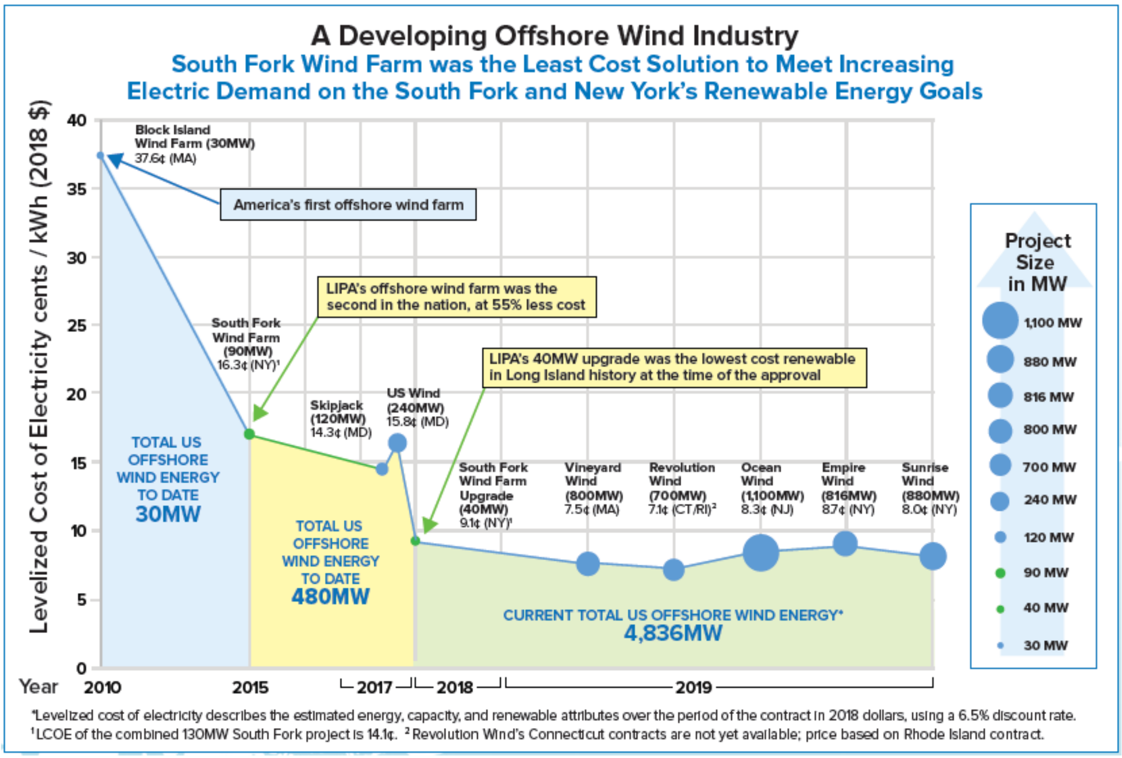
Figure 5-6: PPA Prices Obtained[178]

#	Project	PPA Date	MW	PPA Price (original currency per MWh)	FX Rate	PPA Price ($ per MWh)
1	US Wind and Skipjack	May-17	368	USD 131.93	1.369	$ 180.65
2	South Fork	Jan-17	90	USD 160.33	1.309	209.86
		Nov-18	40	USD 86.25	1.320	113.82
	South Fork weighted average					$ 180.31
3	Vineyard Wind	Jul-18	400	USD 74.00	1.302	96.37
		Jul-18	400	USD 65.00	1.302	84.65
	Vineyard Wind weighted average					$ 90.51
4	Revolution Wind	Dec-18	200	USD 94.00	1.345	126.45
		May-19	400	USD 98.43	1.348	132.64
	Revolution Wind weighted average					$ 130.58
5	Empire Wind	Oct-19	816	USD 83.36	1.309	$ 109.12
Weighted average US projects						**$ 121.49**
6	**Windstream**	**May-10**		**$ 253.80**	**N/A**	**$ 253.80**

This downward trend in US PPA prices was similarly summarized in a document prepared by the Long Island Power Authority in October of 2019 as follows:

178 US Wind and Skipjack: USD 131.93/MWh converted using CAD:USD exchange rate of 1.37 on May 11, 2017. C-2091 - Maryland Public Service Commission Press Release entitled "Maryland PSC Awards ORECS to Two Offshore Wind Developers Projects to Create Jobs, Economic Development in New Industry" (May 11, 2017).
South Fork: C-2757 - Long Island Power Authority (LIPA) fact sheet entitled "South Fork Wind Farm: Fact Sheet"and C-2193 - Eversource 2019 Annual Report, page 30.
Vineyard Wind: USD 74/MWh and USD 65/MWh converted using CAD:USD exchange rate of 1.30 on July 31, 2018. C-2165 – Green Tech Media "First Large US Offshore Wind Project Sets Record-Low Price Starting at $74 per MWh" (August 1, 2018).
Revolution Wind: USD 94/MWh converted using average CAD:USD exchange rate of 1.35 for December 2018. C-2136 - Report (US DOE), 2018 Offshore Wind Technologies Market Report (2018), page 17-18).
Empire Wind: C-2204 - Equinor News Releases entitled "Equinor offshore wind bid wins in New York State" (2019), and C-2238 - NYSERDA Report entitled "Launching New York's Offshore Wind Industry - Phase 1 Report" (October 2019), Table 1: ORECRFP18-1 Contracting Summary, page 22.
Windstream: CER-Secretariat, ¶ 6.14 and FN 146.

Figure 5-7: Decline in US PPA prices 2010 to 2019[179]



iii. As discussed in Secretariat-1, the global weighted average LCOE for offshore wind power has been on a significantly downward trend from 2014 to 2019.[180] This was also acknowledged by Dr. Guillet in his April 2019 presentation.[181] Therefore, Dr. Guillet's assertion that the purchasers of these US offshore wind leases would have expected to obtain a PPA price at a similar or higher level than the Project is misguided.

iv. Dr. Guillet failed to consider the possibility that the amounts paid by the buyers in these US lease transactions in December 2018 were higher also because the valuations in the industry were higher at the time these transactions took place (compared to NAFTA 1). As noted in Appendix 1 of Secretariat-1, in the period leading up to the Valuation Date, the demand for renewable energy assets was increasing at a significant pace, the pool of investors/buyers in offshore wind assets also increased, while at the same time the investors' perceived risk on wind energy assets reduced (implying a reduction in cost of equity requirements). All these effects combined have had a significant upward pressure on project values. As further noted in Secretariat-1, these valuations have also increased due to the improvement in the technology used to construct and operate offshore

[179] C-2757 - Long Island Power Authority (LIPA) fact sheet entitled "South Fork Wind Farm: Fact Sheet", page 3.

[180] CER-Secretariat, ¶¶ A1.17 to A1.19.

[181] C-2216 - Green Giraffe Presentation entitled "Recent trends in offshore wind finance" (April 4, 2019), slide 14.

windfarms since NAFTA 1, which reduced the relative per MW capital and operating costs for offshore wind farms globally. These factors would have similarly applied to the Windstream Project, resulting in a higher value as at the Valuation Date compared to at the time of NAFTA 1.

5.64 Dr. Guillet did not address the significantly lower PPA prices for the US offshore wind projects that had already obtained PPAs by the Valuation Date, compared to the high PPA price that was available to the Project, but for the Alleged Breaches.

5.65 As a result, Dr. Guillet's explanation for why he assumes that the high prices paid in the recent US offshore wind transactions are not applicable to the Project is not supported.

D.II <u>Long-term Option on Development</u>

5.66 Dr. Guillet argued that one reason that the purchasers of the US offshore wind leases paid such high amounts is because the US leases did not have hard deadlines for the development to take place. He therefore argued that these price premiums would not be applicable to the Project since the Project had a hard deadline of five years + 18 months after MCOD to commence commercial operation before the FIT Contract could be cancelled. He speculated that "*a good part of their value [of the US offshore wind leases] is that they represent long term options on the development of the industry.*"[182]

5.67 Based on the evidence set out in the Wood Report, the Project was "*technically feasible and **could be developed and constructed within the timelines specified in the FiT contract** … but for the imposition of the moratorium and cancellation of the FiT contract*" (emphasis added).[183] This point was further confirmed by Mr. Irvine in Two-Dogs 2, whereby he stated: [184]

> *There is no material reason why the Wood Schedule could not be achieved and the precedent set by Nysted and Rodsand II, that were installed in the Baltic in similar metocean conditions using GBFs, would indicate that there is scope to achieve a COD ahead of schedule. This assertion is further supported by Fryslan, where more foundations and WTGs were installed in a shorter installation period that is proposed for WIS.*
>
> *In my opinion, there is no reason why lenders would seek a time buffer beyond that which is facilitated by the WIS FIT Contract.*

5.68 We have relied on the technical expert evidence from Mr. Irvine and from the Wood Report when assessing the risks related to the timelines specified in the FIT Contract.

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[182] RER-Guillet, ¶ 62.
[183] CER-Wood, pages 2 and 3.
[184] CER-Two Dogs-2, section 3.3.

5.69 Dr. Guillet himself noted in NAFTA 1 that in his capacity as a financial advisor to offshore wind projects, he typically relies upon technical advisors who had experience in engineering to advise on issues around construction costs, and issues relating to getting the offshore wind project built and into operation.[185] He also confirmed in NAFTA 1 that SgurrEnergy (the predecessor to the Wood Group, which Mr. Irvine established)[186] is one of the "*top technical experts in the field*" of offshore wind, is "*highly credible*", "*one of the two [engineering firms] that have been accepted by lenders to do the role of lender's technical advisor*" for offshore wind projects, and that they were involved in approximately half of the projects worked on by Green Giraffe.[187] Further, he noted that in another project he worked on with Green Giraffe, SgurrEnergy's involvement brought credibility and comfort to the lenders.[188]

5.70 The Wood Report concluded that the Project would reach COD by December 2024. Based on a Revised MCOD of January 31, 2025, the supplier default date would not occur until July 31, 2026, i.e., 19 months after COD per the Wood Report. In our view, this amount of leeway time would provide a buyer of the Project with sufficient comfort as at the Valuation Date whereby they would not apply any discount to the value of the Project on account of the timelines specified in the FIT Contract. Nevertheless, we have included a sensitivity analysis in this report and note that a 1-year delay in the COD of the Project would result in a reduction to value of $31.2 million under the Project Stage Risk Adjustment approach and $44.9 million under the Transaction Structuring approach.[189]

D.III *Impact of the US Regulatory Process on Project Risk and Value*

5.71 Dr. Guillet argued that another reason why the high prices paid in the recent US offshore wind transactions would not be applicable to the Project was, "*due to the specific nature of the project permitting system in [the US], spread over multiple regulatory authorities (federal, State and regional grid) which increases the appetite for the sector by oil & gas majors*."[190] He further assumed, without any support, that the two-stage regulatory process in the US, i.e., "*federal + State*" was less risky than Canada's regulatory process.[191]

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185 C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 189.

186 CER-Two Dogs (Capex Opex Sensitivity Report), Section 2.1

187 C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), pages 186-187.

188 C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), pages 187 and 189.

189 Of the total impact on the value, $4.6 million to $6.0 million of negative impact is due to the payment of the penalty under section 8.1(d) of the FIT Contract, as under this scenario, COD (December 2025) would be after the Revised MCOD (January 2025). See Appendix 2A for sensitivity calculations on Secretariat-1's DCF model.

190 RER-Guillet, ¶ 59.

191 RER-Guillet, ¶ 64.

5.72 Dr. Guillet's arguments on this issue are unsupported. A multi-stage regulatory process like in the US would generally be considered riskier than a regulatory process where projects require approvals from fewer levels of government. All else equal, having to get approvals from multiple governments and regional grid providers would likely increase the effort and risk involved.

5.73 Dr. Guillet noted that the purchasers of these leases were often utilities and increasingly oil and gas companies, which "*have the experience of paying significant upfront fees for exploration blocks and have lately developed an appetite to invest in offshore wind.*" According to Dr. Guillet, these buyers see the large upfront payments "*as an acceptable risk because there is strong political momentum in favour of offshore wind in the US currently, something which was not available to the Project over the past decade and still is not available.*"[192]

5.74 **First**, this argument is based on the assertion that the lack of political support for offshore wind in Canada should result in a lower valuation for the Project. However, this argument effectively conflates the Alleged Breaches with the regular permitting risk applicable to the Project (which is already taken into account in our risk adjustment factor and IRR rate). Any regulatory risk over and above the regular permitting risk that is due to the Alleged Breaches is properly excluded in our analysis and thus would be inappropriate to adjust for.

5.75 **Second**, this argument is contradictory to several of the comments made by Dr. Guillet in NAFTA 1, such as:

i. "*I mean, there was a new policy to make it happen, which was interrupted, but until it was interrupted, it was a potentially attractive regulatory framework*."[193] In other words, absent the breaches, Dr. Guillet considered that the Canadian regulatory framework would have been "attractive".

ii. "*I mean, I was one of these international players looking at the Ontario market back in 2010, so I can confirm that at -- at that time, it was looking like an attractive market for offshore wind.* ***But the moratorium put a stop to that. But that's just a market context. It would have been -- if the moratorium hadn't played, it would probably be in good place to do offshore wind with the FIT tariff with these policy steps to make these projects doable.***"[194] (emphasis added)

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[192] RER-Guillet, ¶ 63.

[193] C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 194.

[194] C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 215-216.

iii. "*I mean, I'll say it again, it's a good FIT contract. It would have worked as a contract, as a revenue stream. That was one of the tick the box items for offshore wind.*"[195]

5.76 As a result, Dr. Guillet's unsupported assertion that strong political momentum in favour of offshore wind in the US was not available to the Project is not a reasonable explanation for why he considers that the high prices paid in the recent US offshore wind transactions would not be applicable to the Project, 'but-for' the Alleged Breaches, and that the same utilities and oil and gas companies who "*have lately developed an appetite to invest in offshore wind*", would not have paid similar or higher prices to acquire the Project as at the Valuation Date, but for the Alleged Breaches.

D.IV *Impact of Site Control*

5.77 Dr. Guillet argued that higher prices paid for US leases only appeared in transactions for assets with site control, such as the US Wind and Empire+Beacon transactions that took place in Q3 2020, and were not apparent in transactions without site control, such as the Castle Wind and Aqua Ventus transactions.[196] There are multiple issues with this argument:

i. Dr. Guillet asserted that the Project did not have site control, which is an overstatement of risk from a financial perspective. As noted above and in Secretariat-1, the Project had a priority status for the land lease that eliminates most, if not all, of the financial risk associated from site control. The priority status for a land lease is materially analogous to site control from a risk and value perspective.[197]

ii. The transactions Dr. Guillet considered in support of his view of low valuations for projects without site control, i.e., Castle Wind and Aqua Ventus, were floating wind assets. As noted above, floating wind is a newer technology, which is yet to be fully developed and is therefore expected to result in lower valuation multiples compared to the Project. Therefore, it is inapposite to compare the high multiples seen in the US Wind, Empire+Beacon transactions to the Castle Wind and Aqua Ventus floating wind transactions.

iii. As noted in Secretariat-1, as at the date of Empire+Beacon transaction, "*only phase 1 of Empire Wind had a revenue mechanism in place, and neither wind farm had its permits or a grid agreement in place.*"[198] In contrast, the Project had revenue certainty and a

[195] C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 198.

[196] RER-Guillet, ¶ 64.

[197] CER-Secretariat, footnote 24.

[198] CER-Secretariat, ¶ 5.17 vi.

confirmed grid connection. As noted above, in NAFTA 1, Dr. Guillet agreed *that "price stability is the single most important factor in financing renewable projects"*.[199]

5.78 Therefore, the existence of site control in certain US offshore wind transactions is not a reasonable explanation for why the high prices paid in the recent US offshore wind transactions would not be applicable to the Project, but for the Alleged Breaches.

E. Offshore Wind Financing

5.79 Dr. Guillet stated that there are several challenges in financing offshore wind projects.[200] We provide our responses to his arguments on this issue below.

E.I *Risk of Offshore Wind vs. Other Projects*

5.80 Dr. Guillet argued that offshore wind farms "*will always be riskier to build than other projects because (1) much of the construction takes place at sea, which is an inherently hostile environment, and (2) no party has the ability or capacity to take responsibility of the full construction as it involves multiple industrial sectors that still have little overlap*.[201] As we explain below, Dr. Guillet has overstated these risks with respect to the Project.

5.81 **First**, the Project was to be build in a freshwater lake, in shallow water shoals. As Mr. Irvine notes in Two-Dogs 2: "*WIS is in Lake Ontario, not at sea. The environment is well understood and is not hostile.*"[202]

5.82 **Second**, the Project's investors have considerable experience with large offshore oil and gas projects, which face the same above "challenges" cited by Dr. Guillet.[203] **Third**, the same developers of the Project developed the Wolfe Island onshore project, which faced and overcame many of the challenges cited by Dr. Guillet.[204] **Last,** in NAFTA 1, Dr. Guillet acknowledged this point and agreed that the Windstream offshore project is viable, and that building an offshore wind project in freshwater is preferable to seawater.[205]

5.83 In Two-Dogs 2, Mr. Irvine provides the following response to Dr. Guillet's comments on the risk of offshore wind vs. other projects: [206]

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199 C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 194.
200 RER-Guillet, Section 3.3.
201 RER-Guillet, ¶¶ 82-83.
202 CER-Two Dogs-2, section 11.2, Table 5; and CWS-Baines, ¶ 26.
203 CWS-Mars, ¶¶ 42-55; and CWS-Mars 2, ¶ 77.
204 CER-Two Dogs-2, section 2.2.1.
205 NAFTA 1 Day 4 transcript, pages 208 to 210.
206 CER-Two Dogs-2, section 11.2, Table 5.

As offshore wind farms have been getting built since the 1990s. The collective experience and knowledge are ever expanding, a point noted in RER-Jérôme Guillet. WIS would make use of this pool of knowledge and experience to develop best practice contracts and implement best practice project management, as it did for NAFTA1 and continues to do for NAFTA2 …

… Construction risk is largely dictated by metocean conditions and understanding the seabed geology. WIS freshwater metocean risk is low, therefore weather delay risk is low. WIS proposes GBFs and will not be subject to issues such as monopile refusal, where the pile cannot be forced into the seabed, causing construction delays. The GBFs will be manufactured in a port and floated to site by tug, reducing cost and installation risk. WIS construction risk is not complex and is considered low …

… Lenders would prefer a fully wrapped EPC contract and many offshore wind farms were built on this basis. However, there were issues with contractors becoming bankrupt due to a poor understanding of project risks and it became the norm to construct wind farms using a multi-contract approach. Windstream has 36 months to develop and refine its contracting strategy.

Para 83 of RER-Jérôme Guillet states: Obviously developers and contractors have learned to do this better today than 5 or 10 years ago, and understand how to mitigate risks, but the risks have not gone away.

Acknowledgement that the offshore wind industry does in fact learn and improve.

There is no reason why WIS could not have developed and executed robust contracts that would meet lender requirements. Particularly given the low construction risk profile of WIS.

E.II *Universe of Lenders for Offshore Wind Projects as at the Valuation Date.*

5.84 Dr. Guillet acknowledged that as at the Valuation Date, there is a larger universe of experienced lenders and some of the challenges discussed in the Green Giraffe Report "*have been reduced to some extent.*" However, he argued that the funding of offshore wind projects remains a highly specialised competence and the number of lenders with experience in the sector remain relatively limited.[207]

5.85 Mr. Tetard notes that the challenges and risks associated with offshore wind execution have been largely reduced over the past years, and many more lenders have become experienced in funding offshore wind construction, with lenders coming from France, Germany, Spain, UK, Italy, Netherlands, Japan, Korea, Taiwan, Australia, Singapore etc. Therefore, the universe of lenders has increased significantly since NAFTA 1. Examples include Dogger Bank and Hornsea 1 & 2 in the UK both requiring dozens of lenders, as well as the first Asian offshore wind project Formosa 1 in Taiwan which attracted over 20 international lenders (of which the

[207] RER-Guillet, ¶¶ 84-85.

sponsors had to down select 11). To provide a sense of the amounts involved in financings in the period leading up to the Valuation Date, the Hornsea 1 transaction in the UK (which Mr. Tetard worked on) closed in Q4 2018 and had 32 lenders, of which 16 were commercial banks and the other 16 were institutional investors (pension and insurance funds, large asset managers, etc.). Mr. Tetard notes that a total of GBP 3.5 billion of debt was raised for 50% of the project.[208]

5.86 Thus, Dr. Guillet's conclusion that there are limited experienced lenders in the sector and that the value of the Project has not increased since the Green Giraffe Report is not consistent with Mr. Tetard's experience.

5.87 Moreover, Dr. Guillet's comments on the Project's prospects of obtaining financing are also not consistent with his comments from his September 2022 publication in which he stated,[209]

> *"Altogether, there is a full suite of financing tools available to projects at every stage of their life, providing cheap funding for the development, construction, operation of OWF, on predictable and competitive terms, and allowing to optimise the cost of electricity. The availability of funds is not, and has actually never been, an obstacle to the development of the sector."*

5.88 Additionally, Dr. Guillet noted that "*the first financing in Taiwan was done with completion guarantees from Ørsted.*"[210] This is incorrect. Mr. Tetard notes that the three sponsors (i.e., not just Ørsted) had a standby equity facility, with each sponsor contributing a percentage in accordance with their stake in the project. This is completely different from a completion guarantee, which would effectively insulate the lenders from risks of project delays, and costs overruns.[211]

[208] C-2737 - Reuters news release entitled "Orsted divests 50 percent of Hornsea 1 offshore wind farm" (September 18, 2018).

[209] C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 62.

[210] RER-Guillet, ¶ 85.

[211] This is based on Mr. Tetard's personal experience, as he was directly involved with the Taiwan projects.

E.III *North American Offshore Wind Supply Chain*

5.89 Dr. Guillet argued that the North American supply chain is underdeveloped and not competitive,[212] and that that contractors are reluctant to invest in factories in areas with no experience and unknown demand potential, which makes offshore projects more expensive and difficult to build.[213] Dr. Guillet further argued that even with "*highly supportive*" policies in place in the US, and several projects under development (with one already under construction), supply chain issues remain in the US.[214]

5.90 **First**, Dr. Guillet did not specify what factories would allegedly need to be built by third parties for the Project. Mr. Irvine confirms that "*WIS does not require construction of a factory; it requires a GBF fabrication facility that will be financed by Windstream, not contractors*." [215] Additionally, the GBF design was specifically chosen for the Project due to the "*ready supply of raw materials and a supply chain experienced with concrete construction.*"[216] Further, the Project would have been able to rely upon the existing supply chain used by previous projects in the area, therefore, there would not have been any requirement for third parties to invest in factories.[217] As Dr. Guillet himself noted in one of his presentations (and as noted in Secretariat-1): "*Major European contractors [are] expected to follow investors in new markets and build the local supply chain*."[218]

5.91 **Second**, Dr. Guillet ignored that O&M works were already carried out for the onshore Wolfe Island wind project about five kilometers from the proposed Project site; and that "*the data and experience gathered in executing the island onshore project informed the development of the Project.*"[219] He also ignored the infrastructure of the St. Lawrence Seaway, which is a 306-kilometer seaway between Montreal and Lake Ontario.[220] This seaway was used by the onshore wind project located on Wolfe Island to transport wind turbine generators from New York onto Wolfe Island and this same seaway was to be used by the Project.[221] Additionally, the Financial Times article cited in Guillet-1 is not applicable for the Project as it discussed

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212 RER-Guillet, ¶¶ 86-88.
213 RER-Guillet, ¶ 87.
214 RER-Guillet, ¶ 88.
215 CER-Two Dogs-2, section 2.1.
216 CER-COWI (Wind Turbine Gravity Base Foundation Design), section 4.2, page 17.
217 CER-Two Dogs-2, section 2.8.
218 C-2216 - Green Giraffe Presentation entitled "Recent trends in offshore wind finance" (April 4, 2019), slide 16; CER-Secretariat, ¶ 6.87.
219 CER-Wood, Section 2.3.3.
220 C-2831 - The Seaway – Great Lakes St. Lawrence Seaway System "St. Lawrence Seaway Management Corporation" (accessed August 9, 2023)
221 CER-Two Dogs-2, section 2.2.1.

local sourcing requirements in the US,[222] which would not be applicable as the Project is located in Canada and did not have any local supply chain requirements.[223] Mr. Irvine further notes that the Project would not have competed for resources against US offshore wind farms.[224]

5.92 **Third**, as we noted in Secretariat-1: "*Mr. Irvine's calculation of the O&M expenses includes a $3 million per annum premium to the range of O&M costs observed for other offshore wind projects, given that 'WIS is remote from the locus of offshore wind development activities in the USA'.*"[225] Therefore, this issue had been accounted for in the proposed O&M budget for the Project.

5.93 **Last**, Mr. Tetard notes that in Taiwan, there was no supply chain at the time of the development of Formosa 1, which was the first commercial scale offshore wind project built in Asia (excluding China). A vast majority of components for Formosa 1 were supplied from Europe, with vessels offered by experienced non-local suppliers.[226] This shows that it is possible to build a project in a new market which has no local supply chain and be successful in achieving COD on time and on budget. Further, Formosa 1 was built in an environment prone to typhoons and earthquakes.[227] This demonstrates that more complex projects have been built in more challenging conditions than the Project was exposed to, which was going to be built in a freshwater lake, where risks such as earthquakes or typhoons were not anticipated.

E.IV <u>Maturity of the North American Offshore Wind Market</u>

5.94 Dr. Guillet argued that the North American project finance market for offshore wind was not mature at the Valuation Date. Specifically, he argued that "*[a]t [the time of the Green Giraffe report], and until the recent IRA legislation was approved in 2022 in the United States, there was serious doubt about the availability of tax equity at the scale required to do more than a handful of projects, threatening the ability of the market to finance such projects.*"[228] Dr. Guillet also cited examples of financing timelines for US projects compared to European projects.[229]

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222 R-0699 - Financial Times article entitled "Renewable energy Wind power executives worry over US offshore ambitions" (October 24, 2022).
223 CER-Secretariat, footnote 59.
224 CER-Two Dogs-2, section 2.5.
225 CER-Secretariat, ¶ 6.40.
226 This is based on Mr. Tetard's personal experience, as he was directly involved with the Taiwan projects.
227 C-2730 - Clean Technica article entitled "Taiwan's 120 Megawatt Formosa 1 Offshore Wind Farm Reached Financial Close" (June 12, 2018)
228 RER-Guillet, ¶ 90.
229 RER-Guillet, ¶ 90.

5.95 **First**, the issue of tax equity discussed by Dr. Guillet is not applicable to Canada. The main reason offshore wind did not grow in Ontario was due to the Moratorium, which is one of the Alleged Breaches. The relevant analysis is of the development of the Project, in the absence of the Alleged Breaches of the Respondent.

5.96 **Second**, the references made by Dr. Guillet regarding financing timelines is a single sided analysis focused only on the risks, while ignoring other projects that were able to achieve FC in a relatively short time in newer markets. For example, in Taiwan, Formosa I took only 18 months from the time the project was acquired by Ørsted and Macquarie in January 2017 until it reached financial close.[230] At the date it was acquired, the project's development was not yet finalized, the FEED/detailed design and procurement still had to be performed, and some key permits (including signing the PPA) still had to be obtained. This project reached financial close in June 2018.[231]

E.V *Timeline of Debt Financing for Offshore Wind*

5.97 Dr. Guillet acknowledged that since the date of the Green Giraffe Report in 2015, non-recourse debt finance has become more widely available for offshore wind projects and has been procured in new markets like the USA and Taiwan. However, he argued that it remains subject to high standards of due diligence, and that the time required for the Project to reach financial close would likely be longer than for a comparable transaction in Europe.[232]

5.98 Dr. Guillet acknowledged that the Project would have likely raised debt financing and that debt financing is available in newer markets at consistent structures and contractual requirements.[233] His assertion that the time taken for Windstream would have likely been longer compared to European projects is unsupported. Dr. Guillet also did not specify how much longer it could take, or what impact this would have on the Project's value or the Claimants' damages.

5.99 Dr. Guillet argued that "*[r]aising equity and debt in parallel remains a complex endeavour.*"[234] This point is not relevant since, as discussed in Secretariat-1, the Project had equity available through its sponsors.[235]

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[230] C-2377 - Swancor-renewable.com article entitled "Milestones - Swancor Renewable Energy" (July 2021).
[231] C-2069 - Macquarie Press Release entitled "Macquarie Capital and DONG Energy to invest into Swancor Renewable's 128MW Formosa 1 offshore wind farm in Taiwan" (January 25, 2017) and C-2728 - Macquarie press release entitled "Macquarie Capital makes its final investment decision on the second phase of Taiwan's Formosa I offshore wind farm" (June 8, 2018).
[232] RER-Guillet, ¶¶ 93-94.
[233] RER-Guillet, ¶¶ 93-94.
[234] RER-Guillet, ¶ 95.
[235] CER-Secretariat, footnote 179; and Third Witness Statement of David Mars, ¶ 6.

E.VI *Project Deadlines in the FIT Contract*

5.100 Dr. Guillet described the deadline included in the FIT Contract as "*project cliffs*" and argued that it would not be a risk that lenders will accept without a large time buffer.[236] He further argued that the proposed Project timeline is "*best-in-class*" and the only projects that have managed to achieve shorter timelines are those that benefit from the new "*all-inclusive*" auction regimes.[237]

5.101 **First**, while the project deadline included in the FIT Contract would have been a point of consideration by potential lenders to the Project, the engineering expert report prepared by the Wood Group concluded that as at the Valuation Date, the Project was *"technically feasible and could be developed and constructed within the timelines specified in the FiT contract … but for the imposition of the moratorium and cancellation of the FiT contract."*[238] Further, in Two Dogs-2, Mr. Irvine states:[239]

> *There is no material reason why the Wood Schedule could not be achieved and the precedent set by Nysted and Rodsand II, that were installed in the Baltic in similar metocean conditions using GBFs, would indicate that there is scope to achieve a COD ahead of schedule. This assertion is further supported by Fryslan, where more foundations and WTGs were installed in a shorter installation period that is proposed for WIS.*
>
> *In [Mr. Irvine's] opinion, there is no reason why lenders would seek a time buffer beyond that which is facilitated by the WIS FIT Contract, as discussed in Section 3.1 of [Mr. Irvine's second] report.*

5.102 As noted in subsection 5.D.II above, Dr. Guillet acknowledged in NAFTA 1 that SgurrEnergy (the predecessor to the Wood Group) is one of the "*top technical experts in the field*" of offshore wind, "*highly credible*", "*one of the two [engineering firms] that have been accepted by lenders to do the role of lender's technical advisor*", and that they were involved in approximately half of the projects worked on by Green Giraffe.[240] Further, in Dr. Guillet's publication from September 2022 he noted that the offshore wind industry has the ***"…enviable track record of projects built on time and on budget**."*[241] Therefore, we disagree with Dr. Guillet's assertion that lenders would have rejected the Project on the basis of the deadlines in the FIT Contract. Rather, an investor in the Project as at the Valuation would rely

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236 RER-Guillet, ¶¶ 96-97.
237 RER-Guillet, ¶¶ 98-105.
238 CER-Wood, pages 2 and 3.
239 CER-Two Dogs-2, sections 3.3, 4.10.
240 C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 186-187.
241 C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 79.

on Wood's and Mr. Irvine's expertise with respect to the Project's timeline (and the industry's track record for being on time and on budget).

5.103 **Second**, the FIT contract allowed for an 18-month period after the MCOD for the Project to reach COD, before it would be considered an event of default, which would allow the OPA to terminate the contract. The date that is 18 months after the Revised MCOD would be July 31, 2026, and based on the Wood Report, but for the Alleged Breaches, the Project would have reached COD by December 20, 2024. Therefore, the Project schedule includes **a 19-month time buffer** from when the engineering experts assessed it would reach COD, and the date that it would be considered a supplier event of default per the FIT Contract. Additionally, the Project timeline proposed by the Wood Group already included a "nominal float", which is "*a period for the task to overrun.*"[242] This means that if the float is not used, i.e., there are no overruns, the COD would be achieved prior to December 2024.

5.104 **Third**, as discussed in Two Dogs-2, Dr. Guillet's assertion that a five-year timeline for taking an offshore wind farm from fully permitted to commercial operation is "*best in class*" with regard to WIS "*is not credible*". In particular, Mr. Irvine notes that the "class" of projects that were used by Dr. Guillet to benchmark WIS "*are 1.5 to 24 times larger than WIS, are located largely in the North Sea in significantly deeper water than WIS … and are up to 130km from shore. Being 300 MW, 5km from shore, in a freshwater lake, and employing GBFs, WIS does not belong in this class of projects.*"[243]

5.105 **Last**, as discussed in Two Dogs-2, the construction of offshore wind farms Nysted and Rodsand II; which were of a comparable scale to the Project, were built in similar metocean conditions, and were similar to the Project as they used GBFs; were completed ahead of the schedule and in a similar period of time proposed for the Project (i.e., 19 months for Nysted and 19 months for Rodsand II).[244] Additionally, the Fryslan offshore wind farm in the Netherlands was able to install more foundations and WTGs in a shorter period than proposed for the Project.[245] These precedents further support the reasonableness of the proposed Project timeline.

[242] CER-Two Dogs-2, section 3.3.
[243] CER-Two Dogs-2, section 4.8.
[244] CER-Two Dogs-2, section 5.2.
[245] CER-Two Dogs-2, section 5.3.

E.VII *Dr. Guillet's Contradictory Public Commentary on Offshore Wind Financing*

5.106 In addition to the several contradictory comments in the publication issued by Dr. Guillet in September of 2022 as referenced throughout this report, in a publicly available article dated April 5, 2023, Dr. Guillet wrote that he is "*betting on a big future for small renewable energy players – even in offshore wind.*"[246] According to Dr. Guillet:[247]

> *The fact is that small developers have been stunningly successful in bringing large projects to fruition: remember that the first completed utility–scale offshore wind project in Germany was developed and built by a one-man startup, BARD, or that the largest project at the time, Gemini in the Netherlands, was developed and brought to financial close (with our help) by a two–man startup, Typhoon, with a few million euros between them,* ***even after the utilities sued the government to cancel their lease, claiming they could never build it****. (emphasis added)*

5.107 Thus, Dr. Guillet recognizes that it is quite possible for an offshore wind project to be developed and reach financial close by smaller developers, even with the challenges he cited in Guillet-1 as described above.

[246] C-2819 - Recharge News News Release entitled "Call us crazy, but we're betting on a big future for small renewable energy players – even in offshore wind" (April 5, 2023), page 1.

[247] C-2819 - Recharge News News Release entitled "Call us crazy, but we're betting on a big future for small renewable energy players – even in offshore wind" (April 5, 2023), page 4.

6. RESPONSES TO GUILLET COMMENTS ON SECRETARIAT-1

6.1 In this section, we provide our responses to Dr. Guillet's comments on Secretariat-1, which are contained within Section 4 of Guillet-1. Our comments are set out as follows:

i. Response to Dr. Guillet's comments on our executive summary (Section 4.2 of the Guillet Report);

ii. Response to Dr. Guillet's comments on our approach to damages (Section 4.4 of the Guillet Report);

iii. Response to Dr. Guillet's comments on our income approach (Section 4.5 of the Guillet Report);

iv. Response to Dr. Guillet's comments on our market approach (Section 4.6 of the Guillet Report); and,

v. Response to Dr. Guillet's comments on Windstream's discussions with interested parties in 2017 (Section 4.7 of the Guillet Report).

A. Response to Comments on our Executive Summary

6.2 Below we provide our responses to Dr. Guillet's comments on our executive summary, to the extent that his comments are not addressed elsewhere in this report.

A.I *Revised MCOD*

6.3 Dr. Guillet argued that the initial 6-month period between the effective date of the FIT Contract (May 4, 2010), and the commencement of the *force majeure* on the Project (November 22, 2010), should be excluded from the 5-year period used to determine the Revised MCOD that we were instructed to use in Secretariat-1.[248] He therefore concluded that the Revised MCOD should be 6 months earlier than the January 2025 date that we were instructed to use in Secretariat-1 (i.e. July 2024).[249]

6.4 As noted in Secretariat-1, the Revised MCOD of January 2025 adopted in our analysis, was based on instruction from Counsel.[250] We understand from Counsel that the January 2025 Revised MCOD already incorporated the initial 6-month period between May 4, 2010 and November 22, 2010 when the project was not under *force majeure*. Consistent with the evidence from NAFTA 1, the calculation of the Revised MCOD included 6 months of additional

[248] RER-Guillet, ¶¶ 118-119.
[249] RER-Guillet, ¶ 149.
[250] CER-Secretariat, ¶ 4.12(iii).

force majeure that would result from the REA being appealed to the Environmental Review Tribunal.[251]

6.5 In the third expert report of Sarah Powell prepared for NAFTA 2, Ms. Powell stated: [252]

> *Further, as described in the 2014 Report, the IESO took a pragmatic and commercial approach to address contractual risk regarding REA appeals in order to facilitate the development of FIT projects in Ontario. In addition to the FIT contract force majeure provisions, the IESO would adjust a developer's MCOD (by way of an amending agreement) for a period equal to the REA appeal period, which was defined as the period commencing at the date of the notice of appeal and terminating at the date of the notice of decision on the ERO.*

6.6 The construction schedule set out in the Wood Report included a 6-month period between when the REA environmental review tribunal process would commence (August 19, 2022), and the conclusion of the REA appeal and environmental review process (February 20, 2023).[253] Therefore, we understand from Counsel that, based on the evidence of Ms. Powell, this period would be added to the total amount of force majeure used to calculate the Revised MCOD. Therefore, Dr. Guillet is incorrect in suggesting that the Revised MCOD should be 6 months earlier than the January 2025 date used in Secretariat-1.

6.7 We summarize the calculation of the Revised MCOD adopted into our analysis (based on instruction from Counsel) below:

[251] NAFTA 1, Windstream Reply Memorial ¶¶ 678 and 679, and FN 1077. There, the Claimant noted that "The Project Schedule contemplates that the FIT Contract would have been under *force majeure* for six months if the Project's REA were appealed to the Environmental Review Tribunal. The OPA has recognized that this constitutes a valid *force majeure* event: **C-1119**, IESO, Approach for FIT Contracts That Have REAs Appealed to Environmental Review Tribunal (February 14, 2014); **C-1120**, OPA, FIT Amending Agreement: MCOD Extension for Appeal of REA."

[252] CER-Powell-3, ¶ 157. There, Ms. Powell stated in the footnote that: *"I note that in addition to revoking the REA or dismissing the appeal, the OLT also has the ability to alter the conditions of an appealed REA, so as to allow the project in question to proceed under revised terms.* ***NAFTA 1, Exhibit C-1119****, IESO, Approach to FIT Contracts That Have REAs Appealed to Environmental Review Tribunal (February 14, 2014).*"

[253] CER-Wood, Appendix B, page 2.

Figure 6-1: Calculation of Revised MCOD

Event	Date
Project resumes development	February 18, 2020
Original MCOD	May 4, 2015
Revised MCOD (extended for *force majeure)*	
First adjustment: 3,375 days of *force majeure* from November 22, 2010 to February 18, 2020	3,375
Second adjustment: 185 days of *force majeure* from REA appeal to Environmental Review Tribunal, from August 19, 2022 to February 20, 2023	185
Revised MCOD	**January 31, 2025**

6.8 We have included sensitivity calculations on our damages conclusions to reflect the impact to our damages conclusions if the adjustment to the Revised MCOD on account of the REA appeal is not accepted by the Tribunal. In this scenario, the Revised MCOD would be July 30, 2024 (i.e., 3,375 days from May 4, 2015). Accordingly, the COD based on the Project Schedule set out in the Wood Report of December 20, 2024 would be 143 days after the Revised MCOD.

6.9 According to the Article 8.1(d) of the FIT Contract: [254]

> *Where the Commercial Operation Date occurs after the Milestone Date for Commercial Operation, the Supplier shall have the option to, no later than 60 days after the Commercial Operation Date, provide notice to the OPA along with a payment in the amount of 0.15 Dollars per kW multiplied by the Contract Capacity and multiplied by the number of calendar days that the Commercial Operation Date followed the Milestone Date for Commercial Operation. Where the Supplier exercises such option, the Term shall be extended such that the Term will expire at the beginning of the hour ending 24:00 hours (EST) on the day before (i) the 20th (twentieth) anniversary of the Commercial Operation Date in the case of Facilities utilizing Renewable Fuels other than waterpower, or (ii) the 40th (fortieth) anniversary of the Commercial Operation Date in the case of Facilities utilizing waterpower for their Renewable Fuel.*

6.10 In this sensitivity calculation, we deducted a penalty payment of $6.435 million[255] in the first year of operations after the Project would reach COD. All else being equal, this would reduce our valuation conclusions by $3.0 million in our Transaction Structuring approach, and by $2.2 million in our Project Stage Risk Adjustment Factor approach.[256]

[254] C-0245 - Feed-in Tariff Contract, Schedule 1, Version 1.3.0 (May 4, 2010), section 8.1(d).
[255] $0.15 * 300,000 kW * 143 days = $6.435 million.
[256] See Appendix 2B for details. The reduction in value relates to the net present value of the penalty payment.

A.II *Grid Access*

6.11 Dr. Guillet argued that we inappropriately assumed that the Project's grid access was confirmed.[257] We disagree with Dr. Guillet's assertion that this is an inappropriate assumption for the reasons set out below.

6.12 **First**, the Tribunal in NAFTA 1 concluded that the Claimant did have a grid connection.[258]

6.13 **Second,** according to Mr. Baines, the Project's grid connection was confirmed on November 8, 2010, through the receipt Notification of Conditional Approval for Connection from IESO allowing it to connect to the grid at the Lennox connection point.[259] Further, according to Mr. Baines, "*[a]fter the FIT Contract had been executed…we had taken the steps required with the Independent Electricity System Operator and Hydro One to confirm that we would be able to connect the WWIS project to the electrical grid at the Lennox location*."[260]

6.14 **Third**, Dr. Guillet's threshold for considering whether the Project had a grid connection and how this would impact valuation is internally inconsistent with the threshold he applied when analyzing the US offshore wind leases. When discussing the New York lease, Dr. Guillet noted that while it did not "*formally*" have revenue clarity, it was highly likely, and therefore, the risk of this issue would be minimized.[261] However, Dr. Guillet inconsistently argued that our assumptions around grid access was inappropriate, even though grid access was already confirmed by the IESO, and the Tribunal in NAFTA 1 concluded that the Claimant did have a grid connection.[262]

A.III *The Counterfactual Scenario*

6.15 Dr. Guillet provided the following comments on the counterfactual scenario adopted in Secretariat-1:

i. He alleged that we included "*inappropriate assumptions with respect to the counterfactual scenario,*" including "*best-in-class*" support and an optimistic construction schedule.[263]

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[257] RER-Guillet, ¶¶ 120-121.
[258] C-2040 - Windstream Energy LLC v. Canada, PCA Case No. 2013-22, Award (September 27, 2016), ¶ 475
[259] C-0381 - System Impact Assessment Report (IESO), Wolfe Island Shoals Wind Generation Station, Connection Assessment & Approval Process (Final Report) (November 8, 2010)); and First Witness Statement of Ian Baines, footnote 49.
[260] First Witness Statement of Ian Baines, paragraph 93.
[261] RER-Guillet, ¶ 163.
[262] RER-Guillet, ¶ 34.
[263] RER-Guillet, ¶¶ 122-128, and 194-197.

ii. He alleged that we essentially valued the Project as a "*project that would have ultimately been spectacularly successful at developing*."[264]

iii. He argued that the risk of transitioning the Project from a development to operational stage cannot be reliably forecast without "*heroic*" assumptions, therefore, in his opinion the Project cannot be considered anywhere near FC/FID.[265]

6.16 We disagree with Dr. Guillet's comments and provide our responses below.

6.17 **First**, from a valuation and damages perspective, the development risks associated with the assumed timelines are considered in our risk-adjusted cost of equity discount rate of 10%, and the risk adjustment factor applied in our project stage risk adjustment approach, whereby we reduced the NPV of the Project by 55% to 60% to account for the Project's development stage risk at the Valuation Date (absent the Alleged Breaches). In our transaction structuring approach, these risks are incorporated in the expected IRR of 15%, which is significantly higher than the cost of equity discount rate.[266]

6.18 **Second**, the assumptions adopted into the 'but-for' scenario are based on instruction from Counsel on which we do not opine but note that the counterfactual timeline we assumed is supported by evidence from the technical experts. For example, we note that the Wood Group concluded that as at the Valuation Date the Project was "*technically feasible and could be developed and constructed within the timelines specified in the FiT contract … but for the imposition of the moratorium and cancellation of the FiT contract*".[267]

6.19 **Third,** as noted above, it does not appear that Dr. Guillet has reviewed the technical expert reports, as Guillet-1 does not contain any direct reference or response to any of the detailed analyses contained within these reports. Rather, he has only commented on the summaries of these reports referenced in Secretariat-1. The technical expert reports we relied upon included one provided by the Wood Group (formerly SgurrEnergy), who Dr. Guillet himself noted was one of the "*top technical experts in the field.*" [268]

6.20 **Last**, the offshore wind projects Dr. Guillet relied upon when opining that the Project had an "*optimistic construction schedule*" are not sufficiently comparable to the Project.[269] Mr. Irvine

[264] RER-Guillet, ¶¶ 154-156.

[265] RER-Guillet, ¶¶ 186-187.

[266] We used an expected IRR of 15% in our transaction structuring analysis, when a hypothetical buyer in the market would face a cost of equity of 10%. The difference between the expected IRR and the cost of equity reflects the risk associated with the development timelines.

[267] CER-Wood, pages 2 and 3.

[268] C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 186-187.

[269] CER-Two Dogs-2, section 4.1.

notes that when compared to the more comparable projects like Rodsand II, Westermeerwind and Fryslan, among others, the proposed Project timeline is reasonable. Additionally, Mr. Irvine notes: [270]

> *The 58-month WIS schedule produced by Wood, an experienced offshore wind consultancy, was supported by relevant experts, was based on the site-specifics of WIS being constructed in Lake Ontario, was based on precedent, and is realistic and robust.*

A.IV *<u>Transaction Structuring Analysis</u>*

6.21 In Secretariat-1, we presented the income approach valuation under two different approaches: (a) transaction structuring approach, whereby we calculated the FMV of the Project based on the present value of two payments that a notional purchaser of the Project would make to acquire the Project;[271] and (b) project stage risk adjustment factor approach, whereby we applied a risk adjustment factor to the account for the additional risks associated with the Project advancing from a development stage project to FC, based on observable market data.[272]

6.22 Dr. Guillet agreed that the transaction structuring approach "*with two payments as proposed [in Secreariat-1] is indeed something that [he has] seen in the market.*"[273] However he argued that the first payment should be based on a value per MW (as opposed to a multiple of past costs incurred as done in our report) and that the second payment should be based on the difference between: 1) the value of a project at the valuation date and 2) the value of a project at FC/FID as calculated in a DCF (as opposed to using "*pre-set returns*" applied in Secretariat-1).[274] The comments made by Dr. Guillet on this issue are contradictory and conflate two distinct financial concepts of discount rate and IRR.

6.23 **First**, in our transaction structuring analysis, we analyzed the value of the Project that would enable a hypothetical notional buyer to generate the IRRs typically observed in the marketplace for sufficiently similar assets, with similar risk profiles.[275] This method is sound from a valuation perspective and in our view, is one way in which likely buyers and sellers would assess the fair market value of the Project (absent the Alleged Breaches).

270 CER-Two Dogs-2, section 4.10.
271 CER-Secretariat, Section 6K.
272 CER-Secretariat, Section 6L.
273 RER-Guillet, ¶ 133.
274 RER-Guillet, ¶¶ 132-141.
275 [CER-Secretariat, ¶ 6.85. Also see ¶ 6.86 whereby Green Giraffe similarly referred to the anticipated IRR requirement expected by investors in development stage offshore wind projects.

6.24 **Second**, contrary to Dr. Guillet's comment that "*…the discount rate is an outcome of other value assessments, and not a driver of valuation*",[276] the discount rate is the driver of a valuation exercise, and is dictated by the market.[277] It is one of the key inputs in a valuation exercise, not an outcome of the exercise. Under the DCF method, the basic valuation formula calculates the present value of the project's expected cash flows as "*the value, as of a specified date, of future economic benefits and/or proceeds from sale, calculated* ***using an appropriate discount rate***" (emphasis added).[278] In other words, without the discount rate, there is no valuation calculation under the DCF methodology.

6.25 **Third**, the calculation of the second payment as put forward by Dr. Guillet is not appropriate. It assumes that the contingent payment would be determined after the Valuation Date (at FC) using the DCF method. This would imply that the amount can be ascertained only after FC. This is not correct and does not satisfy the definition of fair market value which requires the determination of the dollar amount (i.e., in a one-time payment) that a notional purchaser would pay for the Project on the Valuation Date. In Mr. Tetard's experience, the amount of the second payment can be ascertained at the time of transaction closing and the payment is only contingent on the agreed upon future milestone or event.

A.V *Risk Adjustment Factor*

6.26 Dr. Guillet argued that the list of projects that we used to determine the risk adjustment factor 1) was incomplete and 2) included projects that were in a different development stage compared to the Project as of the Valuation Date.[279] We disagree.

6.27 **First**, Dr. Guillet argued that all the UK Round 3 projects summarized in Table 3 of Guillet-1 had "*revenue certainty under the [renewable obligation certificates] ROC regime then in place*"[280] and that all these projects fit our criteria, while only one (Hornsea One) was included in our analysis. This is incorrect. These other projects did not fit the criteria we set out in Secretariat-1 for the calculation of the risk adjustment factor[281] either because:

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[276] RER-Guillet, ¶ 136.

[277] C-2548 - Shannon P. Pratt & Alina V. Niculita - "Valuing A Business – The Analysis and Appraisal of Closely Held Companies" 5th edition" (2008), page 70: "*The market for capital usually determines the appropriate discount rate.*"

[278] C-2548 - Shannon P. Pratt & Alina V. Niculita - "Valuing A Business – The Analysis and Appraisal of Closely Held Companies" 5th edition" (2008), pages 177 and 1074.

[279] RER-Guillet, ¶¶ 142-144, 227-230.

[280] RER-Guillet, ¶ 228.

[281] CER-Secretariat, ¶ 6.103.

i. They did not obtain revenue certainty in the period between January 1, 2010 and February 18, 2017;[282]

ii. They had obtained their permits before a PPA (unlike the Project, which obtained revenue certainty before being fully permitted);

iii. Some of the UK Round 3 projects were also canceled before they obtained revenue certainty, and therefore would also not meet our selection criteria; and,

iv. As discussed in **Section 5.B** above, ROC's do not bring revenue certainty like FIT contracts because ROC prices are not fixed but are market dependent, so they fluctuate. Therefore, these cancelled projects are not comparable to the Windstream Project. For example, the multiplier on ROC's changed on several occasions from 1.5 ROCS/MWh between 2006-2010 to being between 1.8 and 2.0 ROCS/MWh from 2010 onwards.[283] The challenges associated with bringing projects to financial close under the fluctuating prices in the ROC regime were part of the reason for the introduction of the CfD mechanism:[284] Therefore, these projects do not fit the criteria that we used to select the projects used to calculate the risk adjustment factor.

6.28 In Two-Dogs 2, Mr. Irvine provides a detailed analysis setting out why the UK Round 3 projects are not sufficiently comparable to the Project.[285] For example, with respect to the differences in their revenue contracts, Mr. Irvine notes that:[286]

> *On award of the FIT Contract, Windstream had already identified the WIS Project site and secured the price it would be paid for power exported from WIS. On award of the zone agreement, UK Round 3 developers still had to identify projects and secure a CFD through negotiation with the UK Government or via a competitive auction …*
>
> *… RER-Jérôme Guillet fails to mention that this development and construction duration [of the UK Round 3 projects] is a direct result of the UK Round 3 zone agreement bidding process, the CFD process and the scale and complexity of development Round 3 projects, none of which has any parallel to WIS.*

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[282] We selected January 1, 2010 as the starting point, as this was the beginning of the year in which the FIT Contract was signed, and we selected February 18, 2017 as the end point for as this was three years before the Valuation Date, and in our analysis, there is a three year period between the Valuation Date, and the date by which the Project would have achieved financial close, but for the Alleged Breaches.

[283] C-2745 - OFGEM Renewables Obligation (RO) – Guidance for generators that receive or would like to receive support under the Renewables Obligation (RO) scheme (April 2019), page 71.

[284] C-2585 - Gov.uk Report entitled "Electricity Market Reform – Contract for Difference: Contract and Allocation Overview" (August 2013), ¶ 1.10.

[285] CER-Two Dogs-2, section 4.1.2, 4.2 and 4.5.

[286] CER-Two Dogs-2, section 4.2.2.

6.29 Further, as discussed in further detail in **Section 5.B** above, there were several other errors, issues, and missing information in Dr. Guillet's assessment of UK Round 3 projects which render his analysis and conclusions on the UK Round 3 projects unreliable. Refer to paragraph 5.18 above for details.

6.30 **Second**, Dr. Guillet argued that the German projects under development at that time period had revenue certainty and grid access certainty. He further stated that "*about 100 projects under development lost all their rights to development*" after the reform to the EEG in 2014.[287] Dr. Guillet has not provided any sources or references to support his assertion that these German projects fit the criteria we used to select projects for the calculation of our risk adjustment factor. Neither did Dr. Guillet provide any support for his assertion that the German projects at that time had both revenue certainty and grid access certainty.

6.31 Dr. Guillet's assertion that the cancelled German projects had 'revenue certainty' and 'grid connection' is incorrect. Prior to 2014, under the then German EEG regime, feed-in-tariffs were available to projects only after they had obtained their grid connection,[288] which was made available only after they had their financing agreements in place.[289] In other words, prior to 2014, in German offshore wind industry, financing agreements preceded both revenue certainty and grid connection.

6.32 The 2014 German EEG policy changed this mechanism. A spatial planning system was established, whereby auctions were held for projects to be located in certain pre-selected zones that benefitted from grid connections,[290] i.e., the only projects that would be awarded feed-in-tariffs were to be located in pre-defined zones with 'grid access'. The 100 cancelled projects, referred to by Dr. Guillet, did not fall in any of the zones with grid access (i.e., the grid did not extend to the locations of these proposed project sites as the cost, material and personnel shortages were prohibitive factors).[291] Without access to a grid connection, these projects could not have obtained feed-in-tariffs. Accordingly, the cancelled projects neither had 'revenue certainty' nor 'grid connection'. This is not the case for the Project which had confirmation of its grid connection, and revenue certainty through the FIT Contract.[292] Thus,

[287] RER-Guillet, ¶ 228.
[288] C-2832 - KPMG Legal Guideline for Offshore Project Contracts (2013), page 8.
[289] C-2832 - KPMG Legal Guideline for Offshore Project Contracts (2013), page 6; and C-2833 - Hertie School of Governance Working Paper 4 entitled "Offshore Wind Power Expansion in Germany – Scale, Patterns and Causes of Time Delays and Cost Overruns" (May 2015), pages 11-12.
[290] C-2833 - Hertie School of Governance Working Paper 4 entitled "Offshore Wind Power Expansion in Germany – Scale, Patterns and Causes of Time Delays and Cost Overruns" (May 2015), pages 14-15.
[291] C-2833 - Hertie School of Governance Working Paper 4 entitled "Offshore Wind Power Expansion in Germany – Scale, Patterns and Causes of Time Delays and Cost Overruns" (May 2015), page 13.
[292] CER-Secretariat, ¶ 2.12 and footnote 23, with reference to First Witness Statement of Ian Baines, paragraph 93 and footnote 49. We note that in NAFTA 1, Dr. Guillet confirmed that he did not understand how grid

these 100 cancelled German projects are properly excluded from our calculation of the project stage risk-adjustment factor.

6.33 **Third**, Dr. Guillet stated that "*the 3 most advanced North American projects of that generation (Block Island, Cape Wind and Bluewater) all failed to be built within the 5-year deadline of the FIT Contract MOCD*," which would result in a 0% probability of success.[293]

6.34 We provide our responses below:

i. Using just these three data points is not a complete analysis and thus Dr. Guillet's suggestion that the Project had a 0% probability of success absent the Alleged Breaches, is improper;

ii. Block Island was considered in our calculation of the risk adjustment factor. Block Island obtained its PPA in August 2010 and reached FC in March of 2015 and was reflected as a successful project in our analysis.[294] Dr. Guillet incorrectly suggested that Block Island should have been excluded from our risk adjustment calculation because it was not built within a 5 year period of its PPA. Since our unadjusted DCF calculation under this method provided the equity value of the Project assuming no risk of reaching FC,[295] our risk adjustment analysis measured the probability that the Project would reach FC as of the Valuation Date. Since Block Island reached FC by the Valuation Date it is properly included in our analysis as a successful project.

iii. As noted, the project risk adjustment factor estimates the probability of Windstream reaching FC, not the probability of reaching COD by the MCOD. Each project included in our analysis of the risk adjustment factor, as well as the three North American projects referred to by Dr. Guillet, had their own unique construction timelines and contractual commitments based on the size and location of the project, and therefore it is inappropriate to compare the specific deadline to COD of the Windstream Projects to the construction timeline of these other projects, as these are separate analyses. With respect to the construction schedule of the Project, Mr. Irvine concluded in Section 5 of his report that: [296]

connection works under the FIT Contract in Ontario. Source: C-2464 - Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential), page 200.

[293] RER-Guillet, ¶ 230.

[294] CER-Secretariat, Figure 6-11.

[295] CER-Secretariat ¶ 6.96.

[296] CER-Two Dogs-2, section 5.5.

> *Comparable projects to WIS, namely Rodsand I and II, were completed on budget and ahead of schedule over a decade ago, using similar GBF technology to that* proposed for WIS.
>
> *Large* offshore wind farms located in the freshwater Lake Ijssel, the Netherlands, namely Fryslan and Westermeerwind were completed in comparable timescales to that proposed for WIS in 2016 and 2021 respectively.

iv. Cape Wind was also considered in our calculation of the risk adjustment factor. Cape Wind was one of the projects that was cancelled before the Valuation Date, and accordingly it was reflected in (and reduced) our risk adjustment factor. In Secretariat-1, we noted with respect to Cape Wind, that the reason this project was cancelled was largely due to its location, whereby it "*would have been visible to wealthy waterfront property owners like the Kennedys, Mr. Koch …*". While critics of the Cape Wind project also cited the high cost of offshore wind, alleged navigational hazards and threats to the environment, it was ultimately the location that upset the critics of the Cape Wind Project.[297]

v. Bluewater Wind had signed its PPA with Delmarva Power in 2008, which did not meet our criteria for the assessment of the Risk Adjustment Factor, as the PPA was received before January 2010.[298] Additionally, the Bluewater project was ultimately canceled as they could not secure financing due to the US recession which is not a relevant factor for the Project at the Valuation Date.[299]

vi. According to the FIT Contract, the Project had an additional 18 months after MCOD to be built. Therefore, the Project's "deadline" to reach COD was in fact 6.5 years after the Valuation Date, not 5 years.

6.35 **Last**, as noted above, the Wood Group concluded that the Project was *"technically feasible and could be developed and constructed within the timelines specified in the FiT contract … but for the imposition of the moratorium and cancellation of the FiT contract."*[300] Wood concluded that the Project would reach COD by December 2024, which leaves 19 months before the supplier default date based on the Revised MCOD as at the Valuation Date.

6.36 This point was further confirmed in Two-Dogs 2, whereby Mr. Irvine stated: [301]

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[297] CER-Secretariat, footnote 197, referring to C-2127 - New York Times article entitled "After 16 Years, Hopes for Cape Cod Wind Farm Float Away" (December 19, 2017)

[298] C-2575 - Md Coast Dispatch Press Release entitled "Del. Wind Contract Cancelled" (December 29, 2011).

[299] C-2714 - Delaware Public news release entitled "Delaware's star-crossed history with offshore wind power" (July 7, 2017).

[300] CER-Wood, pages 2 and 3.

[301] CER-Two Dogs-2, section 3.3.

There is no material reason why the Wood Schedule could not be achieved and the precedent set by Nysted and Rodsand II, that were installed in the Baltic in similar metocean conditions using GBFs, would indicate that there is scope to achieve a COD ahead of schedule. This assertion is further supported by Fryslan, where more foundations and WTGs were installed in a shorter installation period that is proposed for WIS.

In my opinion, there is no reason why lenders would seek a time buffer beyond that which is facilitated by the WIS FIT Contract.

B. Response to Comments on our Approach to Damages

6.37 Below we provide our responses to Dr. Guillet's comments on our approach to damages, to the extent that these issues are not addressed elsewhere in our report.

B.I *Regulatory Risk*

6.38 Dr. Guillet argued that while we could assume that there was no Moratorium in the 'but-for' scenario, we cannot assume that there would be no regulatory risk. He alleged that the absence of the Moratorium does not mean that the Project would automatically obtain all required permits in the shortest amount of time.[302]

6.39 **First,** we did not assume that there would be no regulatory risk for the Project. Dr. Guillet failed to analyze that the Project schedule put forth in the Wood Report included a period of over three years for the Project to obtain all its permits, including a 6-month period for a REA appeal as described above.[303] Additionally, the Project timeline proposed by the Wood Group already included a "nominal float", which is "*a period for the task to overrun.*"[304] Dr. Guillet did not provide any specific evidence in support of factors that could potentially result in delays beyond the float already included the schedule set out in the Wood Report.[305]

6.40 **Second,** the 'but-for' scenario that we have been instructed to assume includes an assumption that the Ontario Government would have dealt with Windstream in good faith and not have subjected the Project to unreasonable regulatory delays. Therefore, from a damages perspective, any downward adjustment to the value of the Project for the risk that the permits and approvals would not be processed in reasonable manner, would be inappropriate as it would amount to giving the Respondent a benefit for its wrongdoing.

302 RER-Guillet, ¶¶ 157-160.
303 CER-Secretariat, Figure 5-2.
304 CER-Two Dogs-2, section 3.3.
305 CER-Two Dogs-2, section 3.3.

6.41 **Third**, the risk that these assumed scenarios and timelines are not met or obtained are considered in our discount rate (which includes general industry risk through the beta factor), the higher expected IRR applied in our transaction structuring approach, and the risk adjustment factor applied in our project stage risk adjustment approach, whereby we reduced the NPV of the Project by 55% to 60% to account for the Project's development stage risk.

B.II *Applicability of DCF in Practice:*

6.42 Dr. Guillet argued that the DCF methodology is usually used on projects that have reached FC/FID or later, i.e., it should not be used for the Project which has not yet reached FC/FID.[306] He further stated that "*pretty much all*" of the European projects under development had known revenue streams and they were valued using multiples, not DCF, and that in actual market practice, projects under development are "*routinely assessed on the basis of standardized multiples.*"[307] We disagree.

6.43 **First**, in Mr. Tetard's experience as an equity investor in the offshore wind industry as at the Valuation Date, once a project has obtained revenue certainty, industry participants would value the Project using a DCF. For example, Mr. Tetard was involved in the acquisition of Deepwater Wind by Ørsted in 2018, [308] and he notes that Ørsted used a DCF model to value all projects with a PPA, while projects within the Deepwater Wind portfolio that had no PPA were valued using a market multiple. As noted in Secretariat 1, the reason why the industry favours the use of a DCF once there is revenue certainty is because each project is unique, and the DCF is the only approach that is able to capture the specificities of each project, such as the price at which every unit of power produced would be sold into the market, and the amount of power units that would be generated for a given period based wind speeds, CAPEX, OPEX, etc.[309]

6.44 Therefore, a DCF is required in order to be consistent with the definition of FMV, as this is what market participants would have used to value the Project as at the Valuation Date. However, we also performed a robust market approach to value the Project, whereby the results were consistent with our DCF valuation.[310]

6.45 **Second,** Dr. Guillet did not provide support for his assertion that the European offshore projects were valued using multiples. Additionally, a revenue regime is not the same as

[306] RER-Guillet, ¶¶ 170-173.
[307] RER-Guillet, ¶¶ 179-181, 188-189.
[308] C-2182 - Ørsted News Release entitled "Ørsted acquires Deepwater Wind and creates leading US offshore wind platform" (October 8, 2018).
[309] See CER-Secretariat, ¶ 5.26 for further details on the specificities of each project captured through a DCF analysis.
[310] CER-Secretariat, Figure 2-6 and Figure 2-7.

"*known revenue streams*" or revenue certainty, i.e., it is not the same as having a PPA. Therefore, the European projects cited by Dr. Guillet, for which he claimed were valued using multiples, may not have had revenue certainty like the Project. For example, Dr. Guillet argued that the ROC regime constituted "*known revenue streams*"; however, as discussed in **Section 5.B** above, the ROCs only provide a "*top up to wholesale power merchant prices*"[311] and any offshore wind projects under this regime would still be required to obtain a revenue contract which would provide revenue certainty.

6.46 **Third,** despite his disagreement around the use of a DCF to value a development stage offshore wind project, Dr. Guillet stated that even in cases where projects are transacted without firm revenue regimes, a DCF would still be used "as a secondary tool", or as an "ancillary valuation tool."[312] In his report in NAFTA 1, Dr. Guillet noted that if he had been hired by the Windstream or a potential purchaser in 2011/2012 the first step in his process would have been *"a DCF calculation to assess the potential value of the Project at FC…"*[313] However, in this case, Dr. Guillet failed to prepare a DCF analysis for the Project even as a "secondary tool", in order to assess the reasonability of the conclusions he reached under his comparable transactions approach.

6.47 As noted in Secretariat-1, according to the IVSC, an income approach "*should be applied and afforded significant weight*" for assets where i) "*the income-producing ability of the asset is the critical element affective value from a participant perspective*" and/or ii) "*reasonable projections of the amount and timing of future income are available for the subject asset, but there are few, if any, relevant market comparables*.[314] While the use of multiple valuation methods is not required according to the IVSC, multiple approaches and methods should be considered, "*… particularly when there are insufficient factual or observable inputs for a single method to produce a reliable conclusion*."[315]

6.48 **Fourth**, Dr. Guillet stated in Guillet-1 that in his view, "*…the IRR expectations for the development phase would still be 20-25% (probably closer to the top of the range in 2015 and nearer (sic) 20% in 2020."*[316] This statement demonstrates that Dr. Guillet acknowledges that the DCF is being used in the market to value development stage projects; albeit with a

311 RER-Guillet, ¶ 180.
312 RER-Guillet, ¶ 181-183.
313 RER-Guillet, ¶ 107.
314 C-2278 - International Value Standards (IVS) 2020, section 105, ¶ 40.2.
315 C-2278 - International Value Standards (IVS) 2020, section 105, ¶ 10.4.
316 RER-Guillet, ¶ 224.

higher IRR expectation compared to projects that have already reached financial close, as similarly noted in Secretariat-1.[317]

6.49 **Last**, a publication disseminated by KPMG in Q1 2022 further supports the use of the DCF method for greenfield renewable energy projects as follows: [318]

> *Valuation of renewable energy assets are required at different points in time throughout the investment lifecycle. Oftentimes, a valuation is required prior to investment, **be it a greenfield investment**, an M&A transaction, or a repowering investment. In these circumstances, **the valuation model will yield a net present value, which can be used as a starting point in the negotiation process**, or an internal rate of return can be derived assuming a certain initial investment…*
>
> *…the usefulness of the Market Approach may be limited by the dissimilarity in the risk profiles unique to each asset or renewable energy project, which may be difficult to reflect under this approach. For this reason, the Market Approach is generally not relied upon by valuation analysts when valuing renewable energy assets. The Cost Approach tends to be omitted in the valuation of income-producing assets such as renewable energy assets …*
>
> *…As the benefits to the owner(s) can generally be reliably estimated, **the most often used method to estimate the value of a renewable energy project is the discounted cash flow ("DCF") method, a widely used method under the Income Approach**. Through the DCF method, complexities such as reflecting Power Purchase Agreements ("PPA"), Feed-in-Tariffs ("FiT") and merchant price exposure, can be reflected in detail throughout the life of the project. This allows for sharpened consideration of both the risks and rewards relevant for investors and owners of the asset…* (emphasis added).

[317] CER-Secretariat, ¶ 6.85: "The expected IRR [for the Project] is higher than the CoE for project at FC… due to the Project's stage of development." While in our Transaction Structuring approach, we applied an IRR expectation of 14 to 16%, in Dr. Guillet's view, the appropriate IRR expectation would be around 20% as at the Valuation Date.

[318] C-2786 - KPMG quarterly brief, 17th edition, Q1 2022 entitled "Renewable energy valuation in the global energy transition" (January 2022), page 8.

B.III *Precision of a DCF analysis*

6.50 Dr. Guillet stated that we "*erroneously claim[ed] that the DCF methodology is more precise than the comparables approach.*"[319] This is a mischaracterization of our report. In Secretariat-1, we stated that one of the benefits of using a DCF approach over a comparables approach was that a DCF "*is the only approach that can capture the specificities of each project.*"[320] Dr. Guillet similarly acknowledged this point when he stated that "*it is fair to say that comparables provide only an approximation.*"[321]

6.51 Dr. Guillet argued that, when done before FC/FID, DCF calculations are driven by factors beyond the control of the developer or factors that cannot be negotiated in detail beyond rough estimates. Therefore, in his view, the comparables approach would be a more precise starting point for the Project as opposed to a DCF.[322] This is incorrect.

6.52 As noted in Secretariat-1:[323]

> *Since the Claimant had obtained the FIT Contract which provided for a fixed revenue stream over a 20 year period, had performed onsite wind measurements, had grid access, and had an exclusive and priority position secured on the site the Project would be built on, and the Project's capital and operating expenses can be estimated with a reasonable degree of certainty based on similar projects around the world.*

6.53 The comparables approach is less precise as it is premised on the assumption that there are other offshore wind projects that are sufficiently comparable to the Project. In reality, as noted in Secretariat-1, each offshore wind project is unique, and no comparable transaction would line up perfectly with the specifications of each project, such as:[324]

i. *The price at which every unit of power produced is sold in the market;*

ii. *The amount of power units generated for a given period, i.e., the number of MWh produced in a year, which is calculated as the combination of the wind speed at the project specific location, and the power curve of the wind turbine generator that is specifically assumed for the project;*

iii. *The project schedule;*

iv. *The distance to the grid connection point;*

[319] RER-Guillet, ¶ 174.
[320] CER-Secretariat, ¶ 5.26.
[321] RER-Guillet, ¶ 176.
[322] RER-Guillet, ¶¶ 174-178.
[323] CER-Secretariat, ¶ 5.31.
[324] CER-Secretariat, ¶ 5.26.

v. The project design suitable for its specific geographic location;

vi. The project's logistics;

vii. The specific technologies used; and,

viii. The construction and operation strategies.

6.54 In addition, each project would have a different:

i. Location/jurisdiction;

ii. Regulatory rules;

iii. Tax rules; and,

iv. Political risk.

6.55 Therefore, a comparables approach must be used in conjunction with a DCF approach, which is able to more precisely capture the impact of all of the above factors on the value of a project.

B.IV *Cost approach*

6.56 Dr. Guillet argued that our use of the amounts invested by the Claimant to determine the amount of the first payment in the transaction structuring approach contradicted our assertion that cost approaches should not be used.[325] He also alleged that majority of the development costs listed in Secretariat-1 would not qualify as valid DEVEX.[326] We disagree.

6.57 We did not use the cost approach to value the Project. As explained previously, we only used the actual expenditures as a way to determine the "*structuring and timing of the consideration that would be paid in transaction for the Project as at the Valuation Date*."[327] The total valuation of the Project that we concluded on was determined using a DCF and not using the cost approach. Additionally, all the costs listed in Secretariat-1 should be considered as reasonable development costs, as it would reflect the costs that a developer would have been required to incur bring the Project to its current state (at the Valuation Date).

C. Response to Comments on our Income Approach

6.58 Below we provide our responses to Dr. Guillet's comments on the income approach in Secretariat-1, to the extent that these issues are not addressed elsewhere in our report.

[325] RER-Guillet, ¶¶ 190-191.
[326] RER-Guillet, ¶¶ 213-217.
[327] CER-Secretariat, ¶ 5.37.

C.I *<u>"Out of the Market" PPA Price</u>*

6.59 In Secretariat-1, we stated: [328]

> *Under the FIT Contract, the Project was entitled to receive the FIT Contract Price of $0.19 per kWh (as at a base date of September 30, 2009), which is equivalent to $190.00 per MW with inflation indexing to the MCOD, and partial inflation indexation (on 20% of the indexed price) after MCOD. We have been instructed by Counsel to assume that the Revised MCOD of January 2025 is relevant for indexation of the FIT Contract Price, rather than the Original MCOD of May 4, 2015 set out in the FIT Contract. The use of the Revised MCOD for the indexation is necessary to ensure that IESO's promise to "freeze" the FIT Contract for the duration of the Moratorium and "insulate" Windstream from its effects is realized. Otherwise, the value of the FIT Contract Price would be progressively eroded over time due a lack of indexation to inflation up until the Revised MCOD.*

6.60 Dr. Guillet argued that the assumption that the FIT Contract price would be indexed to inflation for the full period would result in an "*out of the market*" price. This is because, as discussed in Appendix 1 of Secretariat-1, tariffs for offshore windfarms have generally decreased between the initial issuance of the FIT Contract in 2010 and the Valuation Date.[329] According to Dr. Guillet, lenders would consider this to be an additional risk since governments might "*step in to reduce tariffs that they felt were out of the market.*"[330]

6.61 In other words, Dr. Guillet argued that the Respondent should benefit in this arbitration from its Alleged Breaches, and its ability and incentive to breach the FIT Contract due its "out of the market" price. This is inappropriate consideration for a damages assessment. A proper 'but-for' scenario requires an assessment of the value of the Project absent the Alleged Breaches and absent future similar or related breaches.

6.62 In contrast, for comparable projects such as NNG and St. Brieuc, he considered their "*out of the market*" price to be a value-enhancing feature resulting in a higher valuation.[331]

6.63 Further, in one of his public documents, Dr. Guillet explains that whereas wind power has certain valuable features (including guaranteed low costs and by providing clean energy without externalities), that the market does not recognize or price-in, "*…governments can step in, to provide a value today to the long term option embedded in wind (i.e. a "call" at a low*

[328] CER-Secretariat, ¶ 6.13.

[329] Also see Slide 14 of C-2216 - Green Giraffe Presentation entitled "Recent trends in offshore wind finance" (April 4, 2019) where Dr. Guillet noted that downward trend of offshore wind tariff prices since 2010. On Slides 15 and 16, he attributed this to factors such as record low cost of money, the improvement in the perception of offshore wind risk improving, the willingness of debt markets to take construction risk on attractive terms, and the lower capital expenditures thanks to a competitive supply chain.

[330] RER-Guillet, ¶¶ 198-199.

[331] RER-Guillet, ¶ 74.

price). This is what feed-in-tariffs do, fundamentally, by setting a fixed price for wind production which is high enough for producers to be happy with their investment today, and low enough to provide a hedge against cost increases elsewhere in the system."[332] Based on Dr. Guillet's view in this regard, FIT prices that would be considered "above market" essentially are a way to reflect these additional elements of value that wind provides and thus are value-enhancing features (not risk increasing).

C.II *<u>CAPEX and OPEX Assumptions</u>*

6.64 Dr. Guillet argued that the CAPEX and OPEX assumptions adopted into our DCF model were too aggressive and were in line with "*best-in-class European practice.*"[333] He compared the Project to the Vineyard Wind project which "reached a level of 3.4 MUSD/MW" compared to the Project's CAPEX of 2.5 MEUR/MW. Additionally, Dr. Guillet argued that "*a project with a high tariff would get more expensive offers from contractors as they know that the construction costs would be a small proportion of revenues and they would try to get some of the premium for themselves.*"[334]

6.65 **First**, Wood and 4C conducted a thorough, bottom-up and detailed analysis of the specific costs associated with the Project, whereas Dr. Guillet referred to one other project as a comparator (Vineyard Wind, located in the Atlantic Ocean[335]), and calculated a CAPEX figure based on "*information available to [him],*" which is non-public information that cannot be checked for reliability or accuracy.[336]

6.66 **Second,** Mr. Irvine has responded in detail to Dr. Guillet's critique of the Capex assumptions for the Project. According to Mr. Irvine:[337]

> *I disagree that the WIS Capex figures are "optimistic". The Capex figures in the table at paragraph 200 of RER-Jérôme Guillet were based on analysis of data collected by 4C Offshore (CER-4C Offshore 3), information provided by Wood and, perhaps most significantly, a detailed cost build-up of the GBFs proposed for WIS by COWI (CER-COWI (Opinion of Probable Cost)), that had over a decade of first-hand experience of designing GBFs for offshore wind farms, namely Nysted, Thornton Bank, Rodsand II and Karehamn (see Section 5.1 of this report).*

[332] C-2840 - Jerome A Paris Article entitled "The cost of wind, the price of wind, the value of wind (August 8, 2023).
[333] RER-Guillet, ¶¶ 200-205.
[334] RER-Guillet, ¶ 203.
[335] CER-Two Dogs-2, section 9.2.
[336] RER-Guillet, footnote 129.
[337] CER-Two Dogs-2, section 9.1.

Appropriate adjustments were made to Capex figures provided by the Project participants to make these more appropriate for WIS and these are explained in CER-Two Dogs (Capex Opex Sensitivity Report).

The significance of COWI's contribution to the Capex estimate is that COWI has designed GBFs for four operational offshore wind farms, including Rodsand I and II. As noted in Section 5.2 of this report, Rodsand I and II were both built on budget and ahead of schedule. Given this, it is reasonable to expect that COWI's cost estimate for construction and installation of GBFs for WIS to be realistic.

... Presumably, the "realistic figure for Europe" is referring to offshore wind farms that have employed monopile or jacket foundations, located in deeper water than WIS and are farther from shore than WIS, as, further to construction of Middelgrunden, Rødsand 1, Lillgrund and Rødsand 2 wind farms in the Baltic Sea, the Belgian Thornton Bank I wind farm is the only project to have used GBFs in the North Sea.

Therefore, in arriving at the conclusion that the WIS Capex figure is aggressive and optimistic, no consideration has been given to the benefits of using GBFs. Nor has any consideration been given to the advantages of the location of WIS in Lake Ontario, that can be found at Section 10.4 of CER-Wood and Section 3.1 of CER-Baird-3.

6.67 **Third**, with respect to Dr. Guillet's comparison to the Vineyard Wind Project, Mr. Irvine states:[338]

It is not reasonable to compare the Vineyard Wind Capex with WIS Capex, for the following reasons:

- *Vineyard Wind is in the Atlantic Ocean, WIS is in Lake Ontario.*
- *Vineyard Wind proposes monopile foundations, not GBFs as proposed for WIS.*
- *Vinyard Wind proposes a platform for the offshore substation, not an island as proposed for WIS.*
- *Water depths in the lease area can range from 35m to 60m, and the depth gradually increases along with the distance from the land. In the northern half of the location, the water depths range between 37m and 49.5m .*
- *Vineyard Wind proposes hub heights up to 144m, WIS proposes a 100m hub height.*
- *Vineyard Wind proposes 12MW+ IEC Class I WTGs, WIS proposes 4.5MW IEC Class II WTGs....*

... That Vineyard Wind has a higher Capex than that estimated for WIS is not unexpected. That it uses IEC Class I WTGs indicates that it is located in an IEC Class I wind regime (see Section 4.1.1 of this report) and, given the higher hub height and larger WTG size, Vineyard Wind could generate perhaps 40% or more MWh/MW

[338] CER-Two Dogs-2, section 9.2.

> *installed. While it may incur more capital costs, the additional energy output can offset this additional cost.*

6.68 **Fourth**, we disagree with Dr. Guillet's assertion that our O&M assumptions were too low. Similar to the CAPEX assumptions, O&M costs were also based on the inputs from the Wood Report, which were based on Project-specific analyses.[339] In contrast, Dr. Guillet dismissed our assumptions since he found them "optimistic" without citing any support for his assertion.[340]

6.69 Additionally, in Secretariat-1, we noted: "*Mr. Irvine's calculation of the O&M expenses include[d] a $3 million per annum premium to the range of O&M costs observed for other offshore wind projects, given that 'WIS is remote from the locus of offshore wind development activities in the USA'.*"[341] Therefore, the O&M cost assumptions used in our model already reflected the incremental risk associated with the Windstream Project compared to US projects.

6.70 According to Mr. Irvine:[342]

> *Note that there are WTG O&M facilities in the immediate vicinity of WIS, located on Wolfe Island, 86 x 2.3MW Siemens WTGs, and Amherst Island, 26 x 3.2MW Siemens WTGs. Therefore, there is a well-developed Siemens O&M capability and supply chain adjacent to WIS that could support development of the O&M service capability for the 66 x 4.5MW Siemens WTGs proposed for WIS.*
>
> *The main addition to the existing O&M capability adjacent to WIS would be provision of vessels to transport personnel and materials to the WIS WTGs. Lake Ontario has far more benign metocean conditions compared to the North Sea. Consequently, the specification, and cost, of service vessels required to support WIS O&M will be lower compared to those required to service WTGs located in the North Sea.*
>
> *As noted above… a further $3m per annum was added to the Opex cost derived from each of the reference sources. The $3m/annum premium is, in effect, a maintenance reserve account to build up a fund to pay for a jack-up barge in the event of a major repair being required. In such a case, a vessel may need to be brought in from another location, as no suitable vessels are permanently located on Lake Ontario …*
>
> *The Opex figures provided for WIS are based on site-specific conditions and considered a realistic starting point for WIS Opex, that would be refined as WIS was developed.*

[339] CER-Secretariat, ¶¶ 6.39-6.41.
[340] RER-Guillet, ¶ 205.
[341] CER-Secretariat, ¶ 6.40.
[342] CER-Two Dogs-2, section 10.1.

6.71 **Fifth**, Dr. Guillet did not provide any support for his assertion that vendors would quote higher CAPEX and O&M prices for the Project given the high PPA price. As well, his assertion appears to be somewhat illogical as, if vendors were to do this, they would run the risk of being undercut by their competitors. Mr. Irvine further notes that Dr. Guillet's assertion is "*quite speculative and largely dependent on prevailing market conditions when WIS contracts would have been put out to tender.*" He also provided an example from the Waaban Crossing in Kingston Ontario and noted that "*it does not appear that Ontario based contractors share the approach to project premiums outlined in RER-Jérôme Guillet .*"[343]

6.72 **Last,** Dr. Guillet also argued that the insurance costs adopted into our model were too low. He compared these costs to the insurance premiums used in the Deloitte Report in NAFTA 1 claim, as well as his unsupported "*rule of thumb*" for what he believed insurance costs should be (50% of the O&M Costs).[344]

i. The insurance cost assumptions from the Deloitte Report in NAFTA 1 are irrelevant, primarily because those costs were as at a much earlier valuation date. We have prepared our own independent valuation as at the Valuation Date for NAFTA 2. The insurance costs in our model were based on actual price quotes from insurance brokers and considered the specific nature of the Project.[345] In contrast, Dr. Guillet did not provide any support for his higher "*rule of thumb*" insurance budget.

ii. Dr. Guillet's "rule of thumb" insurance costs of 50% of the O&M costs are inconsistent with what he has published on the subject. In a publication issued by Dr. Guillet in September 2022, he stated that the insurance budget would typically fall into a range of 20% to 30% of the operating costs, depending on the nature of the coverage, the maximum amounts insurance and the deductible.[346] In our DCF model, over the first 10 years of operations, the insurance costs represent 23% of O&M costs on average, which falls within Dr. Guillet's stated range in this public document.[347]

C.III *Decommissioning Costs*

6.73 With respect to the decommissioning costs incorporated into our DCF analysis, Dr. Guillet acknowledged that "*[t]he assumption for decommissioning costs does not seem unreasonable.*" Dr. Guillet's only critique of our decommissioning cost assumptions related to

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343 CER-Two Dogs-2, section 9.4.
344 RER-Guillet, ¶¶ 206-207.
345 CER-Secretariat, ¶ 6.42.
346 C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 66.
347 CER-Secretariat, Appendix 11, tab 'DCF', insurance costs divided by O&M costs.

the timing of when these costs would be funded. In Dr. Guillet's view, the assumption that these costs would be funded in the later years of the Project, was "optimistic".[348]

6.74 In Secretariat-1, we noted that a project would start to make deposits towards its future decommissioning obligations at a point in its operating cycle when the cash flows are stable. Therefore, we assumed that Windstream would have provided a letter of credit to cover the estimated decommissioning costs once it reached COD, and that it would have placed the cash amounts to fund the decommissioning liability in escrow in the last three years of the FIT contract, at which point the entire amount of debt financing would have been repaid.[349] This translated into a cash outflow (in form of a decommissioning fund) between 10 and 13 years before the end of the Project life, at which point this fund would actually be used. As a result, our assumptions on the timing of these cashflows were not "optimistic" as suggested by Dr. Guillet, as we did not assume that these costs would only be funded at the end of the Project's life.

6.75 Additionally, contrary to Dr. Guillet's assertion, we understand that there are no regulatory requirements in Canada for the timing of when decommissioning costs for wind projects are required to be funded.

C.IV *<u>Equity Requirement</u>*

6.76 In Secretariat-1, we noted that in Mr. Tetard's experience, and based on his discussions with lenders active in project financing of offshore wind projects, lenders would require at least 20% of the Project's construction and development costs to be funded by equity (that is, the remaining 80% would be funded by debt). Dr. Guillet argued that this assumption was "aggressive", and that in his view, lenders would actually require 25% to 30% of the Project's construction and development costs to be funded by equity.[350]

6.77 First, as a reasonability check, in Secretariat-1, we reviewed the contemporaneous financing terms for the Project set out by Keybanc in 2017. In this document, Keybanc stated that lenders would only require 15% of the Project's construction and development costs to be funded by equity.[351] Therefore, our equity requirement assumption was more conservative

348 RER-Guillet, ¶¶ 208-209.
349 CER-Secretariat, ¶ 6.49.
350 RER-Guillet, ¶¶ 210-212.
351 C-2141(c) - WWIS ERPP EOI Form s2.8 – Financing Strategy, slide 3. This presentation was included in an email sent by Windstream to the ERPP Program Manager with the Project's EOI Application on February 11, 2018 (see C-2141 - Email from Nancy Baines (WWIS) to Emerging Renewable Power Program (ERPP) re Windstream Wolfe Island Shoals - ERPP EOI Application -#2 of 3 (February 11, 2018)).

than the contemporaneous terms set out by Keybanc.[352] In contrast, Dr. Guillet did not provide any support for his assertions on the equity requirement for the Project, nor did he comment on the assumptions in the contemporaneous Keybanc presentation.

6.78 Second, in a publication issued by Dr. Guillet in September 2022, he included a table that summarized the equity requirements for greenfield offshore wind farms for each year from 2006 to 2021.[353] As shown in this table below, Dr. Guillet concluded that in 2020 and 2021, the financing split was 80% debt, 20% equity, which is consistent with the ratios adopted in our DCF analysis:

Figure 6-2: Greenfield offshore wind leverage requirement per Dr. Guillet presentation

The table below shows how these different terms have evolved over time in the sector (based on actual transaction closed):

Typical lending terms*	Leverage	Maturity	Pricing	Contingency budget
2006–2007	60:40	10–15 years	150–200 bps	12–15 %
2009–2013	65:35	10–15 years	300–350 bps	10–12 %
2014–2015	70:30	10–15 years	200–250 bps	15–20 %
2016–2017	75:25	15–17 years	150–225 bps	12–15 %
2018–2019	75:25	15–18 years	125–175 bps	8–12 %
2020–2021	80:20	15–20 years	125–175 bps	8–10 %

*Greenfield offshore wind

Source: Offshore wind debt 15 years on, Jérôme Guillet, PFI Yearbook 2022

6.79 Further, we note that our DCF model assumed:

i. A debt maturity of 17 years,[354] which is within the range of maturities in 2020/2021 per Dr. Guillet's publication;

[352] We also note that the Borssele III & IV project that reached financial close in July of 2018, had 88% debt / 12% equity. Source: C-2159 - IJ Global article entitled "Borssele III/IV offshore wind Netherlands" (July 5, 2018).

[353] C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 68.

[354] CER-Secretariat, ¶ 6.69.

ii. A debt pricing of CDOR plus 1.75%, with an increase of 0.20% every five years,[355] which is at the top end of the range of 125 – 175 bps in 2020/2021 per Dr. Guillet's presentation;

iii. A contingency budget of 8-10%. We note that the CAPEX budget provided in the Two Dogs Report included a 10% contingency factor,[356] which is at the top end of the range in 2020/2021 per Dr. Guillet's publication.

6.80 While we maintain that the equity requirement in our DCF analysis is reasonable, we have nevertheless included a sensitivity analysis for this issue raised by Dr. Guillet, where we assume an equity requirement of 25% instead of 20%. All else equal, this would reduce our damages conclusions by $11.1 million under the Project Stage Risk Adjustment Factor approach and $23.1 million under the Transaction Structuring approach.[357]

C.V *Expected Return*

6.81 In the transaction structuring approach applied in Secretariat-1, we adopted an expected levered IRR of 14% to 16% over the life of the Project (midpoint of 15%), to reflect the development stage status and risk of the Project as at the Valuation Date.

6.82 We noted that in the Green Giraffe Report, Dr. Guillet opined that as at 2011-2012, the blended IRR requirement for all equity over the life of the Project (i.e., pre-and post FC) would be in excess of 18-20%,[358] and that in an April 2019 presentation, he commented that levered IRRs for offshore wind decreased by 3% to 4% between 2010 and 2016 (and that unlevered IRR's decreased by 2-3%). All else equal, a decrease in the expected IRRs/expected returns would imply an increase in valuations.

6.83 In Guillet-1, Dr. Guillet stated that "*… premiums for projects under development also decreased [since the Green Giraffe Report] … In [Dr. Guillet's] view, the IRR expectations for the development phase would still be 20-25% (probably closer to the top of the range in 2015 and nearer (sic) 20% in 2020.*"[359] All else equal, a lower IRR expectation in 2020 compared to 2015 would translate into a higher value for the Project in 2020 vs. 2015.[360]

6.84 He also stated that using these IRR numbers over the project's life is not relevant at the development stage. Dr. Guillet's comments in Guillet-1 are inconsistent with his comments in the Green Giraffe Report. Nowhere in the Green Giraffe Report did he claim that the expected

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355 CER-Secretariat, ¶ 6.72.

356 CER-Secretariat, ¶ 6.29 and Figure 6-5, with reference to CER-Two Dogs (Capex Opex Sensitivity Report), Sections 3.3 to 3.20.

357 See Appendix 2C.

358 RER-Green Giraffe, ¶ 148.

359 RER-Guillet, ¶ 224.

360 We note that all else equal, using a 20% IRR in our transaction structuring approach (instead of 15%) would result in a value of approximately $147.3 million for the Project as at the Valuation Date. See Appendix 2.

return at the development stage was 20-25%, or that the overall IRR over the project's life is not relevant at the development stage. As noted above, in the Green Giraffe report, he stated that the blended IRR for all equity over the life of the project would be in excess of 18-20% in the development stage.

6.85 Dr. Guillet further attempted to reframe his comments from the presentation he gave in April 2019. He claimed that the 3-4% decrease in levered IRRs between 2010 and 2016 was only meant to refer to projects post FC/FID since *"there are no levered returns prior to FC/FID"*. First, the levered IRR over the life of a project can still be calculated prior to FC/FID, as noted in the Green Giraffe Report, as one can incorporate the anticipated amount of leverage into the financial model for the development stage project, once the project would achieve FC, as done in Secretariat-1. Second, in the same presentation, Dr. Guillet noted that the unlevered IRR returns decreased by 2-3% between 2010 and 2016, which further supports our point that the value of the Project increased since NAFTA 1. Third, Dr. Guillet did not explain or justify why a reduction in post-FID project IRRs would not imply a similar reduction in development stage IRRs (such as the Project).

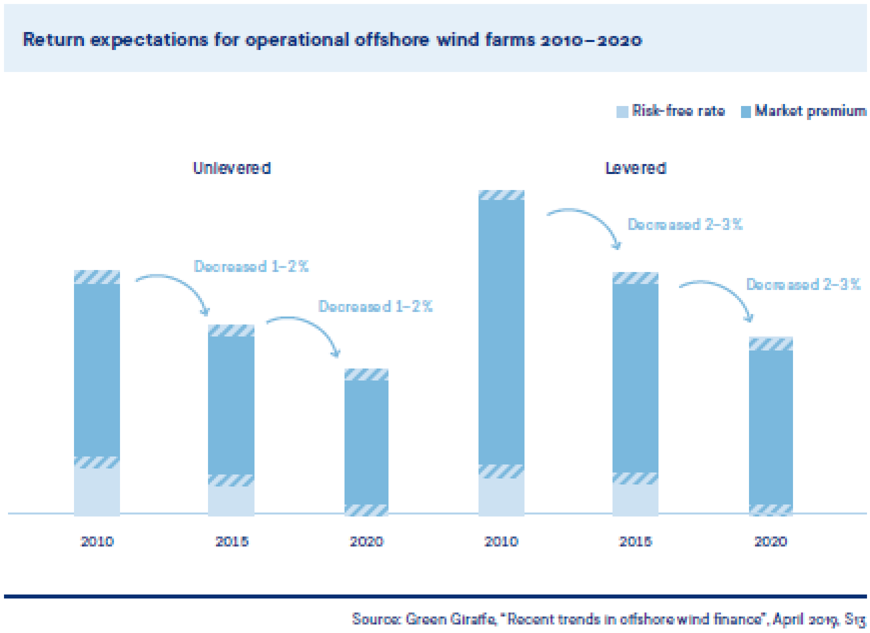
6.86 In a publication issued by Dr. Guillet in September 2022, he explained that: [361]

> *Expected returns on investment (ROI) have followed a slowly declining trend over the past ten years, with both the underlying long-term rates (unrelated to the industry) and the risk premium for offshore wind going down over the period.*
>
> *The slow decline in the risk premium reflects the better understanding of the industry by external investors, combined with a solid track record of projects being built largely on time and on budget, and operating as expected or even slightly better overall (at least compared to the expectations, which were prudent to start with but have also become more aggressive over time as said track record has been available).*

6.87 He provided the following table which showed that both levered and unlevered expected returns decreased by several percentage points from 2010 to 2020: [362]

[361] C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 42.
[362] C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 43.

Figure 6-3: Offshore wind return expectations per Dr. Guillet presentation



6.88 Later in this presentation, Dr. Guillet stated that the *"benchmark IRR has gently gone down over time.*" And that "*the returns expected for riskier assets in the sector…. has also shrunk gently over time*". These observations are also consistent with our our broader point that the value of the Project increased since NAFTA 1. He summarized the expected returns by stage in the table below:[363]

Figure 6-4: Offshore wind return expectations by stage per Dr. Guillet presentation

Investment	Expected Return
Operating wind farm with an experienced operator	5% unlevered
Operating wind farm with an experienced operator, holdco levered structure	7% levered
Construction risk (construction period only)	8–9% levered
Late development (permitted projects)	12–15% (no debt yet)
Early development	20–25% (no debt yet)

Source: Author's estimate

6.89 As noted in the table above, in his publication, Dr. Guillet considered the IRR expectation for projects in the "late development" stage (no debt yet), to be in the range of 12-15%. In our view, given that the Windstream Project had obtained a PPA, confirmed grid connection, and given that our but for scenario is based on the assumption that the government would have

[363] C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 64.

dealt with Windstream in good faith and would not have subjected it to unreasonable regulatory delays, the expected IRR of 15% adopted in our transaction structuring approach is reasonable in the context of the rates reflected in Dr. Guillet's presentation.[364] Further, in this publication the benchmark rates Dr. Guillet provides are not based on any objective data and rather are described as the "Author's estimate" and he notes that these rates are "*…quite meaningless without understanding what the key underlying assumptions are, and what "standard" set of assumptions is used.*"[365] In our view, the fixed FIT prices that the Project had secured would result in a lower expected return for the Project, all else equal. Thus, Dr. Guillet's own estimates as noted in this publication support the reasonableness of the 15% IRR estimated by Mr. Tetard for the Project absent the Alleged Breaches.

C.VI *<u>Risk Adjustment Factor</u>*

6.90 Dr. Guillet asserted that in Secretariat-1 we concluded that "*a project which has no formal site control, none of its permits and no confirmed grid access is worth 66% of its value as a fully permitted, fully contracted and fully funded project at FC.*" Dr. Guillet's observation is incorrect.

6.91 It appears that Dr. Guillet was referring to the 0.66 discount factor used in our transaction structuring analysis (which is shown in Figure 6-10 of Secretariat-1). If this is the case, Dr. Guillet has misunderstood and/or mischaracterized our analysis.

6.92 In Secretariat-1, we concluded that the value of the Project at the Valuation Date, assuming that there is no risk associated with the Project reaching FC, was $575.2 million.[366] After accounting for the risk of reaching FC, we assumed that the value of the Project as at the Valuation Date was $293.4 million under the transaction structuring approach, and $330.7 million under our Project stage risk adjustment factor approach,[367] which represents approximately 50% to 57% of the value of the Project at the Valuation Date, assuming that it would reach FC, not 66%.

6.93 The discount applied to account for the risk of reaching FC is reasonable in light of our assessment of the risk adjustment factor, summarized in Figure 6-11 of Secretariat-1.

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364 We note that all else equal, using a 20% IRR in our transaction structuring approach (instead of 15%) would result in a value of approximately $147.3 million for the Project as at the Valuation Date. See Appendix 2.

365 C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 64.

366 CER-Secretariat, ¶ 6.96.

367 CER-Secretariat, ¶ 6.91.

D. Response to Comments on our Market Approach

6.94 Below we provide our responses to Dr. Guillet's comments on the market approach in Secretariat-1, to the extent that these issues have not been addressed elsewhere in this report.

D.I <u>Relevance of the Comparable Transactions included in Secretariat-1</u>

6.95 Dr. Guillet argued that the transactions included in our comparable transactions analysis were at more advanced stages of development than the Project, which rendered them inappropriate to use in an assessment of the value of the Project. There are several issues with Dr. Guillet's arguments, which we discuss below.

6.96 **First,** Dr. Guillet referred to all 10 of the comparable transactions we selected as "European transactions".[368] This is incorrect. As clearly shown in Figure 7-1 of Secretariat-1, two of these projects were located in Taiwan, and one was located in the US. In other words, 30% of our comparable transactions were not European.

6.97 **Second**, while many of the projects included in the comparable transactions analysis had permits in place as at the transaction date compared to the Project which did not, there were several other characteristics of each of these transactions that were less favourable than the Project which would thereby have an offsetting impact when assessing the comparability of these transactions on a net basis.

6.98 For example, as noted in Secretariat-1:[369]

> *[M]ost of the comparable transactions identified above had a PPA price that was* ***significantly lower than the PPA price that Windstream would have obtained*** *from the Project but for the Alleged Breaches per the FIT Contract. This is consistent with the general downward trend in offshore wind PPA prices since 2010, as we discuss in Appendix 1, Section B. We also note that most of the comparable transactions had a PPA* ***that was for a shorter duration than Windstream****. In this regard, all else equal, we would expect that an offshore windfarm with a higher PPA price, or a longer PPA term (such as Windstream).*

6.99 Further, while the Windstream Project had an inflation adjustment built into its PPA, many of the projects included in our comparable transactions analysis did not.[370]

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[368] RER-Guillet, ¶ 232.

[369] CER-Secretariat, ¶ 7.10.

[370] For example, see CER-Secretariat, ¶ A4.5.

6.100 Dr. Guillet did not comment on or consider the more preferential terms of the Windstream PPA compared to the other projects included in our comparable transactions analysis. This is a major oversight in Dr. Guillet's commentary.

6.101 **Third,** as shown in Schedule 5 of Secretariat-1, none of the Projects used in our comparable transactions analysis had reached FC as at the transaction date. While some of the projects were closer to reaching FC than Windstream was, and ultimately reached FC shortly after the transaction date (such as Triton Knoll and Moray East), other transactions did not reach FC for approximately 1.5 years after the transaction date (such as NNG, Formosa 1 and Formosa 2), and two of the transactions still had not reached FC at all as at the date of Secretariat-1 (Dieppe-LeTreport & Yeu-Noirmouteir; and Revolution Wind & South Fork).

6.102 **Fourth,** Dr. Guillet did not provide any comments on the Formosa 1 transaction that took place in January of 2017. He also did not include this transaction in his own assessment of comparable transactions. This transaction involved a project in a new market for offshore wind (Taiwan), that did not have all its permits in place at the transaction date, and which did not reach FC until approximately 1.5 years after the transaction date. As shown in Schedule 5 of Secretariat-1, this transaction implied a valuation multiple of $0.35 million / MW.

6.103 **Fifth**, Dr. Guillet stated that most of the payment relating to the Formosa 2 transaction was effectively conditioned by FC (or later). He therefore alleged that the value in our table corresponds to a financial close value. This is incorrect. As explained at paragraph A4.21 of Secretariat-1, we discounted the contingent payment incorporated into the Formosa 2 transaction by a probability factor to incorporate the risk as at the transaction date that the project would reach FC and commence construction. Therefore, the transaction price incorporated into our table does not correspond to a financial close value. As discussed in Section 5.C.I above, Dr. Guillet's view is that one should not account for any contingent payment in a comparable transaction analysis. As explained above, this position is incorrect and illogical from a valuation standpoint.

6.104 **Sixth**, as shown in Figure 7-2 of Secretariat-1, four of the projects included in our comparable transactions analysis did not have complete permits in place, and two of the projects did not have grid access in place as at the time of transaction, while as noted above, Windstream did have confirmed grid access. For example, with respect to the Revolution Wind and Southfork transaction in the United States, Dr. Guillet stated that this transaction included "*projects at very different stages of development – some substantially more advanced than the Project.*" As noted in Secretariat-1, Revolution Wind did not have a finalized PPA or permits as at the transaction date, i.e., it was at an earlier stage compared to the Project and its value would therefore underestimate the value of the Project, all else equal. On the other hand, South Fork had a finalized PPA but no permits, which was very similar to the Project.[371] Both windfarms had substantially lower PPA prices than the Project.[372]

6.105 **Seventh**, all of the projects included in our comparable transactions analysis were located at sea or in the ocean, which would make them more difficult and costly to build when compared to the Project. As noted by Mr. Irvine:[373]

> *WIS is in Lake Ontario, not the North Sea or the Atlantic Ocean. It is fresh water, not salt water. While the Lake Ontario surface level height will vary (mean annual variation 0.5m, seasonal variation 0.3 to 1.1m) the variation is small in comparison to tidal variations experienced at sea (up to 6m for UK offshore wind farms). Mean and extreme wave heights on Lake Ontario (extreme wave heights exceed 6m in Lake Ontario and are between 10m and 14m in the Southern North Sea) are significantly lower than those experienced in the North Sea as are mean and extreme wind speeds ...*
>
> *The WIS environment is completely different to the North Sea, with a completely different and significantly lower risk profile than the projects cited in RER-Jérôme Guillet and used to draw conclusions as to how WIS would have progressed through development, financing and construction had it been allowed to do so.*

D.II *Presentation of Conclusions from Comparable Transaction Analysis*

6.106 Dr. Guillet argued that the comparable transactions summary table in Secretariat-1 was misleading as it used average and median multiples for the high and low conclusions.[374] We disagree that our table was misleading. Dr. Guillet mischaracterized the low and high points of our valuation range as being, *"...'low' and 'high' points of the sample."*[375] We did not represent that these were the low and high points in the entire set of comparables. Rather, it

[371] CER-Secretariat, ¶ A4.17; and C-2209 - Ørsted press release entitled "Ørsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

[372] In Schedule 5, footnote 8 of CER-Secretariat, we calculated the average PPA price for the Revolution Wind and South Fork projects (referred to as the "Orsted US Assets" transaction by Dr. Guillet) to be $152.49, and that this average price didn't include all PPAs for these assets and was based on the exchange rate as at the Valuation Date instead of as at the PPA date. We note that a more appropriate calculation of this price would be on a weighted average basis. The weighted average PPA price of the Revolution Wind and South Fork projects was $139.43, as shown below:

Project	PPA Date	MW	PPA Price (original currency per MWh)	FX Rate	PPA Price ($ per MWh)
South Fork	Jan-17	90	USD 160.33	1.309	209.86
	Nov-18	40	USD 86.25	1.320	113.82
Revolution Wind	Dec-18	200	USD 94.00	1.345	126.45
	May-19	400	USD 98.43	1.348	132.64
Revolution Wind and South Fork weighted average					$ 139.43

*See Figure 5-6 above for source data.

[373] CER-Two Dogs-2, section 4.5.

[374] RER-Guillet, ¶¶ 246-247.

[375] RER-Guillet, ¶¶ 246-247.

was evident from our analysis (and, as Dr. Guillet acknowledged, was clearly stated in the table) that the low to high range of our valuation was based on the two measures of central tendency. Dr. Guillet's comment that our use of mean and median in our valuation conclusion is a "methodological error" is surprising since the mean and median are both commonly used measures in valuation, and both consider the entire dataset to arrive at a measure of central tendency. In fact, Dr. Guillet used averages and medians throughout his comparables analysis.[376] Further, in NAFTA 1, the Tribunal also considered the Project's value based on average and median multiples. It ultimately concluded that an appropriate valuation of the Project would be the midpoint of these two measures.[377]

6.107 Thus, our use of the mean and median to develop a valuation range that is informed by all the selected transactions is entirely appropriate and reasonable. Selecting a low to high range from the entire dataset itself, as Dr. Guillet appears to be advocating for (oddly only for our analysis but not his), would amount to selecting one transaction while ignoring all others. This is not a proper analysis since it would not be reflective of all the selected transactions.

D.III US Leases

6.108 Dr. Guillet argued that the factors that explain the high prices for the US leases were not applicable to the Project and that the Project was not more advanced than these leases as the leases were located in US states that have sophisticated policies for the development of offshore wind, whereas those policies are not present in Ontario.[378] In addition to the points discussed in **Section 5D** above, if looking strictly at the development of the Project (without considering the regulatory frameworks), the Project was more advanced than the US projects that only had a lease. As we stated in Secretariat-1:[379]

> *In our view, the Project would have commanded a higher value than the assets acquired in these lease transactions given it was significantly more advanced, primarily since the Project already had a FIT Contract in place which provided it with revenue clarity at a relatively high price compared to the prices that were obtained on other offshore wind projects proximate to the Valuation Date. At a minimum, the Claimant would have in all likelihood been able to sell the Project for an amount greater than the values implied in the lease transactions noted above.*

[376] For example, see the RER-Green Giraffe, page 26 where Dr. Guillet refers to "…0.2 MEUR/MW being a good average figure" and RER-Guillet, ¶¶ 27, 28, 55, 68, 73.
[377] C-2040 - Windstream Energy LLC v. Canada, PCA Case No. 2013-22, Award (September 27, 2016), ¶¶ 479-480, 482.
[378] RER-Guillet, ¶¶ 248-250.
[379] CER-Secretariat, ¶ 7.19.

D.IV <u>Onshore Wind Transactions in Ontario, Canada</u>

6.109 In Secretariat-1, we considered transactions in Ontario involving onshore wind energy projects under the FIT Program of the Ontario Government, to assess the order of magnitude for the value ascribed by market participants to onshore wind energy projects in Ontario prior to the Valuation Date.[380]

6.110 Dr. Guillet did not dispute our calculations on the Ontario onshore wind transactions. Rather, his sole argument was that onshore wind projects are irrelevant in the valuation of offshore wind.[381]

6.111 As discussed in Secretariat 1, while onshore wind energy projects differ from offshore wind energy projects in certain respects,[382] there are some similarities between onshore windfarms in Ontario and the Project that warrant a consideration of these Ontario onshore windfarm transactions in a comprehensive valuation analysis to assess our conclusions from an order of magnitude perspective.

6.112 For example, there is currently a 200 MW onshore windfarm constructed only 5km northeast of the Windstream Project site. This wind farm is composed of 86 X 2.3MW Siemens WTGs and became operational in 2009. The director of the company that developed and operated this onshore windfarm is Ian Baines, who is also a director of Windstream. The components for the onshore Wolfe Island windfarm were delivered from Europe to the Port of Ogdensburg, New York State, on the Saint Lawrence River, and these were transported along the Saint Lawrence River, into Lake Ontario and onto Wolfe Island.[383] As noted by Mr. Irvine:

> *Windstream's intention was to employ this proven means of supplying WTGs to WIS. That Ian Baines has direct experience of supplying WTGs to Wolfe Island Wind Farm is beneficial to the Project. In my opinion, WTG supply to WIS is low risk in relation to other projects.*

6.113 The Windstream Project was to be located only 5km southeast of the onshore Wolfe Island wind farm, in shallow water shoals, and would have relied upon similar infrastructure and materials, transported in the same ways. Therefore, the Ontario onshore wind energy projects are in some ways similar to the Windstream Project and provide a meaningful order of magnitude perspective for the Project's valuation conclusions.

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380 CER-Secretariat, ¶ 7.25.
381 RER-Guillet, ¶¶ 251-252.
382 CER-Secretariat, ¶ 7.25.
383 CER-Two Dogs-2, section 2.2.1.

6.114 Further, the Ontario onshore windfarms would be subject to the same macroeconomic risk factors associated with the Ontario renewable energy market and were subject to similar Ontario-FIT Contracts of 20 years with the IESO.

6.115 In fact, according to Dr. Guillet's publication from September 2022, offshore wind projects enjoy an advantage over onshore projects with respect to measuring wind speeds since,[384]

> *"…wind speeds at sea are a lot easier to measure than onshore, as the surrounding area is completely flat and does not have obstacles like hills, trees, etc., that complicate wind patterns, and estimates made to date on offshore projects have proven to be quite accurate…Investors and financiers are thus quite comfortable with estimates made by reputable experts."*

6.116 Nevertheless, due to the remaining differences between onshore and offshore wind farms, we only considered the valuation metrics from these transactions from an order of magnitude perspective to assess the reasonability of our conclusions.

6.117 In contrast, Dr. Guillet did not consider these Ontario onshore wind farm transactions at all in his analysis, which had some similarities to the Project. Whereas, in his analysis, Dr. Guillet included floating windfarms in other jurisdictions, which he acknowledged were not comparable to the Project.[385]

D.V *Public company multiples*

6.118 In Secretariat-1, we considered the implied valuation metrics from the share prices of publicly traded companies that hold similar assets to the Project. We relied on this information to assess the reasonability of our overall valuation conclusions.[386]

6.119 Similar to our analysis of the Ontario onshore windfarms, Dr. Guillet did not dispute our calculations, but rather argued that "*it is hard to understand how the value of publicly traded companies relates to that of an individual, highly unique asset*" and that public company multiples "*brings zero useful information about a specific project, which was the only one of its kind in Ontario*".[387]

6.120 The share prices of these public companies provide an objective market-based metric for how market participants valued companies that held assets similar to the Project, and therefore provide an appropriate order of magnitude reasonability check on our overall conclusions. Dr.

[384] C-2802 - World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022), page 50.
[385] There were no floating windfarms in Ontario to consider in our analysis.
[386] CER-Secretariat, ¶ 7.45.
[387] RER-Guillet, ¶¶ 253-254.

We generally agree with Dr/ Guillet's comments above about the uniqueness of the Project which equally apply to the use of the use of transaction data from other projects, and this is why we only used the public company data as a reasonableness check on our valuation conclusions under DCF and comparable transaction methods. In any valuation it is important to consider and analyze all available market data that can be used to obtain indications of value to assess the reasonableness of one's conclusions. Whereas we have considered all available information and relevant valuation methods, Dr. Guillet has not.

E. Response to our Comments on Windstream's Discussions with Interested Parties in 2017

6.121 Below we provide our responses to Dr. Guillet's comments on Windstream's discussions with interested parties in 2017.

6.122 **Appetite from investors**: Dr. Guillet argued that the discussions in 2017 showed a lack of appetite for the Project, specifically focusing on terms used by interested parties, like [redacted][388] and dismissing them as "*standard commercial wording*."[389] Dr. Guillet appears to have made determinations on facts only by making speculative interpretations of the words used in the contemporaneous documents and then concluding that they were not relevant. As well, from our perspective, sophisticated market participants would typically not want to waste their time (and resources) by engaging in detailed discussions of assets that are of little or no interest to them.

6.123 **Process and feedback**: According to Dr. Guillet, approaching nine parties represents a "very limited process", and the interactions with the seven parties that elected to receive additional information was "*dismal*." The timetable for the equity process was also "*extremely relaxed*" and feedback from the parties approached was limited and showed "*a complete lack of any interest for a transaction for the Project as it stood then*."[390]

6.124 Dr. Guillet did not provide any evidence to demonstrate that his views were shared by the market participants at that time. More importantly, he failed to recognize the impact of the Alleged Breaches on this process. Given the Alleged Breaches, the Project continued to be impossible to progress due to the Moratorium, which explains why the timetable was "relaxed", and that there was limited interest in the Project "as it stood then". As a result, Dr.

[388] CER-Secretariat, ¶ 8.5, referring to the comments received from [redacted], as discussed in the Third Witness Statement of David Mars, footnote 12.
[389] RER-Guillet, ¶¶ 255-257.
[390] RER-Guillet, ¶¶ 258-263.

Guillet included the impacts of the Alleged Breaches when he opined that the Project would have no value in the 'but-for' world. This is not a proper damages analysis.

6.125 From our perspective, the KeyBanc documents demonstrated that the market participants showed interest in the Project despite the Alleged Breaches, which significantly and negatively impacted the marketability of the Project. This is a significant positive indicator of value in the 'but-for' world where the Alleged Breaches would not have impacted the value of the Project.

6.126 **Impact of Force Majeure**: [redacted]. In Dr. Guillet's opinion, this essentially implies that the Project had no material value at that stage.[391] Dr. Guillet's assertions and conclusions from the discussions with [redacted] are contradictory. First, he asserted that the Project had no value. However, he then asserted that [redacted] Dr. Guillet did not explain why [redacted].

6.127 It is inappropriate for Dr. Guillet to suggest that the Moratorium was not a factor for potentially interested parties. This is also in contradiction with other statements in Guillet-1, whereby Dr. Guillet acknowledged that the Moratorium would have had to be lifted for the Project to make any progress.

6.128 **Conclusion**: Dr. Guillet argued that the discussions with the interested parties in 2017 did not support our conclusions in Secretariat-1 that "*absent the Alleged Breaches, the Project: i) would likely have obtained financing and proceeded to construction, and ii) would have had a positive valuation as at the Valuation Date.*" He opined that we presented "*a bullish, and in [his] view completely unrealistic conclusion*."[392]

6.129 Dr. Guillet's assertions are unsupported. As acknowledged by Dr. Guillet, these market players were interested in the Ontario market. His conclusions that the discussions did not demonstrate meaningful value is incorrect for a damages analysis. The market participants at the time would value the Project based on the actual world circumstances. However, a proper damages analysis requires consideration of the 'but-for' world, and not just the actual world. In summary, Dr. Guillet's comments do not constitute a proper damages analysis.

391 RER-Guillet, ¶¶ 264-265.
392 RER-Guillet, ¶¶ 266-267.

7. ERRORS IN GUILLET-1

7.1 In addition to our comments in the above sections, we identified the following errors in Guillet-1.

A. Late Stage Transactions

7.2 Dr. Guillet's analysis of the late stage Transactions contained the following errors:

i. NNG: Dr. Guillet calculated a transaction multiple of €1.25 million/MW, when based on his data, the multiple should have been €1.33 million/MW.[393]

ii. Seagreen 1: In the transaction that took place in Q3 2018, Dr. Guillet calculated a multiple of €0.22 million/MW based on consideration of €132 million divided by a 50% stake on 1,200 MW of capacity. However, per Dr. Guillet's source, the project only had 1,050 MW consented as of the transaction date. This results in a higher multiple of €0.25 million/MW.[394]

iii. LEM (Dieppe-Le Tréport & Yeu-Noirmoutier): Dr. Guillet made the following errors in the calculation of the transaction multiple for this wind project:

- Stake: He calculated the transaction multiple using a stake of 29.5%, which was incorrect. The 29.5% was the remaining shareholding of EDPR (the seller) after the transaction. The correct stake acquired in this transaction was 13.5%. This resulted in a higher transacted MW, which reduced the multiple calculated by Dr. Guillet.[395]

- Transaction price: He calculated the transaction multiple using a purchase price of €43 million; however, the €43 million considered by Dr. Guillet only represented the upfront portion of the consideration paid in this transaction.[396] The fair value of the

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[393] Calculated as: €600 million / (450 MW x 100% stake) = €1.33/MW. Source: RER-Guillet, Table 7. However, in CER-Secretariat, we calculated a multiple of $1.71 million/MW (or €1.11 million/MW based on the EUR:CAD foreign exchange rate as of the transaction date, per Capital IQ) for this transaction. Our lower multiple is due to the consideration used in our calculations. We have used €500 million per C-2154 - Reuters.com article entitled "France's EDF buys Scottish offshore wind project" (May 3, 2018), while Dr. Guillet used €600 million (see RER-Guillet, Table 7 and R-0743 - The Irish Times article entitled "Mainstream sells Scottish project to France's EDF for over EUR600m" (May 4, 2018)). If we had used the same consideration as Dr. Guillet, our multiple for the NNG transaction would have been $2.05 million/MW instead of $1.71/MW.

[394] Calculated as: €132 million / (1,050 MW x 50% stake) = €0.25.MW. See Schedule 1.

[395] C-2186 - EDPR Press Release entitled "EDPR sells 13.5% stake in French offshore wind projects" (December 18, 2018).

[396] C-2186 - EDPR Press Release entitled "EDPR sells 13.5% stake in French offshore wind projects" (December 18, 2018). According to the press release: "*As part of this transaction, EDPR reduces its shareholding to 29.5% in both projects in exchange of a €42.8m* ***payment upfront****, which can increase over time as predefined conditions are met*" (emphasis added).

contingent consideration in this transaction was calculated to be €36.6 million.[397] Therefore, the fair value of the total consideration paid in this transaction was €79.3 million.[398] (See our comments in Section 5.C.I above).

- Correcting for the above errors results in a multiple of €0.59 million/MW ($0.91 million/MW),[399] compared to Dr. Guillet's multiple of €0.15 million/MW.[400]

iv. Ørsted US assets (Revolution Wind and South Fork): Dr. Guillet made the following errors in the calculation of the transaction multiple for these wind projects:

- In the transaction involving a 50% interest in Ørsted's US assets, Dr. Guillet divided the consideration paid (which was for 50% of the assets) by 100% of the MW of the assets acquired (when it should only be divided by 50% of the MW). This error resulted in an understatement of the implied transaction multiple by half. All else equal, correcting this error would result in a multiple of €0.23 million/MW,[401] compared to Dr. Guillet's multiple of €0.12 million/MW.
- Capacity: Dr. Guillet used a capacity of 860 MW in his calculations; however, per the source documents, he should have used 834 MW.[402]
- As discussed above, Dr. Guillet allocated the transaction value between the early and late stage assets using a 50% allocation factor, which was unsupported. If we were to allocate the value based on the leasing cost and acreage as discussed in

[397] Source: C-2260 - EDPR 2019 Independent Auditor's Report - Consolidated Annual Accounts and Consolidated Management Report (as at December 31, 2019), page 44. According to the Annual Report, the fair value of the contingent consideration incorporated into this transaction was of €16.408 million for Le Treport and €20.143 million for Noirmoutier.

[398] €42.8 million + €16.408 million + €20.143 million = €79.3 million. (minor differences due to rounding) Source: C-2260 - EDPR 2019 Independent Auditor's Report - Consolidated Annual Accounts and Consolidated Management Report (as at December 31, 2019), page 44.

[399] Calculated as: €0.59 x CAD:EUR foreign exchange rate of 1.53 as at the transaction date of December 18, 2018, per Capital IQ. We note that this is equal to the multiple we had calculated for this same transaction in CER-Secretariat, Figure 7-1 (see Dieppe-Le Treport & Yeu-Noirmoutier).

[400] See Schedule1.

[401] Calculated as: €100 million / (860 MW x 50% stake). Source: RER-Guillet, Table 7.

[402] Calculated as: 704 MW for Revolution Wind and 130 MW for South Fork. C-2209 - Ørsted press release entitled "Ørsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Secretariat-1,[403] this would result in a multiple of €0.29 million/MW,[404,405] compared to his multiple of €0.12 million/MW.[406]

v. Empire Wind:[407] Dr. Guillet made the following errors in the calculation of the transaction multiple for these wind projects:

- Capacity: Dr. Guillet had used a capacity of 800 MW in his calculations; however, per our sources, this should be 816 MW.[408]
- As discussed above, Dr. Guillet allocated the transaction value between the early and late stage assets using a 50% allocation factor, which was unsupported. However, if we were to allocate the value based on the leasing cost and acreage as discussed in Secretariat-1,[409] this would result in a multiple of €2.04 million/MW,[410] compared to his multiple of €1.25 million/MW.

vi. Borkum Riff. I + II:

- Consideration: Dr. Guillet included total consideration of €56 million, however per the source documents, the total consideration amounted to €67.3 million. Correcting this error would increase Dr. Guillet's transaction multiple from €0.18/MW to €0.22/MW.[411]

B. *Early Stage Transactions*

7.3 Dr. Guillet's analysis of the early-stage transactions contains the following errors:

i. US Wind / Maryland Bay late stage transaction: We noted the following regarding this transaction:

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403 CER-Secretariat, ¶ A4.19.

404 See Schedule 1. Multiple calculated as: consideration of €122 million / (834 MW x 50%). Portion of consideration allocated to late stage assets calculated as: USD 225 million - (164,480 acres x 50% x CAD1,408.15 cost per acre / 1.3281 CAD:USD foreign exchange rate at transaction) / 1.1325 EUR:USD foreign exchange rate per Capital IQ = (USD 225 million – USD 87 million) / 1.1325 = €122 million.

405 We note that this is equal to the multiple we had calculated for this same transaction in CER-Secretariat, Figure 7-1 (see Revolution Wind & South Fork).

406 We also noted that in his early stage table (Table 4), he shows the consideration amount as €200 million; however, this should be the same as his late stage table (Table 7), which shows €100 million.

407 This transaction includes Beacon Wind. C-2318 - Equinor Press Release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020).

408 C-2204 - Equinor News Releases entitled "Equinor offshore wind bid wins in New York State" (2019).

409 CER-Secretariat, ¶ A4.19.

410 See Schedule 1. Multiple calculated as: consideration of €832 million / (816 MW x 50%). Portion of consideration allocated to late stage assets calculated as: (USD 1.1 billion - (208,000 acres x 50% x CAD1,408.15 cost per acre / 1.3160 CAD:USD foreign exchange rate at transaction)) / 1.1882 EUR:USD foreign exchange rate per Capital IQ = (USD 1.1 billion – USD 111 million) / 1.1882 = €832 million.

411 See Schedule 1. And R-0735 - PNE Wind AG 2009 Annual Report (March 30, 2010), page 12.

- Dr. Guillet referred to this transaction differently under his early and late stage tables even though they are the same transaction (i.e., listed as US Wind under the early stage transactions and Maryland Bay under the late stage transactions);
- Dr. Guillet listed two different dates for this transaction – he listed Q2 2020 under the early stage transaction and Q3 2020 under the late stage transaction;
- Dr. Guillet listed two different sellers for this transaction – he listed Toto under the early stage transaction and US Wind under the late stage transaction;
- In his footnote for the early stage transaction, he noted a multiple of €0.05 million/MW; however, his table shows a multiple of €0.15 million/MW.[412]

ii. Empire+Beacon:

- In the transaction involving a 50% interest in Empire+Beacon in Q3 2020, Dr. Guillet divided the consideration paid (which was for 50% of the assets) by 100% of the MW of the assets, which resulted in an understatement of the implied transaction multiple by half. All else equal, correcting this error would result in a multiple of €0.28 million/MW, which is nearly double the €0.15 million/MW reflected in his report.[413]
- In his footnote for the early stage transaction, he noted a multiple of €0.05 million/MW; however, his table shows €0.15 million/MW.[414]

[412] See RER-Guillet, footnote 39 and Table 4.
[413] See RER-Guillet, Table 4; and CER-Secretariat-2, Schedule 2.
[414] See RER-Guillet, footnote 42 and Table 4.

8. EXPERT DECLARATION

8.1 We, Chris Milburn, Edward Tobis, and Pierre-Antoine Tetard understand that our duty in giving evidence in this arbitration is to assist the arbitral tribunal decide the issues in respect of which expert evidence is adduced. We have complied with, and will continue to comply with, that duty.

8.2 We confirm that this is our own, impartial, objective, unbiased opinion.

8.3 We confirm that we have referred to all matters which we regard as relevant to the opinions we have expressed and have drawn to the attention of the Arbitral Tribunal all matters, of which we are aware, which might adversely affect our opinion.

8.4 Secretariat is currently retained by Torys LLP on other unrelated matters. These other retainers have no impact on Secretariat's ability to provide an independent, objective analysis of the damages in this case.

8.5 We confirm that we are independent of the Parties, their legal Advisors, and the Arbitral Tribunal

8.6 We confirm that, at the time of providing this written opinion, we consider it to be complete and accurate and constitute our true, professional opinion.

8.7 We confirm that if, subsequently, we consider this opinion requires any correction, modification or qualification we will notify the parties to this arbitration and the Arbitral Tribunal forthwith.

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Chris Milburn, August 14, 2023

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Edward Tobis, August 14, 2023

____
Pierre-Antoine Tetard, August 14, 2023

Appendix 1 Scope of Review

A1.1 In addition to Appendix 6 of Secretariat-1, we have relied upon the following documents in arriving at our opinion of damages:

A. Documents from NAFTA 1

Exhibit #	File Name/Description
C-0381	System Impact Assessment Report (IESO), Wolfe Island Shoals Wind Generation Station, Connection Assessment & Approval Process (Final Report) (November 8, 2010)
N/A	Windstream Reply Memorial dated June 22, 2015

B. Expert Reports

Exhibit #	File Name/Description
CER-COWI	(Wind Turbine Gravity Base Foundation Design) Report of COWI dated February 2022
CER-Powell-3	Report of Ms. Sarah Powell dated February 18, 2022
CER-Two Dogs-2	Report of Mr. Ian Irvine of Two Dogs Projects Ltd. dated August 14, 2023
RER-Guillet	Expert Report of Dr. Jerome Guillet dated

C. Exhibits

Exhibit #	File Name/Description
C-2141(c)	WWIS ERPP EOI Form s2.8 – Financing Strategy
C-2464	Day 4- Confidential Condensed Transcript of the Arbitration Hearing of Windstream Energy LLC v. Government of Canada (PCA Case No. 2013-22) (February 18, 2016) (Confidential)
C-2534	Beatrice Wind article entitled “Beatrice is a fully operational 84 Turbine Offshore Wind Farm” (Undated)
C-2535	Global Tech One article entitled “The Global Tech I wind farm is managed from Hamburg” (Undated)
C-2536	Hornsea Projects article entitled “Hornsea Two offshore wind farm” (Undated)
C-2537	“Business Valuation in Canada” by Dr. Howard E. Johnson (2020), Chapters 1 and 5.
C-2538	NS Energy Business article entitled “Borkum Riffgrund 3 Offshore Wind Farm” (Undated)
C-2539	Reuters News Release entitled “Scottish Power becomes third firm to scrap UK offshore wind farm” (Undated)
C-2540	Renewables Now article entitled "Highland-led group secures EUR-1.9bn budget for Veja Mate" (June 30, 2015)

Exhibit #	File Name/Description
C-2541	Orsted website: “Transforming New Jersey with Ocean Wind 1” (accessed on August 10, 2023)
C-2542	Sea Green 1A News Release entitled “Proposal to connect Scotland’s largest offshore wind farm” (Undated)
C-2543	SP Global Profile Report entitled “Statoil Holding Netherlands B.V. acquires 50% of Two off-shore unites of Polenergia SA” (Undated)
C-2545	Presse Portal.de article entitled “Green light for offshore wind farm on the high seas-Energiekontor AG received construction permit for offshore wind farm Borkum Riffgrund West” (February 25, 2004)
C-2547	Vattenfall 2008 Annual Report
C-2548	Shannon P. Pratt & Alina V. Niculita - “Valuing A Business – The Analysis and Appraisal of Closely Held Companies” 5th edition” (2008)
C-2550	Equinor.com News Release entitled “StatoilHydro and Statkraft to develop offshore wind farm” (April 1, 2009)
C-2553	Mainstream Renewable Power Report entitled “Hornsea Wind Farm” (January 2010)
C-2561	Windpower Monthly News Release entitled “FOR pulls out of Forth Array offshore project” (November 22, 2010); Retrieved from https://www.windpowermonthly.com/article/1042327/pulls-forth-array-offshore-project
C-2562	STRABAG Societas Eruopaea – Annual Report 2011 (2011)
C-2563	Marine Scotland Part A – The Plan entitled “A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters” (March 2011); Retrieved from https://tethys.pnnl.gov/sites/default/files/publications/Blue_Seas_Green_Energy.pdf
C-2567	STRABAG Press Release entitled “STRABAG takes Majority Stake in Project Companies for Offshore Wind Power Facilities of Norderland/Northern Energy Group” (May 23, 2011)
C-2569	Mainstream Renewable Power News Release entitled “SMart Wind signs two agreements with the Crown Estate” (August 25, 2011)
C-2570	Offshore Wind News Release entitled “Crown Estate to Lease 5 Sites Offshore Scotland” (October 28, 2011); Retrieved from https://www.offshorewind.biz/2011/10/28/crown-estate-to-lease-5-sites-offshore-scotland/
C-2571	Crown Estate News Release entitled "Green light for 5 GW Scottish offshore wind" (October 28, 2011)
C-2572	Augustaco.com Press Release entitled “Sale of 320MW German offshore wind farm “Nordlicher Grund” (November 4, 2011)
C-2573	Offshore–Energy article entitled “PNE WIND Disposes of all Rights to Nautilus II Offshore Wind Project (Germany)” (November 9, 2011)
C-2574	Renewables Now News Release entitled “PNE Wind AG sells Nautilus II to SSP Technology” (November 9, 2011)
C-2575	Md Coast Dispatch Press Release entitled “Del. Wind Contract Cancelled” (December 29, 2011); Retrieved from https://mdcoastdispatch.com/2011/12/29/del-wind-contract-cancelled/

Exhibit #	File Name/Description
C-2577	Globe News Wire News Release entitled "Centrica and DONG Energy establish joint venture to codevelop Round 3 Irish Sea Zone" (March 21, 2012)
C-2578	Windpower Monthly article entitled "Windreich sells Deutsche Bucht to unnamed "Anglosaxon" investor" (October 24, 2012)
C-2579	Offshore Wind Press Release entitled "Germany: Windreich Sells 'Deutsche Bucht' Offshore Wind Farm" (October 25, 2012)
C-2580	PNE Wind AG – Annual Report 2013 (2013)
C-2585	Gov.uk Report entitled "Electricity Market Reform – Contract for Difference: Contract and Allocation Overview" (August 2013); Retrieved from https://www.gov.uk/government/publications/electricity-market-reform-contracts-for-difference-contract-and-allocation-overview
C-2586	Offshore Wind Press Release entitled "Northland Secures Right to Acquire Majority Equity Stake in Germany OWF" (August 1, 2013)
C-2587	Wpd.de–wpd article entitled "wpd Acquires Offshore Wind Farm Nordergründe: wpd.de/en/" (September 8, 2013)
C-2588	RWE.com press release entitled "RWE stops development on Atlantic Array due to technical challenges making the project uneconomic at current time" (November 26, 2013)
C-2591	Orsted.com company announcement entitled "DONG Energy acquires UK offshore wind development project Race Bank" (December 12, 2013)
C-2593	Letter from Marine Scotland to Mr. Colin Palmer (March 19, 2014)
C-2594	Imeche.org news article entitled "SSE axes planned offshore wind farms" (March 26, 2014)
C-2596	Gov.uk News Release entitled "Government unveils eight major new renewables projects, supporting 8,500 green jobs" (April 23, 2014)
C-2611	Web.archive.org article entitled "Offshore wind farms at the North and Baltic coast in the authorization procedure" (June 2014)
C-2616	The Crown Estate News Release entitled "Crown Estate agrees Celtic Array's decision to cease offshore wind development" (July 31, 2014)
C-2621	Offshore Wind article entitled "EnBW Buys Alabatross Offshore Wind Farm" (December 19, 2014)
C-2627	Letter from the Department of Energy & Climate Change to Stuart Grant (Project Director, Navitus Bay Development Limited) (September 11, 2015)
C-2629	Group Vattenfall press release entitled "Vattenfall acquires German wind development project" (2016)
C-2630	4C Offshore News Release entitled "OWP West Sold!"(January 20, 2016)
C-2632	Offshore Wind article entitled "DONG Energy to Develop Another OWF Project in Germany" (January 22, 2016)
C-2634	Enbridge News Release entitled "Enbridge to Acquire50% Interest in French Offshore Wind Development Company" (May 10, 2016)
C-2637	Energate Messenger News Release entitled "Vattenfall buys Global Tech II" (August 10, 2016)

Exhibit #	File Name/Description
C-2708	Maryland Public Service Commission press release entitled "Maryland PSC Awards ORECS to Two Offshore Wind Developers Projects to Create Jobs, Economic Development in New Industry" (May 11, 2017)
C-2714	Delaware Public news release entitled "Delaware's star-crossed history with offshore wind power" (July 7, 2017); Retrieved from https://www.delawarepublic.org/politics-government/2017-07-07/delawares-star-crossed-history-with-offshore-wind-power
C-2715	EDPR press release entitled "EDPR announces the sale of a 23% stake in UK wind offshore project" (July 7, 2017)
C-2719	4C Offshore news release entitled "CIP joins Australia's Star of the South Project" (November 30, 2017)
C-2721	Polenergia.pl article entitled "Polenergia and Statoil intend to construct wind farms in the Baltic Sea" (March 5, 2018)
C-2723	Inspiratia Market Insight entitled "Taiwan: the next offshore wind gold rush" (April 12, 2018)
C-2727	Capx.co article entitled "Rampion wind farm is a black hole for taxpayer's money" (June 6, 2018)
C-2728	Macquarie press release entitled "Macquarie Capital makes its final investment decision on the second phase of Taiwan's Formosa I offshore wind farm" (June 8, 2018); Retrieved from https://www.macquarie.com/au/en/about/news/2018/macquarie-capital-makes-its-final-investment-decision-on-the-second-phase-of-taiwans-formosa-1-offshore-wind-farm.html
C-2729	Offshore Wind article entitled "Formosa 1, Taiwan's, first offshore wind farm, has reached financial close" (June 8, 2018); Retrieved from https://www.offshorewind.biz/2018/06/08/formosa-1-completes-financial-close/
C-2730	Clean Technica article entitled "Taiwan's 120 Megawatt Formosa 1 Offshore Wind Farm Reached Financial Close" (June 12, 2018)
C-2737	Reuters news release entitled "Orsted divests 50 percent of Hornsea 1 offshore wind farm" (September 18, 2018); Retrieved from https://orsted.com/en/company-announcement-list/2018/09/1809936
C-2745	OFGEM Renewables Obligation (RO) – Guidance for generators that receive or would like to receive support under the Renewables Obligation (RO) scheme (April 2019); Retrieved from https://www.ofgem.gov.uk/sites/default/files/docs/2019/04/ro_generator_guidance_apr19.pdf
C-2747	The Renewable Energy Financial Advisors presentation entitled "Wind of change: finance, regulation, deeptech" (May 20, 2019)
C-2748	Inch Cape Wind Press Release entitled "Inch Cape Wind Farm Granted Consent for Improved Offshore Proposal" (June 18, 2019); Retrieved from https://www.inchcapewind.com/inch-cape-wind-farm-granted-consent-for-improved-offshore-proposal/
C-2753	Renews.biz Press Release entitled "Castle Wind signs MoU for 1GW California floater" (August 16, 2019)
C-2757	Long Island Power Authority (LIPA) fact sheet entitled "South Fork Wind Farm: Fact Sheet"
C-2762	Orsted - Walney Offshore Wind Farm (2020)

Exhibit #	File Name/Description
C-2768	Statkraft press release entitled "Statkraft signs Long Term PPA with Seagreen Wind Energy" (July 8, 2020)
C-2769	Apollo article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc." (August 14, 2020)
C-2770	Power Technology article entitled "Apollo Funds to acquire stake in US Wind to fund offshore project" (August 17, 2020)
C-2772	Dogger Bank Press Release entitled "Dogger Bank Wind Farm A and B reaches financial close" (November 26, 2020); Retrieved from https://doggerbank.com/press-releases/dogger-bank-wind-farm-a-and-b-reaches-financial-close/
C-2774	SSE News Release entitled "SSE Renewables reaches financial close on first two phases of Dogger Bank Wind Farm" (November 26, 2020)
C-2775	Offshore Wind article entitled "CIP Invests in 250 MW Floating Wind Farm in Italy" (December 18, 2020)
C-2776	Press Release entitled "Hornsea Project Three Offshore Wind Farm given development consent" (December 31, 2020); Retrieved from https://www.gov.uk/government/news/hornsea-project-three-offshore-wind-farm-given-development-consent
C-2778	Sofia Wind Farm Press Release entitled "Positive financial investment decision for largest offshore wind project in RWE fleet" (March 24, 2021)
C-2781	Equinor.com News Release entitled "Breakthrough for Equinor in Polish offshore wind" (May 4, 2021)
C-2783	Equinor.com News Release entitled "Equinor and partner reach financial close on the third phase of the world's biggest offshore wind farm" (December 2, 2021)
C-2786	KPMG quarterly brief, 17th edition, Q1 2022 entitled "Renewable energy valuation in the global energy transition" (January 2022)
C-2792	Northern – Scot News Release entitled "Moray East windfarm fully operational" (April 5, 2022)
C-2793	Renews.biz News Release entitled "Ocean Winds lands off-take deal for Moray West" (June 9, 2022)
C-2794	Orsted News Release entitled "Ørsted awarded contract for worlds single biggest offshore wind farm" (July 7, 2022)
C-2795	Red Rock Power Press Release entitled "Inch Cape offshore Wind Farm Secures CfD" (July 7, 2022)
C-2796	Scottish Power Renewables News Release entitled "ScottishPower Renewables Delivers a Green Sweep in CfD Auction" (July 7, 2022)
C-2802	World Forum Offshore Wind (WFO) – Financing Offshore Wind (September 2022)
C-2809	Enbw.com article entitled "EnBW Hohe See and Albatros wind farms" (2023)
C-2812	North America Offshore Wind Map (April 2020)

Exhibit #	File Name/Description
C-2819	Recharge News News Release entitled “Call us crazy, but we’re betting on a big future for small renewable energy players – even in offshore wind” (April 5, 2023); Retrieved from https://www.rechargenews.com/energy-transition/call-us-crazy-but-we-re-betting-on-a-big-future-for-small-renewable-energy-players-even-in-offshore-wind/2-1-1430738
C-2820	Moray West News Release entitled “Moray West Offshore Windfarm reaches Financial Close” (April 22, 2023)
C-2830	Printout from Ocean Energy Resources entitled “Iberdrola takes over 100% of Saint – Brieuc offshore wind mega – project in France” (March 10, 2020); Retrieved from https://thediplomatinspain.com/en/2020/03/iberdrola-takes-over-100-of-the-saint-brieuc-offshore-wind-mega-project-in-france/
C-2831	The Seaway – Great Lakes St. Lawrence Seaway System “St. Lawrence Seaway Management Corporation” (accessed August 9, 2023); Retrieved from https://greatlakes-seaway.com/en/the-seaway.
C-2832	KPMG Legal Guideline for Offshore Project Contracts (2013)
C-2833	Hertie School of Governance Working Paper 4 entitled “Offshore Wind Power Expansion in Germany – Scale, Patterns and Causes of Time Delays and Cost Overruns” (May 2015)
C-2835	The Hill article entitled “US Completes construction of second offshore windfarm” (June 30, 2020)
C-2836	Article entitled “Ørsted and Eversource Joint Venture Approves Final Investment Decision for New York’s South Fork Wind Offshore Wind Farm” (February 11, 2022)
C-2837	Southfork Wind Article entitled “Governor Hochul Announces Start of Construction of New Yorks First Offshore Wind Project” (February 14, 2022)
C-2838	Decision letter from the Department for Business, Energy & Industrial Strategy to Brian McGrellis of East Anglia ONE North Limited (March 31, 2022)
C-2839	Offshore Wind article entitled “Work Starts on Sunrise Wind Onshore Substation" (July 25, 2023)
C-2840	Jerome A Paris Article entitled “The cost of wind, the price of wind, the value of wind (August 8, 2023)
R-0678	Equinor press release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009)
R-0680	Reuters news article entitled "DONG Energy buys one third of two UK wind projects" (December 16, 2011)
R-0682	Renewables Now article entitled "German PNE Wind buys three offshore projects in North Sea from Bard" (September 18, 2013)
R-0686	Polenergia Corporate Website: "Offshore wind farms"
R-0688	Aker Solutions press release entitled "Aker Solutions and EDP Renewables to Develop Floating Wind Farm in Ulsan, South Korea" (October 18, 2019)
R-0689	Recharge news article entitled "Oil giant Total dives into offshore wind with 'world's biggest' floating array" (March 18, 2020)

Exhibit #	File Name/Description
R-0690	Reuters news article entitled "Oil major Total buys 80% stake in Erebus floating offshore wind project"
R-0691	Evwind news article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc."
R-0692	Recharge news article entitled "Global energy heavyweights buy into US' flagship floating wind power pilot" (August 5, 2020)
R-0699	Financial Times article entitled “Renewable energy Wind power executives worry over US offshore ambitions” (October 24, 2022); Retrieved from https://www.ft.com/content/c8187263-7039-4cc9-805a-6e453c011a5d
R-0719	SSE plc press release entitled " Seagreen Offshore Wind Farm" (June 3, 2020)
R-0726	Vineyard Wind press release entitled "Vineyard Wind 1 Becomes the First Commercial Scale Offshore Wind Farm in the US to Achieve Financial Close" (September 15, 2021)
R-0731	East Midlands Business Angels Case Studies (accessed December 2, 2020)
R-0732	Reuters article entitled "Vattenfall buys Britain's biggest offshore wind farm" (November 10, 2008)
R-0733	Statkraft Annual Report/Sustainability Report 2009 (March 17, 2010)
R-0734	Orsted press release entitled "DONG Energy and Siemens Project Ventures to join UK offshore wind farm project" (December 23, 2009)
R-0735	PNE Wind AG 2009 Annual Report (March 30, 2010)
R-0736	Airtricity news release entitled "Airtricity acquisition of stake in Walney offshore wind farm in Irish Sea" (December 23, 2009)
R-0737	Offshore Wind articled entitled "Dong Energy to Develop Borkum Riffgrund West 1 for EUR 30 Million" (November 6, 2011)
R-0738	Offshore Wind articled entitled "DONG Energy Acquires German Gode Wind 1, 2, and 3" (August 14, 2012)
R-0739	Maritime Executive article entitled "Van Oord Involved in Gemini Offshore Wind Park" (August 2, 2013)
R-0740	Offshore Wind article entitled "Germany: Energiekontor Sells Nordergrunde Offshore Wind Farm to wpd" (September 6, 2013)
R-0741	Centrica press release entitled "Centrica to sell Race Bank wind farm project to DONG Energy" (December 11, 2013)
R-0743	The Irish Times article entitled "Mainstream sells Scottish project to France's EDF for over EUR600m" (May 4, 2018)
R-0744	SSE news release entitled "SSE acquires Fluor Ltd.'s 50% share of Seagreen Wind Energy Limited" (September 25, 2018)
R-0745	Enerdata article entitled "Iberdrola takes over 496 MW offshore wind project in Frances" (March 11, 2020)
R-0746	Renewables Now article entitled "SSE awards Seagreen 1 contracts as Total buys project stake" (June 4, 2020)

Exhibit #	File Name/Description
R-0749	Ormonde Offshore Wind Farm, 2010 Construction Environmental Monitoring Report (January 2012)
R-0750	Ormonde Decisions on Application since 2005 (accessed December 7, 2020)
R-0755	Orsted publication entitled "Lincs Offshore Wind Farm" (2019)
R-0762	Windpower Monthly article entitled "Statoil & Statkraft buy 560MW Dudgeon project" (October 17, 2012)
R-0763	Windtech International article entitled "Permits for Gemini offshore wind farm irrevocable" (December 10, 2013)
R-0764	Offshore Wind article entitled "UK: Achieving Government's Consent Important Milestone for Race Bank Project" (July 6, 2012)

Appendix 2 Sensitivity Models

A2.1 Refer to native Excel file titled “**Appendix 2A**_1yr Delay_Windstream v. Canada Secretariat & PAT Sensitivity.xlsm” for the sensitivity analysis referred at paragraph 4.45i above.

A2.2 Refer to native Excel file titled “**Appendix 2B**_Revised MCOD__Windstream v. Canada Secretariat & PAT Sensitivity.xlsm” for the sensitivity analysis referred at paragraph 4.45ii above.

A2.3 Refer to native Excel file titled “**Appendix 2C**_Equity__Windstream v. Canada Secretariat & PAT Sensitivity.xlsm” for the sensitivity analysis referred at paragraph 4.45iii above.

Windstream v. Canada
Schedule 1 - Detailed Analysis of Dr. Guillet's Late Stage Transactions
Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[1] **Ormonde**

Transaction date	R-0731 - East Midlands Business Angels Case Studies (accessed December 2, 2020). Source states acquired November 2008. We have assumed a date of November 28 as it is the last available FX rate in November 2008.
Amount	R-0731 - East Midlands Business Angels Case Studies (accessed December 2, 2020).
Total MW	R-0749 - Ormonde Offshore Wind Farm, 2010 Construction Environmental Monitoring Report (January 2012), page 1, section 1.1.
Stake %	C-2547 - Vattenfall 2008 Annual Report, page 86. "Note 3 Acquired and divested operations".
Revenue certainty	Unable to find information.
Grid access	Information not available.
Site control	Information not available.
Permits	Consent only. See R-0750 - Ormonde Decisions on Application since 2005 (accessed December 7, 2020).

[2] **Thanet**

Transaction date	R-0732 - Reuters article entitled "Vattenfall buys Britain's biggest offshore wind farm" (November 10, 2008).
Amount	R-0732 - Reuters article entitled "Vattenfall buys Britain's biggest offshore wind farm" (November 10, 2008).
Total MW	R-0732 - Reuters article entitled "Vattenfall buys Britain's biggest offshore wind farm" (November 10, 2008).
Stake %	C-2547 - Vattenfall 2008 Annual Report, page 86. "Note 3 Acquired and divested operations".
Revenue certainty	C-2547 - Vattenfall 2008 Annual Report, page 14: Thanet was a "construction-ready offshore wind farm", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits. However, per RER-Guillet, Table 8: this project was under the ROC revenue regime, which provides revenue visibility but not revenue certainty as discussed in Secretariat-2, section 5.
Grid access	C-2547 - Vattenfall 2008 Annual Report, page 14: Thanet was a "construction-ready offshore wind farm", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.
Site control	C-2547 - Vattenfall 2008 Annual Report, page 14: Thanet was a "construction-ready offshore wind farm", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.
Permits	C-2547 - Vattenfall 2008 Annual Report, page 14: Thanet was a "construction-ready offshore wind farm", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.

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Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[3] **Global Tech I**

Total MW	C-2535 - Global Tech One article entitled "The Global Tech I wind farm is managed from Hamburg" (Undated)

Unable to find other information. Per RER-Guillet, footnote 54: "Information provided by STRABAG."

[4] **Sheringham Shoal**

Transaction date	R-0733 - Statkraft Annual Report/Sustainability Report 2009 (March 17, 2010), page 5. Source states acquired in March. We have assumed a date of March 31 as it is the last available FX rate in March 2009.
Amount	R-0733 - Statkraft Annual Report/Sustainability Report 2009 (March 17, 2010), page 10.
Total MW	R-0733 - Statkraft Annual Report/Sustainability Report 2009 (March 17, 2010), page 5.
Stake %	R-0733 - Statkraft Annual Report/Sustainability Report 2009 (March 17, 2010), page 5.
Revenue certainty	C-2550 - Equinor.com News Release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009): "Sheringham Shoal is ready for construction", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits. However, per RER-Guillet, Table 8: this project was under the ROC revenue regime, which provides revenue visibility but not revenue certainty as discussed in Secretariat-2, section 5.
Grid access	C-2550 - Equinor.com News Release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009): "Sheringham Shoal is ready for construction", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.
Site control	C-2550 - Equinor.com News Release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009): "Sheringham Shoal is ready for construction", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.
Permits	C-2550 - Equinor.com News Release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009): "Sheringham Shoal is ready for construction", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.

Windstream v. Canada

Schedule 1 - Detailed Analysis of Dr. Guillet's Late Stage Transactions

Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[5] **Lincs**

Transaction date	R-0734 - Orsted press release entitled "DONG Energy and Siemens Project Ventures to join UK offshore wind farm project" (December 23, 2009).
Amount	R-0734 - Orsted press release entitled "DONG Energy and Siemens Project Ventures to join UK offshore wind farm project" (December 23, 2009).
Total MW	R-0734 - Orsted press release entitled "DONG Energy and Siemens Project Ventures to join UK offshore wind farm project" (December 23, 2009).
Stake %	R-0734 - Orsted press release entitled "DONG Energy and Siemens Project Ventures to join UK offshore wind farm project" (December 23, 2009).
Revenue certainty	R-0755 - Orsted publication entitled "Lincs Offshore Wind Farm" (2019), page 6: "Final investment decision was made" in October 2009, which means it had all components required for a final investment decision, i.e., revenue mechanism, grid access, site control, and permits. However, per RER-Guillet, Table 8: this project was under the ROC revenue regime, which provides revenue visibility but not revenue certainty as discussed in Secretariat-2, section 5.
Grid access	R-0755 - Orsted publication entitled "Lincs Offshore Wind Farm" (2019), page 6: "Final investment decision was made" in October 2009, which means it had all components required for a final investment decision, i.e., revenue mechanism, grid access, site control, and permits.
Site control	R-0755 - Orsted publication entitled "Lincs Offshore Wind Farm" (2019), page 6: "Final investment decision was made" in October 2009, which means it had all components required for a final investment decision, i.e., revenue mechanism, grid access, site control, and permits.
Permits	R-0755 - Orsted publication entitled "Lincs Offshore Wind Farm" (2019), page 6: "Final investment decision was made" in October 2009, which means it had all components required for a final investment decision, i.e., revenue mechanism, grid access, site control, and permits.

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
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			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
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[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[6] **Borkum Riff. I+II**

Transaction date	R-0735 - PNE Wind AG 2009 Annual Report (March 30, 2010), page 54.
Amount	R-0735 - PNE Wind AG 2009 Annual Report (March 30, 2010), page 12.
	Calculated as: €11.3 million upfront + €56 million remaining. However, the €56 million is on an undiscounted basis, therefore, the multiple would be lower if the discounted amount is used in the calculation.
Total MW	R-0735 - PNE Wind AG 2009 Annual Report (March 30, 2010), page 36: Riffgrund I has 277 MW while Riffgrund II has 346 MW, for a total of 623 MW.
Stake %	R-0735 - PNE Wind AG 2009 Annual Report (March 30, 2010), page 54.
Revenue certainty	Unable to find information.
Grid access	C-1913 - 4C Comparables, tab 'Events', WindfarmEventId 7012 and 7013: Borkum Riffgrund I and II received an unconditional grid offer on September 3, 2012.
Site control	Unable to find information.
Permits	R-0735 - PNE Wind AG 2009 Annual Report (March 30, 2010), page 36: Riffgrund I is at Phase 4 "Permit issued", while Riffgrund II is at Phase 3 "Application conference completed".

[7] **Walney**

Transaction date	
Amount	R-0736 - Airtricity news release entitled "Airtricity acquisition of stake in Walney offshore wind farm in Irish Sea" (December 23, 2009).
Total MW	R-0736 - Airtricity news release entitled "Airtricity acquisition of stake in Walney offshore wind farm in Irish Sea" (December 23, 2009).
Stake %	R-0736 - Airtricity news release entitled "Airtricity acquisition of stake in Walney offshore wind farm in Irish Sea" (December 23, 2009).
Revenue certainty	Unable to find information.
Grid access	Unable to find information.
Site control	C-2762 - Orsted - Walney Offshore Wind Farm (2020), page 6: Walney was awarded a lease in 2003.
Permits	C-2762 - Orsted - Walney Offshore Wind Farm (2020), page 6: "Tender, planning, and design" continued into 2010; therefore, we have assumed that Walney was not fully permitted as of the transaction date.

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[8] **Borkum Riff. West**

Transaction date	R-0737 - Offshore Wind articled entitled "Dong Energy to Develop Borkum Riffgrund West 1 for EUR 30 Million" (November 6, 2011).
Amount	R-0737 - Offshore Wind articled entitled "Dong Energy to Develop Borkum Riffgrund West 1 for EUR 30 Million" (November 6, 2011).
Total MW	R-0737 - Offshore Wind articled entitled "Dong Energy to Develop Borkum Riffgrund West 1 for EUR 30 Million" (November 6, 2011).
Stake %	R-0737 - Offshore Wind articled entitled "Dong Energy to Develop Borkum Riffgrund West 1 for EUR 30 Million" (November 6, 2011).
Revenue certainty	Unable to find information.
Grid access	Unable to find information.
Site control	Unable to find information.
Permits	C-2545 - Presse Portal.de article entitled "Green light for offshore wind farm on the high seas- Energiekontor AG received construction permit for offshore wind farm Borkum Riffgrund West" (February 25, 2004).

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	**No**	na	**No**	na	No	na	na	**No**
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	**No**	**No**	na	**No**	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	**No**	na	**No**	1/2	No	**No**	na	**1/2**
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	**No**	na	**No**	Yes	No	na	Yes	**No**
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	**No**	na	**No**	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	**No**	na	**No**	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	**No**	**No**	**No**	**No**	na	No	na	na	**No**
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	**No**	**No**	Yes	**No**	na	No	na	na	**No**
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	**No**	**No**	na	**No**	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	**No**	**No**	**No**	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	**No**	Yes	**No**	na	No	na	na	**No**
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	**No**	**No**	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	**No**	No	1/2	na	**1/2**
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	**Yes**	na	Yes	**No**
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	**No**	Yes	**No**	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	**No**	Yes	**No**	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	**No**	Yes	**No**	na	**Yes**	na	Yes	**No**
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	**No**	**No**	Yes	**No**	na	**Yes**	na	Yes	na

Notes

[9] **Gode Wind 1-3**

Transaction date	R-0738 - Offshore Wind articled entitled "DONG Energy Acquires German Gode Wind 1, 2, and 3" (August 14, 2012).
Amount	R-0738 - Offshore Wind articled entitled "DONG Energy Acquires German Gode Wind 1, 2, and 3" (August 14, 2012).
Total MW	R-0738 - Offshore Wind articled entitled "DONG Energy Acquires German Gode Wind 1, 2, and 3" (August 14, 2012).
Stake %	R-0738 - Offshore Wind articled entitled "DONG Energy Acquires German Gode Wind 1, 2, and 3" (August 14, 2012).
Revenue certainty	Unable to find information.
Grid access	R-0738 - Offshore Wind articled entitled "DONG Energy Acquires German Gode Wind 1, 2, and 3" (August 14, 2012): "Gode Wind 1 and 2 have unconditional grid connection confirmation from the grid provider TenneT for a total of 584 megawatt."
Site control	Unable to find information.
Permits	R-0738 - Offshore Wind articled entitled "DONG Energy Acquires German Gode Wind 1, 2, and 3" (August 14, 2012): "Gode Wind 1 and 2 both have a permit from German authorities that allows for the construction and operation of the projects." "Gode Wind 3 has applied for a permit to construct and operate, which is expected to be granted in 2013."

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€) [A] = [D] / [G]	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount [B]	FX Rate at Transaction Date [C]	Amount (€ million) [D] = [B] / [C]	Total MW [E]	Stake % [F]	Transacted MW [G] = [E] x [F]	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[10] **Dudgeon**

Transaction date	R-0762 - Windpower Monthly article entitled "Statoil & Statkraft buy 560MW Dudgeon project" (October 17, 2012).
Amount	Unable to find information.
Total MW	R-0762 - Windpower Monthly article entitled "Statoil & Statkraft buy 560MW Dudgeon project" (October 17, 2012).
Stake %	R-0762 - Windpower Monthly article entitled "Statoil & Statkraft buy 560MW Dudgeon project" (October 17, 2012).
Revenue certainty	The project obtained a CfD in 2014. i.e., after the transaction. Source: C-2596 - Gov.uk News Release entitled "Government unveils eight major new renewables projects, supporting 8,500 green jobs" (April 23, 2014).
Grid access	Unable to find information.
Site control	Unable to find information.
Permits	R-0762 - Windpower Monthly article entitled "Statoil & Statkraft buy 560MW Dudgeon project" (October 17, 2012): "the consenting phase of the project nearing completion"; i.e., not yet complete/permitted.

[11] **Gemini**

Transaction date	R-0739 - Maritime Executive article entitled "Van Oord Involved in Gemini Offshore Wind Park" (August 2, 2013).
Amount	Unable to find information.
Total MW	R-0739 - Maritime Executive article entitled "Van Oord Involved in Gemini Offshore Wind Park" (August 2, 2013).
Stake %	R-0739 - Maritime Executive article entitled "Van Oord Involved in Gemini Offshore Wind Park" (August 2, 2013).
Revenue certainty	C-2586 - Offshore Wind Press Release entitled "Northland Secures Right to Acquire Majority Equity Stake in Germany OWF" (August 1, 2013): "In 2010, Gemini was granted two 15-year agreements ... these agreements provide a premium price for the large majority of the wind farm's output."
Grid access	Unable to find information.
Site control	Unable to find information.
Permits	R-0763 - Windtech International article entitled "Permits for Gemini offshore wind farm irrevocable" (December 10, 2013), i.e., after the transaction date.

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	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[12] **Nordergrunde**

Transaction date	R-0740 - Offshore Wind article entitled "Germany: Energiekontor Sells Nordergrunde Offshore Wind Farm to wpd" (September 6, 2013).
Amount	Unable to find information.
Total MW	C-2587 - Wpd.de–wpd article entitled “wpd Acquires Offshore Wind Farm Nordergründe: wpd.de/en/” (September 8, 2013). Calculated as 18 wind turbines x 6 MW each.
Stake %	Unable to find information.
Revenue certainty	Unable to find information.
Grid access	R-0740 - Offshore Wind article entitled "Germany: Energiekontor Sells Nordergrunde Offshore Wind Farm to wpd" (September 6, 2013): "The construction of the onshore grid route is largely complete." Therefore, the project had grid access.
Site control	Unable to find information.
Permits	Unable to find information.

[13] **Race Bank**

Transaction date	R-0741 - Centrica press release entitled "Centrica to sell Race Bank wind farm project to DONG Energy" (December 11, 2013).
Amount	R-0741 - Centrica press release entitled "Centrica to sell Race Bank wind farm project to DONG Energy" (December 11, 2013).
Total MW	R-0764 - Offshore Wind article entitled "UK: Achieving Government's Consent Important Milestone for Race Bank Project" (July 6, 2012).
Stake %	C-2591 - Orsted.com company announcement entitled “DONG Energy acquires UK offshore wind development project Race Bank” (December 12, 2013).
Revenue certainty	R-0741 - Centrica press release entitled "Centrica to sell Race Bank wind farm project to DONG Energy" (December 11, 2013): "In November 2013 Race Bank was not included on the list of projects awarded the early enabling Contract for Difference", i.e., no revenue certainty as of the transaction date.
Grid access	Unable to find information.
Site control	R-0741 - Centrica press release entitled "Centrica to sell Race Bank wind farm project to DONG Energy" (December 11, 2013): "In 2004, Centrica was awarded a 50-year lease from The Crown Estate to develop the Race Bank Wind farm".
Permits	Unable to find information.

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Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[14] **Veja Mate**

Transaction date — C-2540 - Renewables Now article entitled "Highland-led group secures EUR-1.9bn budget for Veja Mate" (June 30, 2015).
Source states acquired September 2014. We have assumed a date of September 30 as it is the last available FX rate in September 2014.

Total MW — C-2540 - Renewables Now article entitled "Highland-led group secures EUR-1.9bn budget for Veja Mate" (June 30, 2015).

No other information publicly available. Per RER-Guillet, footnote 65: "Green Giraffe acted as advisor to Highland for this transaction."

[15] **Albatros**

Transaction date — C-2621 - Offshore Wind article entitled "EnBW Buys Alabatross Offshore Wind Farm" (December 19, 2014).

Amount — C-2621 - Offshore Wind article entitled "EnBW Buys Alabatross Offshore Wind Farm" (December 19, 2014): "The contractual partners have agreed not to disclose any information about the purchase price."

Total MW — C-2809 - Enbw.com article entitled “EnBW Hohe See and Albatros wind farms” (2023)

No other information publicly available. Per RER-Guillet, footnote 66: "Information provided by STRABAG."

[16] **EMF**

Transaction date — C-2634 - Enbridge News Release entitled “Enbridge to Acquire50% Interest in French Offshore Wind Development Company” (May 10, 2016).

Amount — C-2634 - Enbridge News Release entitled “Enbridge to Acquire50% Interest in French Offshore Wind Development Company” (May 10, 2016).

Total MW — C-2634 - Enbridge News Release entitled “Enbridge to Acquire50% Interest in French Offshore Wind Development Company” (May 10, 2016).

Stake % — C-2634 - Enbridge News Release entitled “Enbridge to Acquire50% Interest in French Offshore Wind Development Company” (May 10, 2016).

Revenue certainty — C-2634 - Enbridge News Release entitled “Enbridge to Acquire50% Interest in French Offshore Wind Development Company” (May 10, 2016): ''Each of the three wind projects has been awarded a 20-year Power Purchase Agreement (PPA).''

Grid access — Unable to find information.

Site control — Unable to find information.

Permits — C-2634 - Enbridge News Release entitled “Enbridge to Acquire50% Interest in French Offshore Wind Development Company” (May 10, 2016): ''permitting process close to completion.''

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	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				*[B]*	*[C]*	*[D] = [B] / [C]*	*[E]*	*[F]*	*[G] = [E] x [F]*									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	**No**	na	**No**	na	No	na	na	**No**
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	**No**	**No**	na	**No**	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	**No**	na	**No**	1/2	No	**No**	na	**1/2**
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	**No**	na	**No**	Yes	No	na	Yes	**No**
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	**No**	na	**No**	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	**No**	na	**No**	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	**No**	**No**	**No**	**No**	na	No	na	na	**No**
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	**No**	**No**	Yes	**No**	na	No	na	na	**No**
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	**No**	**No**	na	**No**	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	**No**	**No**	**No**	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	**No**	Yes	**No**	na	No	na	na	**No**
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	**No**	**No**	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	**No**	No	1/2	na	**1/2**
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	**Yes**	na	Yes	**No**
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	**No**	Yes	**No**	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	**No**	Yes	**No**	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	**No**	Yes	**No**	na	**Yes**	na	Yes	**No**
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	**No**	**No**	Yes	**No**	na	**Yes**	na	Yes	na

Notes

[17] **Neart na Gaoithe**

Transaction date	C-2153 - Capital IQ Pro Deal Profile: "EDF Energy acquires Neart na Gaoithe from Mainstream Renewable Power" (May 3, 2018).
Amount	C-2154 - Reuters.com article entitled "France's EDF buys Scottish offshore wind project" (May 3, 2018): "No financial details of the deal were disclosed, but industry experts have said the deal could be worth about 500 million euros."
Total MW	C-2154 - Reuters.com article entitled "France's EDF buys Scottish offshore wind project" (May 3, 2018).
Stake %	C-2153 - Capital IQ Pro Deal Profile: "EDF Energy acquires Neart na Gaoithe from Mainstream Renewable Power" (May 3, 2018).
Revenue certainty	C-2152 - EDF Renewables Press Release entitled "EDF Group buys Mainstream Renewable Power offshore wind project" (May 3, 2018).
Grid access	C-2152 - EDF Renewables Press Release entitled "EDF Group buys Mainstream Renewable Power offshore wind project" (May 3, 2018).
Site control	C-2571 - Crown Estate News Release entitled "Green light for 5 GW Scottish offshore wind" (October 28, 2011): "Agreements for lease have been awarded."
Permits	C-2152 - EDF Renewables Press Release entitled "EDF Group buys Mainstream Renewable Power offshore wind project" (May 3, 2018).

[18] **Seagreen 1**

Transaction date	R-0744 - SSE press release entitled "SSE acquires Fluor Ltd.'s 50% share of Seagreen Wind Energy Limited" (September 25, 2018).
Amount	R-0744 - SSE press release entitled "SSE acquires Fluor Ltd.'s 50% share of Seagreen Wind Energy Limited" (September 25, 2018).
Total MW	R-0744 - SSE press release entitled "SSE acquires Fluor Ltd.'s 50% share of Seagreen Wind Energy Limited" (September 25, 2018).
Stake %	R-0744 - SSE press release entitled "SSE acquires Fluor Ltd.'s 50% share of Seagreen Wind Energy Limited" (September 25, 2018).
Revenue certainty	R-0744 - SSE press release entitled "SSE acquires Fluor Ltd.'s 50% share of Seagreen Wind Energy Limited" (September 25, 2018): "SSE remains focused on preparing the Seagreen Phase1 projects in readiness to bid in the upcoming UK contracts for difference (CfD) auction," i.e., no revenue certainty as of the transaction date.
Grid access	Unable to find information.
Site control	Unable to find information.
Permits	Unable to find information.

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[19]	**LEM**	
	Transaction date	C-2186 - EDPR Press Release entitled "EDPR sells 13.5% stake in French offshore wind projects" (December 18, 2018).
	Amount	C-2260 - EDPR 2019 Independent Auditor's Report - Consolidated Annual Accounts and Consolidated Management Report (as at December 31, 2019), page 44.
		Calculated as the sum of €44.007 million for Le Treport and €35.196 million for Noirmoutier.
		Dr. Guillet used €43 million in his calculation, which is only the upfront payment per C-2186 - EDPR Press Release entitled "EDPR sells 13.5% stake in French offshore wind projects" (December 18, 2018).
	Total MW	C-2186 - EDPR Press Release entitled "EDPR sells 13.5% stake in French offshore wind projects" (December 18, 2018).
	Stake %	C-2186 - EDPR Press Release entitled "EDPR sells 13.5% stake in French offshore wind projects" (December 18, 2018).
	Revenue certainty	C-2158 - Offshorewind.biz article entitled "France Reduces Feed-In Tariffs for 6 Offshore Wind Projects" (June 20, 2018).
	Grid access	C-2210 - Prefect of the Seine-Maritime press release dated February 26, 2019: “Réalisation du parc éolien en mer au large de Dieppe et du Tréport et son raccordement”.
		C-2187 - Prefect of the Vendee Press Release entitled "Le préfet de la Vendée accorde de nouvelles autorisations nécessaires à la réalisation du parc éolien en mer au large des îles d'Yeu et de Noirmoutier" (December 19, 2018).
	Site control	Unable to find information.
	Permits	C-2210 - Prefect of the Seine-Maritime press release dated February 26, 2019: “Réalisation du parc éolien en mer au large de Dieppe et du Tréport et son raccordement”.

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				*[B]*	*[C]*	*[D] = [B] / [C]*	*[E]*	*[F]*	*[G] = [E] x [F]*									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	**No**	na	**No**	na	No	na	na	**No**
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	**No**	**No**	na	**No**	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	**No**	na	**No**	1/2	No	**No**	na	**1/2**
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	**No**	na	**No**	Yes	No	na	Yes	**No**
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	**No**	na	**No**	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	**No**	na	**No**	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	**No**	**No**	**No**	**No**	na	No	na	na	**No**
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	**No**	**No**	Yes	**No**	na	No	na	na	**No**
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	**No**	**No**	na	**No**	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	**No**	**No**	**No**	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	**No**	Yes	**No**	na	No	na	na	**No**
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	**No**	**No**	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	**No**	No	1/2	na	**1/2**
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	**Yes**	na	Yes	**No**
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	**No**	Yes	**No**	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	**No**	Yes	**No**	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	**No**	Yes	**No**	na	**Yes**	na	Yes	**No**
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	**No**	**No**	Yes	**No**	na	**Yes**	na	Yes	na

Notes

[20] **Orsted US assets**

Transaction date — C-2209 - Ørsted Press Release entitled "Orsted divests 50 of South Fork Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Amount — C-2209 - Ørsted Press Release entitled "Orsted divests 50 of South Fork Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Consistent with the methodology in CER-Secretariat (¶A4.19), we have calculated the amount related to the portion with revenue certainty as follows:

	225,000,000		Total Consideration USD
		164,480	Total acreage of non-operating assets
		50%	Acquired stake
		82,240	Acquired acreage
		1,408	Cost per acre CAD (CER-Secretariat, Figure 7-5)
		115,806,256	Total cost of acquired acreage CAD
		1.3281	FX rate at the transaction date
Less:	87,197,597		Total cost of acquired acreage USD
	137,802,403		Total cost of Revolution and South Fork

Total MW — C-2209 - Ørsted Press Release entitled "Orsted divests 50 of South Fork Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Stake % — C-2209 - Ørsted Press Release entitled "Orsted divests 50 of South Fork Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Revenue certainty — C-2209 - Ørsted Press Release entitled "Orsted divests 50 of South Fork Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Grid access — C-2209 - Ørsted Press Release entitled "Orsted divests 50 of South Fork Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019): "subject to permitting."

Site control — C-2209 - Ørsted Press Release entitled "Orsted divests 50 of South Fork Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Permits — C-2209 - Ørsted Press Release entitled "Orsted divests 50 of South Fork Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019): "subject to permitting."

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[21] **Saint Brieuc**

Transaction date	C-2380 - Printout from Ocean Energy Resources entitled “Iberdrola takes over 100% of Saint – Brieuc offshore wind mega – project in France” (March 10, 2020).
Amount	C-2380 - Printout from Ocean Energy Resources entitled “Iberdrola takes over 100% of Saint – Brieuc offshore wind mega – project in France” (March 10, 2020).
Total MW	C-2380 - Printout from Ocean Energy Resources entitled “Iberdrola takes over 100% of Saint – Brieuc offshore wind mega – project in France” (March 10, 2020).
Stake %	C-2380 - Printout from Ocean Energy Resources entitled “Iberdrola takes over 100% of Saint – Brieuc offshore wind mega – project in France” (March 10, 2020).
Revenue certainty	R-0745 - Enerdata article entitled "Iberdrola takes over 496 MW offshore wind project in Frances" (March 11, 2020).
Grid access	R-0745 - Enerdata article entitled "Iberdrola takes over 496 MW offshore wind project in Frances" (March 11, 2020): "secured all approvals."
Site control	R-0745 - Enerdata article entitled "Iberdrola takes over 496 MW offshore wind project in Frances" (March 11, 2020): "secured all approvals."
Permits	R-0745 - Enerdata article entitled "Iberdrola takes over 496 MW offshore wind project in Frances" (March 11, 2020): "secured all approvals."

As Dr. Guillet has not provide the source the consideration used for this transaction, we are unable to recalculate his transaction multiple.

[22] **Seagreen 1**

Transaction date	R-0746 - Renewables Now article entitled "SSE awards Seagreen 1 contracts as Total buys project stake" (June 4, 2020).
Amount	R-0746 - Renewables Now article entitled "SSE awards Seagreen 1 contracts as Total buys project stake" (June 4, 2020).
Total MW	R-0746 - Renewables Now article entitled "SSE awards Seagreen 1 contracts as Total buys project stake" (June 4, 2020).
Stake %	R-0746 - Renewables Now article entitled "SSE awards Seagreen 1 contracts as Total buys project stake" (June 4, 2020).
Revenue certainty	C-2768 - Statkraft press release entitled "Statkraft signs Long Term PPA with Seagreen Wind Energy" (July 8, 2020): "In September 2019, Seagreen secured a 15-year CfD contract."
Grid access	R-0746 - Renewables Now article entitled "SSE awards Seagreen 1 contracts as Total buys project stake" (June 4, 2020): "entered the construction phase in the first quarter of 2020," i.e., had all components as of the transaction date.
Site control	R-0746 - Renewables Now article entitled "SSE awards Seagreen 1 contracts as Total buys project stake" (June 4, 2020): "entered the construction phase in the first quarter of 2020," i.e., had all components as of the transaction date.
Permits	R-0746 - Renewables Now article entitled "SSE awards Seagreen 1 contracts as Total buys project stake" (June 4, 2020): "entered the construction phase in the first quarter of 2020," i.e., had all components as of the transaction date.

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				*[B]*	*[C]*	*[D] = [B] / [C]*	*[E]*	*[F]*	*[G] = [E] x [F]*									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	**No**	na	**No**	na	No	na	na	**No**
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	**No**	**No**	na	**No**	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	**No**	na	**No**	1/2	No	**No**	na	**1/2**
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	**No**	na	**No**	Yes	No	na	Yes	**No**
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	**No**	na	**No**	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	**No**	na	**No**	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	**No**	**No**	**No**	**No**	na	No	na	na	**No**
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	**No**	**No**	Yes	**No**	na	No	na	na	**No**
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	**No**	**No**	na	**No**	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	**No**	**No**	**No**	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	**No**	Yes	**No**	na	No	na	na	**No**
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	**No**	**No**	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	**No**	No	1/2	na	**1/2**
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	**Yes**	na	Yes	**No**
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	**No**	Yes	**No**	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	**No**	Yes	**No**	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	**No**	Yes	**No**	na	**Yes**	na	Yes	**No**
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	**No**	**No**	Yes	**No**	na	**Yes**	na	Yes	na

Notes

[23] **Empire Wind**

Transaction date — C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020).

Amount — C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020).

Consistent with the methodology in CER-Secretariat (¶A4.19), we have calculated the amount related to the portion with revenue certainty as follows:

	1,100,000,000		Total Consideration USD
		208,000	Total acreage of non-operating assets
		50%	Acquired stake
		104,000	Acquired acreage
		1,408	Cost per acre CAD (CER-Secretariat, Figure 7-5)
		146,447,600	Total cost of acquired acreage CAD
		1.3160	FX rate at the transaction date
Less:	111,283,216		Total cost of acquired acreage USD
	988,716,784		Total cost of portion with revenue certainty

Total MW — C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020).

Stake % — C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020).

Revenue certainty — C-2204 - Equinor News Releases entitled "Equinor offshore wind bid wins in New York State" (2019).

Grid access — C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020): the transaction is for a lease only.

Site control — C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020):
"Equinor holds a 100% interest in both the Empire Wind lease ... and the Beacon Wind lease."

Windstream v. Canada

Schedule 1 - Detailed Analysis of Dr. Guillet's Late Stage Transactions

Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€) [A] = [D] / [G]	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount [B]	FX Rate at Transaction Date [C]	Amount (€ million) [D] = [B] / [C]	Total MW [E]	Stake % [F]	Transacted MW [G] = [E] x [F]	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	**No**	na	**No**	na	No	na	na	**No**
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	**No**	**No**	na	**No**	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	**No**	**No**	**No**	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	**No**	na	**No**	1/2	No	**No**	na	**1/2**
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	**No**	na	**No**	Yes	No	na	Yes	**No**
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	**No**	na	**No**	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	**No**	na	**No**	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	**No**	**No**	**No**	**No**	na	No	na	na	**No**
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	**No**	**No**	Yes	**No**	na	No	na	na	**No**
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	**No**	**No**	na	**No**	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	**No**	**No**	**No**	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	**No**	**No**	na	**No**	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	**No**	Yes	**No**	na	No	na	na	**No**
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	**No**	**No**	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	**No**	No	1/2	na	**1/2**
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	**Yes**	na	Yes	**No**
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	**No**	Yes	**No**	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	**No**	Yes	**No**	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	**No**	Yes	**No**	na	**Yes**	na	Yes	**No**
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	**No**	**No**	Yes	**No**	na	**Yes**	na	Yes	na

Notes

	Permits	C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020): the transaction is for a lease only.
[24]	**Maryland Bay**	
	Transaction date	C-2769 - Apollo article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc." (August 14, 2020).
	Amount	C-2769 - Apollo article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc." (August 14, 2020): "convertible debt and equity up to $265 million."
	Total MW	C-2769 - Apollo article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc." (August 14, 2020).
	Stake %	C-2770 - Power Technology article entitled "Apollo Funds to acquire stake in US Wind to fund offshore project" (August 17, 2020): "Neither company has revealed what percentage Apollo will take."
	Revenue certainty	C-2708 - Maryland Public Service Commission press release entitled “Maryland PSC Awards ORECS to Two Offshore Wind Developers Projects to Create Jobs, Economic Development in New Industry” (May 11, 2017).
	Grid access	Unable to find information.
	Site control	C-2769 - Apollo article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc." (August 14, 2020): "lease of approximately 80,000 acres."
	Permits	Unable to find information.

[25] Translated using the EUR:CAD foreign exchange rate as at the transaction date.
Except for Borkum Riff. West, which was transacted at November 6, 2011; however, there were no exchange rates available at this date. Therefore, we have used the rate immediately prior (at November 4, 2011).

[26] Daily foreign exchange rate as at the transaction date, per Capital IQ.

Windstream v. Canada

Schedule 1 - Detailed Analysis of Dr. Guillet's Late Stage Transactions

Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	RER-Guillet	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Revenue certainty	Included in Secretariat-1 Analysis	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[25]				[26]					[27]	[27]	[27]		[27]	[27]	[27]	[27]	[27]
[1]	Ormonde	0.43	0.43	0.68	28-Nov-08	GBP	52	0.83	62	150	96%	144	Yes	No	na	No	na	No	na	na	No
[2]	Thanet	0.14	0.14	0.22	10-Nov-08	GBP	35	0.82	43	300	100%	300	Yes	No	No	No	na	No	Yes	Yes	Yes
[3]	Global Tech I	0.37	na	na	na	na	na	na	na	400	na	na	No	No	na	No	na	na	na	na	na
[4]	Sheringham Shoal	0.33	0.33	0.56	31-Mar-09	NOK	469	8.95	52	315	50%	158	Yes	No	No	No	na	No	Yes	Yes	Yes
[5]	Lincs	0.42	0.41	0.62	23-Dec-09	DKK	415	7.44	56	270	50%	135	Yes	No	No	No	na	No	Yes	Yes	Yes
[6]	Borkum Riff. I+II	0.18	0.22	0.33	16-Dec-09	EUR	67.3	1.00	67	623	50%	312	Yes	No	na	No	1/2	No	No	na	1/2
[7]	Walney	0.48	0.47	0.71	23-Dec-09	GBP	39	0.90	43	367	25%	92	Yes	No	na	No	Yes	No	na	Yes	No
[8]	Borkum Riff. West	0.08	0.08	0.11	6-Nov-11	EUR	30	1.00	30	400	100%	400	Yes	No	na	No	na	No	na	na	Yes
[9]	Gode Wind 1-3	0.17	0.17	0.21	14-Aug-12	EUR	157	1.00	157	900	100%	900	Yes	No	na	No	Yes	No	2/3	na	2/3
[10]	Dudgeon	0.30	na	na	17-Oct-12	na	na	na	na	560	100%	560	No	No	No	No	na	No	na	na	No
[11]	Gemini	0.10	na	na	2-Aug-13	na	na	na	na	600	10%	60	No	No	Yes	No	na	No	na	na	No
[12]	Nordergrunde	0.20	na	na	6-Sep-13	na	na	na	na	108	na	na	No	No	na	No	na	No	Yes	na	na
[13]	Race Bank	0.10	0.10	0.15	11-Dec-13	GBP	50	0.84	59	580	100%	580	Yes	No	No	No	na	No	na	Yes	na
[14]	Veja Mate	0.20	na	na	30-Sep-14	na	na	na	na	402	na	na	No	No	na	No	na	No	na	na	na
[15]	Albatros	0.11	na	na	19-Dec-14	na	na	na	na	118	na	na	No	No	na	No	na	No	na	na	na
[16]	EMF	0.27	0.27	0.39	10-May-16	CAD	282	1.48	191	1,428	50%	714	Yes	No	Yes	No	na	No	na	na	No
[17]	Neart na Gaoithe	1.25	1.11	1.71	3-May-18	EUR	500	1.00	500	450	100%	450	Yes	Yes	Yes	Yes	na	No	Yes	Yes	Yes
[18]	Seagreen 1	0.22	0.25	0.38	25-Sep-18	GBP	118	0.89	132	1,050	50%	525	Yes	Yes	No	No	na	No	na	na	na
[19]	LEM	0.15	0.59	0.91	18-Dec-18	EUR	79	1.00	79	992	14%	134	Yes	Yes	Yes	Yes	No	No	1/2	na	1/2
[20]	Orsted US assets	0.12	0.29	0.44	8-Feb-19	USD	138	1.13	122	834	50%	417	Yes	Yes	Yes	Yes	na	Yes	na	Yes	No
[21]	Saint Brieuc	0.50	0.60	0.94	10-Mar-20	EUR	90	1.00	90	496	30%	149	Yes	No	Yes	No	na	No	Yes	Yes	Yes
[22]	Seagreen 1	0.24	0.26	0.39	4-Jun-20	GBP	130	0.90	144	1,100	51%	561	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
[23]	Empire Wind	1.25	2.04	3.19	10-Sep-20	USD	989	1.19	832	816	50%	408	Yes	No	Yes	No	na	Yes	na	Yes	No
[24]	Maryland Bay	0.50	na	na	14-Aug-20	USD	265	1.18	224	270	na	na	No	No	Yes	No	na	Yes	na	Yes	na

Notes

[27] Our analysis of Dr. Guillet's late stage development transactions include the following:

Information publicly available	whether sufficient information was publicly available to recalculate and confirm his multiples
In relevant period	whether the transaction was within the relevant period, i.e. took place within 3 years prior the Valuation Date
Floating wind	whether the transaction involved a floating wind farm, which is not comparable to the Project (per Dr. Guillet's Table 7)
Revenue certainty	whether the transaction involved a wind farm with revenue certainty similar to the Project
Dr. Guillet considers contingent consideration	whether Dr. Guillet considered contingent consideration in his calculations
	na = information was not available / there was no contingent consideration to consider
	Yes = there was contingent consideration and Dr. Guillet considered it in his calculations
	No = there was contingent consideration, however, Dr. Guillet excluded it from his calculations
Unsupported allocation	whether Dr. Guillet allocated the transaction value between the early and late stage projects using an unsupported method (per RER-Guillet, Table 7, where he denotes with "*")
Grid access	whether the transacted projects had grid access as of the transaction date
Site control	whether the transacted projects had site control as of the transaction date
Permits	whether the transacted projects were fully permitted as of the transaction date

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[1] **Sheringham Shoal**

Transaction date	R-0678 - Equinor press release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009).
Amount	Unable to find information.
Total MW	R-0678 - Equinor press release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009).
Stake %	R-0678 - Equinor press release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009).
Revenue certainty	R-0678 - Equinor press release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009): the project was "ready for construction", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits. However, per RER-Guillet, Table 5: this project was under the ROC revenue regime, which provides revenue visibility but not revenue certainty as discussed in Secretariat-2, section 5.
Grid access	R-0678 - Equinor press release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009): the project was "ready for construction", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.
Site control	R-0678 - Equinor press release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009): the project was "ready for construction", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.
Permits	R-0678 - Equinor press release entitled "StatoilHydro and Statkraft to develop offshore wind farm" (April 1, 2009): the project was "ready for construction", which means it had all components required to start construction, i.e., revenue mechanism, grid access, site control, and permits.

Schedule 2 - Detailed Analysis of Dr. Guillet's Early Stage Transactions

Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[2] **Nôrdlicher Grund**

Transaction date C-2572 - Augustaco.com Press Release entitled "Sale of 320MW German offshore wind farm "Nordlicher Grund" (November 4, 2011).

Total MW C-2572 - Augustaco.com Press Release entitled "Sale of 320MW German offshore wind farm "Nordlicher Grund" (November 4, 2011).

Permits C-2572 - Augustaco.com Press Release entitled "Sale of 320MW German offshore wind farm "Nordlicher Grund" (November 4, 2011): "permitted Nördlicher Grund project."

Unable to find other information. Per Guillet-1, footnote 19: "Green Giraffe assisted Blackstone on the Meerwind transaction and received confidential information about the Nördlicher Grund transaction."

[3] **Hornsea Subzone**

Transaction date R-0680 - Reuters news article entitled "DONG Energy buys one third of two UK wind projects" (December 16, 2011).

Amount R-0680 - Reuters news article entitled "DONG Energy buys one third of two UK wind projects" (December 16, 2011).

Total MW R-0680 - Reuters news article entitled "DONG Energy buys one third of two UK wind projects" (December 16, 2011): "up to 1 gigawatt."

Stake % R-0680 - Reuters news article entitled "DONG Energy buys one third of two UK wind projects" (December 16, 2011).

Revenue certainty Unable to find information.

Grid access C-2569 - Mainstream Renewable Power News Release entitled "SMart Wind signs two agreements with the Crown Estate" (August 25, 2011): "obtained grid connection in September 2010."

Site control C-2569 - Mainstream Renewable Power News Release entitled "SMart Wind signs two agreements with the Crown Estate" (August 25, 2011)
"the joint venture between Mainstream Renewable Power and Siemens Project Ventures, today announced the signing of Agreements for Lease (AFLs) with The Crown Estate."
Per C-2570 - Offshore Wind News Release entitled "Crown Estate to Lease 5 Sites Offshore Scotland" (October 28, 2011): "The agreements for leases provide an option for developers to take a seabed lease in the future,"
i.e., it does not provide site control, only an option.

Permits C-2553 - Mainstream Renewable Power Report entitled " Hornsea Wind Farm" (January 2010): Development Consent Order for Hornsea One was not received until 2014, i.e., after the transaction.

Schedule 2 - Detailed Analysis of Dr. Guillet's Early Stage Transactions

Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[4] **Wind Nautilus II**

Transaction date	C-2573 - Offshore–Energy article entitled "PNE WIND Disposes of all Rights to Nautilus II Offshore Wind Project (Germany)" (November 9, 2011).
Amount	C-2574 - Renewables Now News Release entitled "PNE Wind AG sells Nautilus II to SSP Technology" (November 9, 2011): "Financial details concerning the deal were not disclosed."
Total MW	C-2573 - Offshore–Energy article entitled "PNE WIND Disposes of all Rights to Nautilus II Offshore Wind Project (Germany)" (November 9, 2011).
Stake %	C-2573 - Offshore–Energy article entitled "PNE WIND Disposes of all Rights to Nautilus II Offshore Wind Project (Germany)" (November 9, 2011).
Revenue certainty	Unable to find information.
Grid access	Unable to find information.
Site control	Unable to find information.
Permits	C-2573 - Offshore–Energy article entitled "PNE WIND Disposes of all Rights to Nautilus II Offshore Wind Project (Germany)" (November 9, 2011): "still in the planning and approval phase", i.e., not fully permitted.

[5] **NOH1 + NOH2**

Transaction date	C-2567 - STRABAG Press Release entitled "STRABAG takes Majority Stake in Project Companies for Offshore Wind Power Facilities of Norderland/Northern Energy Group" (May 23, 2011).
Amount	C-2562 - STRABAG Societas Eruopaea – Annual Report 2011 (2011), page 135: purchase price of €72.345 million.
Total MW	C-2567 - STRABAG Press Release entitled "STRABAG takes Majority Stake in Project Companies for Offshore Wind Power Facilities of Norderland/Northern Energy Group" (May 23, 2011): "total possible installed capacity of about 4,000 MW."
Stake %	C-2567 - STRABAG Press Release entitled "STRABAG takes Majority Stake in Project Companies for Offshore Wind Power Facilities of Norderland/Northern Energy Group" (May 23, 2011): 51% interest.

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

Per C-2567 - STRABAG Press Release entitled “STRABAG takes Majority Stake in Project Companies for Offshore Wind Power Facilities of Norderland/Northern Energy Group” (May 23, 2011):
"15 offshore wind farm project development companies under the umbrella of two holding companies" and "the projects are currently at various stages in the approval process."

Per Guillet-1, footnote 23: "Information provided by Counsel. This includes Global Tech II and III (395 MW), Albatros (395 MW), OWP West (210 MW) and Seawind I (215 MW) for NOH1 and GAIA I-V (1,740 MW), SeaStorm I-II (680 MW) and SeaWind III-IV (675 MW) for NOH2."

Per C-2611 - Web.archive.org article entitled “Offshore wind farms at the North and Baltic coast in the authorization procedure” (June 2014), as at August 2012 (i.e., after the transaction date), the following wind farms still did not have consent authorized: Global Tech II, Seawind I, GAIA I-V, Seastorm I-II, Seawind III-IV.

OWP West (also Borkum Riffgrund 3) did not have revenue certainty and permits at the transaction date.

Revenue certainty — PPA signed in December 2019 per C-2538 - NS Energy Business article entitled “Borkum Riffgrund 3 Offshore Wind Farm” (Undated).

Permits — Contracts to build were not won until 2017/2018 per C-2538 - NS Energy Business article entitled “Borkum Riffgrund 3 Offshore Wind Farm” (Undated).

[6] **Irish Sea Round 3**

Transaction date — C-2577 - Globe News Wire News Release entitled “Centrica and DONG Energy establish joint venture to codevelop Round 3 Irish Sea Zone” (March 21, 2012).

Amount — C-2577 - Globe News Wire News Release entitled “Centrica and DONG Energy establish joint venture to codevelop Round 3 Irish Sea Zone” (March 21, 2012): "up to £40 million in cash."

Total MW — C-2577 - Globe News Wire News Release entitled “Centrica and DONG Energy establish joint venture to codevelop Round 3 Irish Sea Zone” (March 21, 2012): "potential capacity of 4.2GW."

Stake % — C-2577 - Globe News Wire News Release entitled “Centrica and DONG Energy establish joint venture to codevelop Round 3 Irish Sea Zone” (March 21, 2012).

Per C-2577 - Globe News Wire News Release entitled “Centrica and DONG Energy establish joint venture to codevelop Round 3 Irish Sea Zone” (March 21, 2012):
"a process [was] underway to identify possible areas for individual wind farm projects to take through the consenting process," i.e., revenue mechanism, grid access, site control, and permits have not been obtained as of the transaction date.

Windstream v. Canada
Schedule 2 - Detailed Analysis of Dr. Guillet's Early Stage Transactions
Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[7] **Deutsche Bucht**

Transaction date	C-2578 - Windpower Monthly article entitled “Windreich sells Deutsche Bucht to unnamed “Anglosaxon” investor” (October 24, 2012).
Amount	C-2578 - Windpower Monthly article entitled “Windreich sells Deutsche Bucht to unnamed “Anglosaxon” investor” (October 24, 2012): "three digit million Euro sum"; no other details disclosed.
Total MW	C-2579 - Offshore Wind Press Release entitled “Germany: Windreich Sells ‘Deutsche Bucht’ Offshore Wind Farm” (October 25, 2012).
Stake %	C-2579 - Offshore Wind Press Release entitled “Germany: Windreich Sells ‘Deutsche Bucht’ Offshore Wind Farm” (October 25, 2012).
Revenue certainty	Unable to find information.
Grid access	C-2579 - Offshore Wind Press Release entitled “Germany: Windreich Sells ‘Deutsche Bucht’ Offshore Wind Farm” (October 25, 2012): "unconditional grid connection confirmation."
Site control	Unable to find information.
Permits	C-2578 - Windpower Monthly article entitled “Windreich sells Deutsche Bucht to unnamed “Anglosaxon” investor” (October 24, 2012): "was permitted in 2010."

Schedule 2 - Detailed Analysis of Dr. Guillet's Early Stage Transactions

Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[8] **PNE Portfolio**

Transaction date	R-0682 - Renewables Now article entitled "German PNE Wind buys three offshore projects in North Sea from Bard" (September 18, 2013).
Amount	C-2580 - PNE Wind AG – Annual Report 2013 (2013):
	Paid on the conclusion of the purchase contract: €17 million (page 44).
	Variable purchase installment of €9.04 million (page 131, Note 11. Other provisions).
Total MW	R-0682 - Renewables Now article entitled "German PNE Wind buys three offshore projects in North Sea from Bard" (September 18, 2013).
Stake %	C-2580 - PNE Wind AG – Annual Report 2013 (2013), page 90: 100% participation for PNE WIND Atlantis I-III.
Revenue certainty	Unable to find information.
Grid access	Unable to find information.
Site control	Unable to find information.
Permits	C-2580 - PNE Wind AG – Annual Report 2013 (2013): "they are now in the planning permit process," i.e., not fully permitted at the transaction date.

[9] **OWP West**

Transaction date	C-2630 - 4C Offshore News Release entitled "OWP West Sold!"(January 20, 2016).
Total MW	C-2632 - Offshore Wind article entitled "DONG Energy to Develop Another OWF Project in Germany" (January 22, 2016).
Revenue certainty	PPA signed in December 2019 per C-2538 - NS Energy Business article entitled "Borkum Riffgrund 3 Offshore Wind Farm" (Undated).
Permits	Contracts to build were not won until 2017/2018 per C-2538 - NS Energy Business article entitled "Borkum Riffgrund 3 Offshore Wind Farm" (Undated).

Per C-2632 - Offshore Wind article entitled "DONG Energy to Develop Another OWF Project in Germany" (January 22, 2016): "The company did not disclose any further details."

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				*[B]*	*[C]*	*[D] = [B] / [C]*	*[E]*	*[F]*	*[G] = [E] x [F]*									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	**No**	**No**	No	**No**	na	No	Yes	Yes	**Yes**
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	**No**	**No**	No	na	na	No	na	na	**Yes**
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	**No**	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	**No**	**No**	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	**No**	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	**No**	No	**No**	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	**No**	**No**	No	na	na	No	Yes	na	**Yes**
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	**No**	No	na	**No**	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	**No**	**No**	No	**No**	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	**No**	**No**	No	**No**	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	**No**	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	**No**	Yes	No	**No**	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	**No**	Yes	**Yes**	**No**	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	**No**	Yes	**Yes**	**No**	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	**No**	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	**No**	na	**Yes**	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	**No**	Yes	**Yes**	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	**No**	**No**	**Yes**	**No**	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	**No**	**No**	No	**No**	na	**Yes**	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	**No**	**No**	**Yes**	**No**	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	**No**	**No**	**Yes**	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	**No**	No	**No**	na	**Yes**	na	Yes	No

Notes

[10]	**Global Tech II**	
	Transaction date	C-2629 - Group Vattenfall press release entitled "Vattenfall acquires German wind development project" (2016).
	Amount	C-2629 - Group Vattenfall press release entitled "Vattenfall acquires German wind development project" (2016): "The parties have agreed to not disclose the purchase price."
	Total MW	Unable to find information.
	Stake %	Unable to find information.
	Revenue certainty	C-2637 - Energate Messenger News Release entitled "Vattenfall buys Global Tech II" (August 10, 2016): "Vattenfall must bid for remuneration and grid connection in the next few years."
	Grid access	C-2637 - Energate Messenger News Release entitled "Vattenfall buys Global Tech II" (August 10, 2016): "Vattenfall must bid for remuneration and grid connection in the next few years."
	Site control	Unable to find information.
	Permits	C-2637 - Energate Messenger News Release entitled "Vattenfall buys Global Tech II" (August 10, 2016): "The responsible federal agency, the BSH, has not yet approved the project."

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[11] **Moray Firth**

Transaction date	C-2715 - EDPR press release entitled “EDPR announces the sale of a 23% stake in UK wind offshore project” (July 7, 2017).
Amount	C-2715 - EDPR press release entitled “EDPR announces the sale of a 23% stake in UK wind offshore project” (July 7, 2017).
Total MW	C-2715 - EDPR press release entitled “EDPR announces the sale of a 23% stake in UK wind offshore project” (July 7, 2017).
Stake %	C-2715 - EDPR press release entitled “EDPR announces the sale of a 23% stake in UK wind offshore project” (July 7, 2017).
Revenue certainty	CfD was awarded on September 11, 2017, i.e., after the transaction.
	See C-2115 - EDPR press release entitled "EDP Renováveis and ENGIE consortium is awarded long-term CfD for 950 MW offshore wind project in UK" (September 11, 2017).
Grid access	Unable to find information.
Site control	Unable to find information.
Permits	Unable to find information.

[12] **Star of the South**

Transaction date	C-2719 - 4C Offshore news release entitled “CIP joins Australia’s Star of the South Project” (November 30, 2017).
Total MW	C-2719 - 4C Offshore news release entitled “CIP joins Australia’s Star of the South Project” (November 30, 2017).
Revenue certainty	Per RER-Guillet, Table 5: Revenue regime is "tbd", i.e., no revenue clarity yet.

Unable to find other information.

[13] **Hawaii**

Revenue certainty	Per RER-Guillet, Figure 1: none of the early stage floating wind transactions included in his Table 4 had revenue clarity.

Unable to find other information.

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[14] **Castle Wind**

Total MW	C-2753 - Renews.biz Press Release entitled “Castle Wind signs MoU for 1GW California floater” (August 16, 2019).
Revenue certainty	C-2753 - Renews.biz Press Release entitled “Castle Wind signs MoU for 1GW California floater” (August 16, 2019): MoU to enter into a PPA was signed after the transaction date noted in RER-Guillet, Table 4.
Site control	C-2753 - Renews.biz Press Release entitled “Castle Wind signs MoU for 1GW California floater” (August 16, 2019): "In January 2019, Castle Wind submitted a lease application to BOEM and is waiting for a response," i.e., no site control as of the transaction date.

Unable to find other information.

[15] **Baltyk II & III**

Transaction date	C-2543 - SP Global Profile Report entitled “Statoil Holding Netherlands B.V. acquires 50% of Two off- shore unites of Polenergia SA” (Undated).
Amount	C-2543 - SP Global Profile Report entitled “Statoil Holding Netherlands B.V. acquires 50% of Two off- shore unites of Polenergia SA” (Undated). "Base payment of PLN 94.5 million, plus installments of €5 million (PLN 21.3 million) to be paid by September, 2019, in addition to possible conditional payments"; i.e., total consideration is likely greater than the PLN 94.5+21.3 million used in our calculations.
Total MW	R-0686 - Polenergia Corporate Website: "Offshore wind farms"
Stake %	C-2543 - SP Global Profile Report entitled “Statoil Holding Netherlands B.V. acquires 50% of Two off- shore unites of Polenergia SA” (Undated).
Revenue certainty	C-2781 - Equinor.com News Release entitled “Breakthrough for Equinor in Polish offshore wind” (May 4, 2021).
Grid access	C-2721 - Polenergia.pl article entitled “Polenergia and Statoil intend to construct wind farms in the Baltic Sea” (March 5, 2018): "Polenergia has a signed grid connection agreement."

Unable to find other information.

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Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				*[B]*	*[C]*	*[D] = [B] / [C]*	*[E]*	*[F]*	*[G] = [E] x [F]*									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[16] **Atlantic Shores**

Transaction date	C-2188 - PR Newswire article entitled "US Wind Inc. Agrees to Sell its New Jersey Offshore Lease to EDF Renewables North America" (December 20, 2018).
Amount	C-2188 - PR Newswire article entitled "US Wind Inc. Agrees to Sell its New Jersey Offshore Lease to EDF Renewables North America" (December 20, 2018): "plus a deferred variable payment"; i.e., the consideration is likely higher than the USD215 million used in our calculations.
Total MW	C-2188 - PR Newswire article entitled "US Wind Inc. Agrees to Sell its New Jersey Offshore Lease to EDF Renewables North America" (December 20, 2018).
Stake %	C-2188 - PR Newswire article entitled "US Wind Inc. Agrees to Sell its New Jersey Offshore Lease to EDF Renewables North America" (December 20, 2018).
Revenue certainty	C-2188 - PR Newswire article entitled "US Wind Inc. Agrees to Sell its New Jersey Offshore Lease to EDF Renewables North America" (December 20, 2018): this is a lease area transaction; i.e., no revenue clarity, grid access or permits.
Grid access	C-2188 - PR Newswire article entitled "US Wind Inc. Agrees to Sell its New Jersey Offshore Lease to EDF Renewables North America" (December 20, 2018): this is a lease area transaction; i.e., no revenue clarity, grid access or permits.
Site control	C-2188 - PR Newswire article entitled "US Wind Inc. Agrees to Sell its New Jersey Offshore Lease to EDF Renewables North America": they currently hold a lease area within the New Jersey Wind Energy Area.
Permits	C-2188 - PR Newswire article entitled "US Wind Inc. Agrees to Sell its New Jersey Offshore Lease to EDF Renewables North America" (December 20, 2018): this is a lease area transaction; i.e., no revenue clarity, grid access or permits.

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[17] **Orsted US assets**

Transaction date — C-2209 - Orsted press release entitled "Orsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Amount — C-2209 - Orsted press release entitled "Orsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).
As discussed in CER-Secretariat-2, section 5.C.VI, we do not agree with Dr. Guillet's method of allocating 50% of the transaction value to the early stage assets;
however, we have retained this methodology here for recalculation purposes only.

225,000,000	Consideration USD
50%	Acquired stake
112,500,000	Consideration allocated to early stage assets

Total MW — C-2208 - Eversource and Orsted press release entitled "Ørsted and Eversource Enter 50-50 Partnership Agreement on Key Offshore Wind Assets in the Northeast" (February 8, 2019):
"Bay State Wind and the Deepwater Wind lease sites jointly owned by Eversource and Ørsted could eventually host at least 4,000 megawatts of offshore wind."

Stake % — C-2209 - "Ørsted press release entitled "Orsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).

Revenue certainty — C-2209 - "Ørsted press release entitled "Orsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).
lease area portion of transaction has no revenue clarity, grid access, or permits.

Grid access — C-2209 - "Ørsted press release entitled "Orsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).
lease area portion of transaction has no revenue clarity, grid access, or permits.

Site control — C-2209 - "Ørsted press release entitled "Orsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).
lease area portion of transaction; therefore, they have site control.

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

Permits — C-2209 - "Ørsted press release entitled "Orsted divests 50% of South Fork, Revolution Wind and two New England offshore wind lease areas to Eversource" (February 8, 2019).
lease area portion of transaction has no revenue clarity, grid access, or permits.

[18] **KFWind**

Transaction date — R-0688 - Aker Solutions press release entitled "Aker Solutions and EDP Renewables to Develop Floating Wind Farm in Ulsan, South Korea" (October 18, 2019).

Amount — R-0688 - Aker Solutions press release entitled "Aker Solutions and EDP Renewables to Develop Floating Wind Farm in Ulsan, South Korea" (October 18, 2019):
"The parties agreed to not disclose the value of the transactions."

Total MW — R-0688 - Aker Solutions press release entitled "Aker Solutions and EDP Renewables to Develop Floating Wind Farm in Ulsan, South Korea" (October 18, 2019).

Unable to find other information.

[19] **Blue Gem**

Transaction date — R-0689 - Recharge news article entitled "Oil giant Total dives into offshore wind with 'world's biggest' floating array" (March 18, 2020).

Amount — R-0690 - Reuters news article entitled "Oil major Total buys 80% stake in Erebus floating offshore wind project": "did not disclose the value of the deal."

Total MW — R-0689 - Recharge news article entitled "Oil giant Total dives into offshore wind with 'world's biggest' floating array" (March 18, 2020).

Stake % — R-0690 - Reuters news article entitled "Oil major Total buys 80% stake in Erebus floating offshore wind project": "did not disclose the value of the deal."

Revenue certainty — Per RER-Guillet, Table 5: Revenue regime is "tbd", i.e., no revenue clarity yet.

Unable to find other information.

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
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[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[20] **US Wind**

Transaction date	R-0691 - Evwind news article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc.".
Amount	R-0691 - Evwind news article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc.": "committed to invest through convertible debt and equity up to $265 million"; i.e., this does not seem to be a purchase price.
Total MW	R-0691 - Evwind news article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc.": "an area that is sufficient to install an estimated 1.3GW" less the 270 MW that had revenue clarity per Schedule 1 (Maryland Bay).
Stake %	C-2770 - Power Technology article entitled "Apollo Funds to acquire stake in US Wind to fund offshore project" (August 17, 2020): "Neither company has revealed what percentage Apollo will take."
Revenue certainty	R-0691 - Evwind news article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc.": lease area portion of the transaction; i.e., no revenue certainty, grid access, or permits.
Grid access	R-0691 - Evwind news article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc.": lease area portion of the transaction; i.e., no revenue certainty, grid access, or permits.
Site control	R-0691 - Evwind news article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc.": "Baltimore, Maryland-based US Wind controls the Maryland Wind Energy Area under a Bureau of Ocean Energy Management ("BOEM") lease of approximately 80,000 acres."
Permits	R-0691 - Evwind news article entitled "Apollo Infrastructure Funds Announce Strategic Investment in US Offshore Wind Developer US Wind Inc.": lease area portion of the transaction; i.e., no revenue certainty, grid access, or permits.

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[21] **Hannibal**

Transaction date C-2775 - Offshore Wind article entitled “CIP Invests in 250 MW Floating Wind Farm in Italy” (December 18, 2020).

Total MW C-2775 - Offshore Wind article entitled “CIP Invests in 250 MW Floating Wind Farm in Italy” (December 18, 2020).

Revenue certainty Per RER-Guillet, Table 5: Revenue regime is "tbd", i.e., no revenue clarity yet.

Unable to find other information.

[22] **Aqua Ventus**

Transaction date R-0692 - Recharge news article entitled "Global energy heavyweights buy into US' flagship floating wind power pilot" (August 5, 2020).

Unable to find other information.

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		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[23] **Empire+Beacon**

Transaction date: C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020).

Amount: C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020).
As discussed in CER-Secretariat-2, section 5.C.VI, we do not agree with Dr. Guillet's method of allocating 50% of the transaction value to the early stage assets; however, we have retained this methodology here for recalculation purposes only.

1,100,000,000	Consideration USD
50%	Acquired stake
550,000,000	Consideration allocated to early stage assets

Total MW: C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020):
4.4GW total potential capacity less 816MW with revenue certainty.

Stake %: C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020).

Revenue certainty: C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020): for the lease portion of the transaction only.

Grid access: C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020): for the lease portion of the transaction only.

Site control: C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020):
"Equinor holds a 100% interest in both the Empire Wind lease ... and the Beacon Wind lease."

Permits: C-2318 - Equinor press release entitled "Equinor partners with BP in US offshore wind to capture value and create platform for growth" (September 10, 2020): for the lease portion of the transaction only.

[24] Translated using the EUR:CAD foreign exchange rate as at the transaction date.

[25] Daily foreign exchange rate as at the transaction date, per Capital IQ.

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Amounts in EUR millions unless otherwise noted

		Multiple (EUR million / MW)			Inputs to Multiples Calculation								Critiques								
	Project	Guillet-1	Secretariat-2 (€)	Secretariat-2 (CAD$)	Transaction Date	Original Currency	Amount	FX Rate at Transaction Date	Amount (€ million)	Total MW	Stake %	Transacted MW	Information publicly available	In relevant period	Floating wind	Revenue certainty	Dr. Guillet considers contingent consideration	Unsupported allocation (50%)	Grid access	Site control	Permits
			[A] = [D] / [G]				[B]	[C]	[D] = [B] / [C]	[E]	[F]	[G] = [E] x [F]									
Note				[24]				[25]					[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]	[26]
[1]	Sheringham Shoal	0.10	na	na	1-Apr-09	na	na	na	na	315	50%	158	No	No	No	No	na	No	Yes	Yes	Yes
[2]	Nôrdlicher Grund	0.10	na	na	1-Aug-11	na	na	na	na	320	na	na	No	No	No	na	na	No	na	na	Yes
[3]	Hornsea Subzone	0.04	0.05	0.07	16-Dec-11	GBP	15	0.84	18	1,000	33%	333	Yes	No	No	na	na	No	Yes	na	No
[4]	Wind Nautilus II	0.10	na	na	9-Nov-11	na	na	na	na	560	100%	560	No	No	No	na	na	No	na	na	na
[5]	NOH1 + NOH2	0.05	0.04	0.05	23-May-11	EUR	72	1.00	72	4,000	51%	2,040	Yes	No	No	na	na	No	na	na	na
[6]	Irish Sea Round 3	0.02	0.02	0.03	21-Mar-12	GBP	40	0.83	48	4,200	50%	2,100	Yes	No	No	No	Yes	No	No	No	No
[7]	Deutsche Bucht	0.10	na	na	24-Oct-12	na	na	na	na	210	100%	210	No	No	No	na	na	No	Yes	na	Yes
[8]	PNE Portfolio	0.01	0.02	0.03	18-Sep-13	EUR	26	1.00	26	1,200	100%	1,200	Yes	No	No	na	No	No	na	na	No
[9]	OWP West	0.05	na	na	16-Dec-15	na	na	na	na	205	100%	205	No	No	No	No	na	No	na	na	No
[10]	Global Tech II	0.05	na	na	5-Aug-16	na	na	na	na	na	na	na	No	No	No	No	na	No	No	na	No
[11]	Moray Firth	0.09	0.09	0.14	7-Jul-17	GBP	21	0.88	24	1,116	23%	257	Yes	Yes	No	No	na	No	na	na	na
[12]	Star of the South	0.05	na	na	30-Nov-17	na	na	na	na	2,000	na	na	No	Yes	No	No	na	No	na	na	na
[13]	Hawaii	0.02	na	na	na	na	na	na	na	na	na	na	No	Yes	Yes	No	na	No	na	na	na
[14]	Castle Wind	0.02	na	na	na	na	na	na	na	1,000	na	na	No	Yes	Yes	No	na	No	na	No	na
[15]	Baltyk II & III	0.07	0.04	0.06	5-Mar-18	PLN	116	4.19	28	1,440	50%	720	Yes	Yes	No	na	Yes	No	Yes	na	na
[16]	Atlantic Shores	0.10	0.08	0.12	20-Dec-18	USD	215	1.14	188	2,500	100%	2,500	Yes	Yes	No	No	Yes	No	No	Yes	No
[17]	Orsted US assets	0.05	0.06	0.09	8-Feb-19	USD	113	1.1325	99	3,166	50%	1,583	Yes	Yes	No	No	na	Yes	No	Yes	No
[18]	KFWind	0.05	na	na	18-Oct-19	na	na	na	na	500	na	na	No	Yes	Yes	na	na	No	na	na	na
[19]	Blue Gem	0.05	na	na	18-Mar-20	na	na	na	na	96	80%	77	No	No	Yes	No	na	No	na	na	na
[20]	US Wind	0.15	na	na	14-Aug-20	USD	265	1.18	224	1,300	na	na	No	No	No	No	na	Yes	No	Yes	No
[21]	Hannibal	0.05	na	na	18-Dec-20	na	na	na	na	250	na	na	No	No	Yes	No	na	No	na	na	na
[22]	Aqua Ventus	0.01	na	na	5-Aug-20	na	na	na	na	na	na	na	No	No	Yes	na	na	No	na	na	na
[23]	Empire+Beacon	0.15	0.26	0.40	10-Sep-20	USD	550	1.19	463	3,584	50%	1,792	Yes	No	No	No	na	Yes	na	Yes	No

Notes

[26]	Our analysis of Dr. Guillet's early stage development transactions include the following:	
	Information publicly available	whether sufficient information was publicly available to recalculate and confirm his multiples
	In relevant period	whether the transaction was within the relevant period, i.e. took place within 3 years prior the Valuation Date
	Floating wind	whether the transaction involved a floating wind farm, which is not comparable to the Project (per Dr. Guillet's Table 4)
	Revenue certainty	whether the transaction involved a wind farm with revenue certainty similar to the Project
	Dr. Guillet considers contingent considera	whether Dr. Guillet considered contingent consideration in his calculations
		na = information was not available / there was no contingent consideration to consider
		Yes = there was contingent consideration and Dr. Guillet considered it in his calculations
		No = there was contingent consideration, however, Dr. Guillet excluded it from his calculations
	Unsupported allocation	whether Dr. Guillet allocated the transaction value between the early and late stage projects using an unsupported method (per RER-Guillet, Table 4, where he denotes with "*")
	Grid access	whether the transacted projects had grid access as of the transaction date
	Site control	whether the transacted projects had site control as of the transaction date
	Permits	whether the transacted projects were fully permitted as of the transaction date

	GUILLET-1 - TABLE 3 - UK ROUND 3 PROJECTS				SECRETARIAT CRITERIA			OTHER ANALYSES				
	Round 3 projects	Size (MW)	Status (Green Giraffe Report)	Status (end 2020) Secretariat	Comparable Location	Revenue Clarity (RC) obtained in relevant period	RC obtained before Permits	Included in RER-Guillet, Table 3	UK Round 3	STW: Site Control	*STW: Exclusivity Agreement*	*STW: Signed Agreement for Lease*
Note					***[13]***	***[14]***	***[14]***		***[15]***	***[16]***	***[17]***	***[18]***
	Moray Firth	1,300	Consented but no CfD	950 MW under construction	Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
	Firth of Forth	3,500	Under development	1,075 MW under construction	Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - not obtained in relevant period	N - no RC	Y	Y		na	na
[1]	**Dogger Bank**	7,200	First 4,800 MW consented, but no CfD yet	3,600 MW fully permitted Dogger Bank A & B (2,400 MW) under construction	Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na
[2]	**Hornsea**	4,000	First 1,200 MW consented and with CfD	Hornsea 1: 1,200 MW operating Hornsea 2: 1,400 MW under construction Hornsea 3: 2,400 MW consented	Y - Europe	Y	Y - RC before Permit	Y	Y		na	na
					Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na
	East Anglia	7,200	First 700 MW consented and with CfD	714 MW operational 1,400 MW consented	Y - Europe	Y	N - RC after Permit	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na
					Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
	Rampion	600	400 MW project under construction	400 MW operational	Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	Y		na	na
[3]	**Navitus Bay**	900	Consent rejected		Y - Europe	N - no RC	N - no RC	Y	Y		na	na
[4]	**Atlantic Array**		Project abandoned		Y - Europe	N - no RC	N - no RC	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na

Note	GUILLET-1 - TABLE 3 - UK ROUND 3 PROJECTS				C-1913 - 4C DATABASE (or other source)							
	Round 3 projects	Size (MW)	Status (Green Giraffe Report)	Status (end 2020) Secretariat	Windfarm ID	Name	Size (MW)	Status	Revenue Clarity (Date secured)	Permits (Consent authorized)	Financial Close	Operation Start (Full Commissioning)
					[19]	[20]	[21]	[22]	[23]	[24]	[25]	[26]
	Moray Firth	1,300	Consented but no CfD	950 MW under construction	UK40	Moray East	950	Fully Commissioned	11-Sep-17	19-Mar-14	06-Dec-18	05-Apr-22
					UK77	Moray West	950	Under Construction	09-Jun-22	14-Jun-19	22-Apr-23	na
	Firth of Forth	3,500	Under development	1,075 MW under construction	UK44	Seagreen	1,075	Under Construction	20-Sep-19	10-Oct-14	03-Jun-20	na
					UK4P	Seagreen Extension	360	Consent Authorised	na	01-Dec-21	na	na
[1]	Dogger Bank	7,200	First 4,800 MW consented, but no CfD yet	3,600 MW fully permitted Dogger Bank A & B (2,400 MW) under construction	UK80	Dogger Bank A	1,200	Under Construction	20-Sep-19	17-Feb-15	26-Nov-20	na
					UK0V	Dogger Bank B	1,200	Under Construction	20-Sep-19	17-Feb-15	26-Nov-20	na
					UK1F	Dogger Bank C	1,200	Under Construction	20-Sep-19	05-Aug-15	02-Dec-21	na
					UK1G	Sofia	1,400	Under Construction	20-Sep-19	05-Aug-15	24-Mar-21	na
					UK1H	Dogger Bank - Teesside C	1,200	Cancelled	na	na	na	na
					UK1I	Dogger Bank - Teesside D	1,200	Cancelled	na	na	na	na
					UK43	Dogger Bank Tranche D	2,400	Cancelled	na	na	na	na
[2]	Hornsea	4,000	First 1,200 MW consented and with CfD	Hornsea 1: 1,200 MW operating Hornsea 2: 1,400 MW under construction Hornsea 3: 2,400 MW consented	UK81	Hornsea Project One	1,218	Fully Commissioned	23-Apr-14	10-Dec-14	03-Feb-16	31-Dec-19
					UK1U	Hornsea Project Two	1,386	Fully Commissioned	11-Sep-17	16-Aug-16	11-Sep-17	31-Aug-22
					UK1K	Hornsea Project Three	2,400	Consent Authorised	07-Jul-22	31-Dec-20	na	na
					UK1J	Hornsea Project Four	1,000	Concept/Early Planning	na	na	na	na
	East Anglia	7,200	First 700 MW consented and with CfD	714 MW operational 1,400 MW consented	UK64	East Anglia ONE	714	Fully Commissioned	26-Feb-15	17-Jun-14	24-Feb-16	27-Jul-20
					UK2Q	East Anglia Hub - ONE North	800	Consent Authorised	na	31-Mar-22	na	na
					UK39	East Anglia Hub - TWO	900	Consent Authorised	na	31-Mar-22	na	na
					UK66	East Anglia Hub - THREE	1,400	Consent Authorised	07-Jul-22	07-Aug-17	na	na
	Rampion	600	400 MW project under construction	400 MW operational	UK36	Rampion	400	Fully Commissioned	26-Nov-17	16-Jul-14	18-May-15	30-Nov-18
[3]	Navitus Bay	900	Consent rejected		UK41	Navitus Bay Wind Park	970	Cancelled	na	Consent rejected	na	na
[4]	Atlantic Array		Project abandoned		UK42	Atlantic Array Phase One	400	Cancelled	na	na	na	na
					UK1L	Atlantic Array Phase Two	400	Cancelled	na	na	na	na
					UK1M	Atlantic Array Phase Three	400	Cancelled	na	na	na	na

	GUILLET-1 - TABLE 3 - UK ROUND 3 PROJECTS				SECRETARIAT CRITERIA			OTHER ANALYSES				
	Round 3 projects	Size (MW)	Status (Green Giraffe Report)	Status (end 2020) Secretariat	Comparable Location	Revenue Clarity (RC) obtained in relevant period	RC obtained before Permits	Included in RER-Guillet, Table 3	UK Round 3	STW: Site Control	*STW: Exclusivity Agreement*	*STW: Signed Agreement for Lease*
Note					*[13]*	*[14]*	*[14]*		*[15]*	*[16]*	*[17]*	*[18]*
[5]	Celtic Array		Project abandoned		Y - Europe	N - no RC	N - no RC	Y	Y		na	na
					Y - Europe	N - no RC	N - no RC	Y	Y		na	na
	Inch Cape	1,000	Consented but no CfD	1,000 MW fully permitted	Y - Europe	N - not obtained in relevant period	N - RC after Permit	Y	N - Scottish Territorial Waters 1	Y	Y	Y
	Neart na Gaoithe	450	Consented and with CfD, not contracted/financed yet	450 MW under construction	Y - Europe	Y	N - RC after Permit	Y	N - Scottish Territorial Waters 1	Y	Y	Y
[6]	Islay		No active development by lease bolder (SSE)		Y - Europe	N - no RC	N - no RC	Y	N - Scottish Territorial Waters 1	Y	Y	Y
[7]	Solway Firth		Deemed unsuitable for development		Y - Europe	N - no RC	N - no RC	Y	N - Scottish Territorial Waters 1	N - Scottish Ministers deemed site unsuitable	Y	N
[7]	Wigtown Bay		Deemed unsuitable for development		Y - Europe	N - no RC	N - no RC	Y	N - Scottish Territorial Waters 1	N - Scottish Ministers deemed site unsuitable	Y	N
[8]	Kintyre		Cancelled (proximity to local communities and airport)		Y - Europe	N - no RC	N - no RC	Y	N - Scottish Territorial Waters 1	N - withdrawn by developer before site control	Y	N
[9]	Forth Array		Cancelled by developer (Fred. Olsen)		Y - Europe	N - no RC	N - no RC	Y	N - Scottish Territorial Waters 1	N - withdrawn by developer before site control	Y	N
[10]	Bell Rock		Cancelled due to radar services in the area		Y - Europe	N - no RC	N - no RC	Y	N - Scottish Territorial Waters 1	N - withdrawn by developer before site control	Y	N
[11]	Argyll Array		Cancelled (ground conditions / presence of basking sharks)		Y - Europe	N - no RC	N - no RC	Y	N - Scottish Territorial Waters 1	Y	Y	Y
[12]	Beatrice	750	750 MW consented of which 664 MW with CfD	588 MW operational	Y - Europe	Y	N - RC after Permit	N	N - Scottish Territorial Waters 1	Y	Y	Y

	GUILLET-1 - TABLE 3 - UK ROUND 3 PROJECTS				C-1913 - 4C DATABASE (or other source)							
	Round 3 projects	**Size (MW)**	**Status (Green Giraffe Report)**	**Status (end 2020) Secretariat**	**Windfarm ID**	**Name**	**Size (MW)**	**Status**	**Revenue Clarity (Date secured)**	**Permits (Consent authorized)**	**Financial Close**	**Operation Start (Full Commissioning)**
Note					*[19]*	*[20]*	*[21]*	*[22]*	*[23]*	*[24]*	*[25]*	*[26]*
[5]	**Celtic Array**		Project abandoned		UK38	Celtic Array North East Potential Development Area	1,000	Cancelled	na	na	na	na
					UK1R	Celtic Array South West Potential Development Area	1,000	Cancelled	na	na	na	na
	Inch Cape	1,000	Consented but no CfD	1,000 MW fully permitted	UK54	Inch Cape	1,000	Consent Authorised	07-Jul-22	10-Oct-14	na	na
	Neart na Gaoithe	450	Consented and with CfD, not contracted/financed yet	450 MW under construction	UK56	Neart na Gaoithe	448	Under Construction	26-Feb-15	10-Oct-14	28-Nov-19	na
[6]	**Islay**		No active development by lease bolder (SSE)		UK51	Islay	690	Cancelled	na	na	na	na
[7]	**Solway Firth**		Deemed unsuitable for development		UK48	Solway Firth	300	Cancelled	na	na	na	na
[7]	**Wigtown Bay**		Deemed unsuitable for development		UK49	Wigtown Bay	280	Cancelled	na	na	na	na
[8]	**Kintyre**		Cancelled (proximity to local communities and airport)		UK50	Kintyre	378	Cancelled	na	na	na	na
[9]	**Forth Array**		Cancelled by developer (Fred. Olsen)		UK57	Forth Array	415	Cancelled	na	na	na	na
[10]	**Bell Rock**		Cancelled due to radar services in the area		UK55	Bell Rock	700	Cancelled	na	na	na	na
[11]	**Argyll Array**		Cancelled (ground conditions / presence of basking sharks)		UK52	Argyll Array	1,800	Cancelled	na	na	na	na
[12]	**Beatrice**	750	750 MW consented of which 664 MW with CfD	588 MW operational	UK53	Beatrice	588	Fully Commissioned	23-Apr-14	19-Mar-14	23-May-16	31-May-19

Notes

1 Dogger Bank A & B reached FID on November 27, 2020; therefore, its status at the end of 2020 should read "under construction."
Source: C-2772 - Dogger Bank Press Release entitled "Dogger Bank Wind Farm A and B reaches financial close" (November 26, 2020). Also see C-1913 - 4C Comparables (Excel), tab 'Database', column 'FinancialClose'.

2 Hornsea 3 was consented on December 31, 2020. Source: C-2776 - Press Release entitled "Hornsea Project Three Offshore Wind Farm given development consent" (December 31, 2020).
Also see C-1913 - 4C Comparables (Excel), tab 'Database', column 'ConsentAuthorised'.

3 Navitus Bay consent was rejected due to impact on the seascape/landscape, World Heritage site, among other things.
Source: C-2627 - Letter from the Department of Energy & Climate Change to Stuart Grant (Project Director, Navitus Bay Development Limited) (September 11, 2015).

4 Atlantic Array was abandoned by its developer due to technical challenges including deeper waters and adverse seabed conditions.
Source: C-2588 - RWE.com press release entitled "RWE stops development on Atlantic Array due to technical challenges making the project uneconomic at current time" (November 26, 2013).

5 Celtic Array abandoned by developers due to challenging ground conditions. Source: C-2616 - The Crown Estate News Release entitled "Crown Estate agrees Celtic Array's decision to cease offshore wind development" (July 31, 2014).

6 Islay abandoned by developer due to company restructuring. Source: C-2594 - Imeche.org news article entitled "SSE axes planned offshore wind farms" (March 26, 2014).

7 Scottish Ministers deemed Solway Firth and Wigtown Bay sites as unsuitable for the development of offshore wind.
Source: C-2563 - Marine Scotland Part A – The Plan entitled "A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters" (March 2011), page 41.

8 The developer withdrew from the Kintyre site before site control was confirmed.
Source: C-2563 - Marine Scotland Part A – The Plan entitled "A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters" (March 2011), page 39.

9 Forth Array abandoned by its developer before site control was confirmed, citing it wanted to focus on its onshore business.
Source: C-2561 - Windpower Monthly News Release entitled "FOR pulls out of Forth Array offshore project" (November 22, 2010).

10 The developer and Crown Estate Commissioners withdrew from the Bell Rock site before site control was confirmed.
Source: C-2563 - Marine Scotland Part A – The Plan entitled "A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters" (March 2011), page 31.

11 Argyll Array abandoned by developer due to unsuitable ground and wave conditions and presence of protected sharks.
Source: C-2539 - Reuters News Release entitled "Scottish Power becomes third firm to scrap UK offshore wind farm" (Undated).

12 The only STW project excluded from RER-Guillet-1, Table 3.
Status (Green Giraffe Report):
Consent: C-2593 - Letter from Marine Scotland to Mr. Colin Palmer (March 19, 2014).
CfD: C-2596 - Gov.uk News Release entitled "Government unveils eight major new renewables projects, supporting 8,500 green jobs" (April 23, 2014).

13 Per C-1913 - 4C Comparables, tab 'Database', column BI 'Georegion'.

14 Secretariat Criteria for Risk Adjustment Factor:
i. Geography: We selected projects located in Asia, Europe, and North America;
ii. Revenue Clarity: We selected projects which obtained revenue clarity during the period between January 1, 2010, to February 18, 2017 (i.e., had a PPA or other revenue mechanism in place); and,

1-Jan-10	18-Feb-17

iii. Permits: We selected projects which did not have permits at the time that the PPA was obtained.

15 Per C-1913 - 4C Comparables, tab 'Database', column F 'Round'.

16 See notes 6 to 10 above. STW = Scottish Territorial Waters

17 Exclusivity Agreement data from C-2563 - Marine Scotland Part A – The Plan entitled "A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters" (March 2011), page 15:
"The Exclusivity Agreements allow offshore wind energy developers to take the first step towards securing a commercial lease."

18 Signed Agreement for Lease data from C-2570 - Offshore Wind News Release entitled "Crown Estate to Lease 5 Sites Offshore Scotland" (October 28, 2011):
"The agreements for leases provide an option for developers to take a seabed lease in the future."

19 Per C-1913 - 4C Comparables, tab 'Database', column A 'WindfarmId'.

20 Per C-1913 - 4C Comparables, tab 'Database', column B 'Name'.

21 Per C-1913 - 4C Comparables, tab 'Database', column Y 'CapacityMWMax'.
Except for: Firth of Forth R-0719 - SSE plc press release entitled " Seagreen Offshore Wind Farm" (June 3, 2020).

22 Per C-1913 - 4C Comparables, tab 'Database', column E 'WindfarmStatus or based on latest date available in columns R to U.

Notes

23	Per C-1913 - 4C Comparables, tab 'Events', column F 'EventDate' for when each windfarm obtains revenue certainty; i.e., the date where column E 'LifecycleEvent' shows "Planning - Subsidy/PPA Conditionally Secured".		
	Except for:	UK77	C-2793 - Renews.biz News Release entitled “Ocean Winds lands off-take deal for Moray West” (June 9, 2022)
		UK1K	C-2794 - Orsted News Release entitled “Ørsted awarded contract for worlds single biggest offshore wind farm” (July 7, 2022)
		UK66	C-2796 - Scottish Power Renewables News Release entitled “ScottishPower Renewables Delivers a Green Sweep in CfD Auction” (July 7, 2022)
		UK36	C-2727 - Capx.co article entitled “Rampion wind farm is a black hole for taxpayer’s money” (June 6, 2018)
		UK54	C-2795 - Red Rock Power Press Release entitled “Inch Cape offshore Wind Farm Secures CfD” (July 7, 2022)
24	Per C-1913 - 4C Comparables, tab 'Database', column N 'ConsentAuthorised'.		
	Except for:	UK4P	C-2542 - Sea Green 1A News Release entitled “Proposal to connect Scotland’s largest offshore wind farm” (Undated):
			"In December 2021, Scottish Government Ministers consented the Marine Licence application." We have assumed a date of December 1, 2021.
		UK2Q	C-2838 - Decision letter from the Department for Business, Energy & Industrial Strategy to Brian McGrellis of East Anglia ONE North Limited (March 31, 2022), ¶¶ 1.2 and 2.1.
		UK39	C-2838 - Decision letter from the Department for Business, Energy & Industrial Strategy to Brian McGrellis of East Anglia ONE North Limited (March 31, 2022), ¶¶ 1.2 and 2.1.
25	Per C-1913 - 4C Comparables, tab 'Database', column O 'FinancialClose'.		
	Except for:	UK77	C-2820 - Moray West News Release entitled “Moray West Offshore Windfarm reaches Financial Close” (April 22, 2023)
		UK80	C-2774 - SSE News Release entitled “SSE Renewables reaches financial close on first two phases of Dogger Bank Wind Farm” (November 26, 2020)
		UK0V	C-2774 - SSE News Release entitled “SSE Renewables reaches financial close on first two phases of Dogger Bank Wind Farm” (November 26, 2020)
		UK1F	C-2783 - Equinor.com News Release entitled “Equinor and partner reach financial close on the third phase of the world’s biggest offshore wind farm” (December 2, 2021)
		UK1G	C-2778 - Sofia Wind Farm Press Release entitled “Positive financial investment decision for largest offshore wind project in RWE fleet” (March 24, 2021)
26	Per C-1913 - 4C Comparables, tab 'Database', column Q 'FullCommissioning'.		
	Except for:	UK40	C-2792 - Northern – Scot News Release entitled “Moray East windfarm fully operational” (April 5, 2022)
		UK1U	C-2536 - Hornsea Projects article entitled “Hornsea Two offshore wind farm” (Undated)

TAB 2




Expert Report

Prepared for: Windstream
August 8, 2023

Submitted by:
Jason Chee-Aloy
Managing Director
Power Advisory
55 University Ave, Suite 700, P.O. Box 32
Toronto, ON M5J 2H7
www.poweradvisoryllc.com

POWER ADVISORY

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1. EXECUTIVE SUMMARY

Power Advisory LLC (Power Advisory) was previously retained by Torys LLP on behalf of Windstream Wolfe Island Shoals Inc. (WWIS) to provide an expert report commenting on the Independent Electricity System Operator's (IESO's) analysis related to its decision to terminate the Windstream Feed-in-Tariff (FIT) contract. I provided that report (dated October 17, 2018) (the "initial report"). That initial report was provided in the context of litigation between WWIS and the IESO concerning the termination of the Windstream FIT contract. For the reasons set out in my initial report, my conclusion was that the IESO's analysis did not provide a reasonable basis for terminating the Windstream FIT contract.

Subsequently to my initial report, I had been informed by Torys LLP that WWIS' parent company, Windstream LLC (Windstream), had commenced a NAFTA claim against the Government of Canada relating to the termination of the Windstream FIT contract. In that context, Windstream retained me to provide another expert report (dated February 18, 2022) (the "last report") that addressed two issues:

1. To review the assessment and conclusions from my initial report relating to Subsection 2 and Subsection 3 of the IESO's analysis and provide any updates based on events or circumstances that have occurred from October 2018 (date of my initial report) to finalization of my last report; and

2. To provide my opinion on Ontario's electricity supply needs and whether the IESO's projections are accurate during the time of drafting my last report.

Windstream has retained me to provide this third expert report. This report provides updates regarding Ontario's electricity supply needs and IESO's long-term contracting activities relating to Subsection 2, from the time of my last report to drafting this report. My conclusions from my last report remain the same, (summarized below) and, in fact, have since been reinforced.

1.1 My Background

I have been the Managing Director of Power Advisory since 2010. As a professional consultant specializing in electricity sector matters, I work mostly with generators within Ontario's electricity market. I have extensive experience in the areas of contract negotiations, project development, wholesale electricity market design, and resource procurement initiatives relating to the development and operation of electricity generators in Ontario.

From 2005 to 2010, I led the procurement and contracting of nearly all generation projects for the Ontario Power Authority (OPA) (the OPA is now part of the IESO). During that time, I led the contracting for over 15,000 MW of projects, including the renewable generation projects awarded FIT contracts in the 2009 and 2010 timeframe (including the Windstream offshore wind generation project).

From 1999 to 2005, I worked in many areas of wholesale electricity market design for the IESO, including completion of design and draft rules for an Ontario Capacity Market that was not implemented. In part because the Capacity Market was not implemented, the OPA contracted for needed supply. Therefore, I have experience in procuring and contracting generation projects and development of mechanisms within wholesale electricity markets to ensure power system reliability and resource adequacy to address Ontario's electricity supply needs.

I have a Masters of Arts, Economics, degree from York University, and an Honours Bachelor of Arts, Economics Specialist, degree from the University of Toronto. My CV is included in Appendix A.

1.2 Issue #1 – To provide updates based on events or circumstances that have occurred from February 2022 (date of my last report) to present day regarding the assessment and conclusions from my last report relating to Subsection 2 of the IESO's analysis

The IESO's analysis supporting its decision to terminate the Windstream FIT contract was divided into three subsections.

For this report, no updates are required regarding Subsection 1 or Subsection 3; therefore, my conclusions from my last report remain the same.

However, the events and circumstances since my last report further support my conclusions regarding Subsection 2. I provide a high-level description regarding the events and circumstances in the points below.

- Subsection 2 relied on the IESO's plan to move away from long-term contracts towards "market-based approaches" to procuring electricity supply, such as Incremental Capacity Auctions as a basis for terminating the Windstream FIT contract. Not only has the IESO abandoned plans to implement Incremental Capacity Auctions, the IESO has reverted back to using long-term contracts as evident by many long-term term contracts the IESO has recently executed for supply resources (e.g., re-contracting wind and gas-fired generators, contracting for new battery storage and expansion of gas-fired generators) to meet Ontario's electricity supply needs. Further, the Ontario government and the IESO have future plans to continue long-term contracting for additional supply resources, including wind generators.

In summary, my conclusions from my last report relating to Subsection 2 of the IESO's analysis remain accurate and have proven to be substantiated. The events since my last report reinforce my conclusions that the IESO's analysis did not provide an adequate basis for terminating the Windstream FIT contract.

1.3 Issue #2 – To provide updates on my opinion on Ontario's current electricity supply needs and whether the IESO's current projections are accurate

For my last report, I had also been asked to provide my opinions on the accuracy of the IESO's forecasted electricity supply shortfall and therefore the supply needs to address this.

In summary, my conclusions remain that the IESO's current projections likely underestimate Ontario's electricity shortfall and therefore underestimate electricity supply needs. There are likely supply-side future changes that have potential to increase the electricity supply shortfall and therefore the supply needs in Ontario to meet this shortfall. However, in my opinion, the demand-side future changes relating to higher growth in electricity demand will be a more prominent factor as to why the IESO's current Ontario's future electricity supply shortfall and associated supply needs projections are low.

2. UPDATE ON MY PREVIOUS ASSESSMENTS WITH REPECT TO SUBSECTION 2 OF THE IESO'S ANALYSIS: THE IESO'S RELIANCE ON CHANGES TO PROCUREMENT POLICIES

2.1 Introduction

Subsection 2 of the IESO's analysis relied on the IESO's plans to move away from long-term contracts towards "market-based approaches" to procure electricity supply through Incremental Capacity Auctions (i.e., an IESO administered Capacity Market) as a basis for terminating the Windstream FIT contract. In my last report, I reinforced my conclusion from my initial report that the IESO's planned shift towards Incremental Capacity Auctions was not a reasonable basis for terminating the Windstream FIT contract.

The sub-sections below provide updates to reinforce my conclusion.

2.2 The IESO Continues to Project Electricity Supply Shortfalls in Ontario

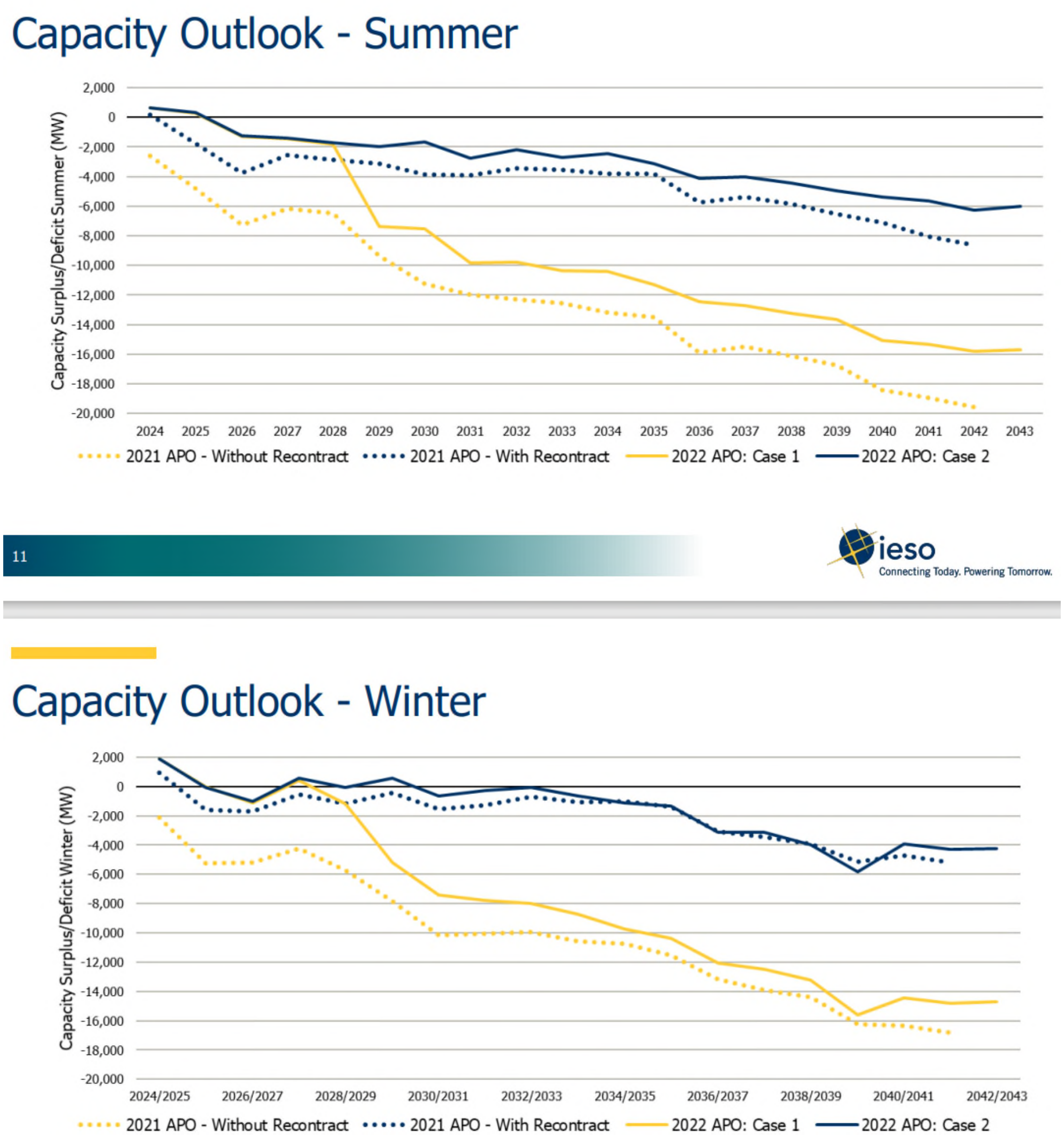
In my last report, I concluded that Ontario requires additional electricity supply in the early to mid-2020s. This conclusion remains true today.

The IESO's last Ontario electricity supply forecasts, included within their 2022 Annual Planning Outlook,[1] still forecasts electricity supply shortfalls in Ontario emerging in the early to mid-2020s, as illustrated in the following figures.[2]

[1] C-2806, IESO Report entitled "Annual Planning Outlook – Ontario's electricity system needs: 2024-2043" (December 2022), IESO's Annual Planning Outlook (December 2022) (i.e., "2022 Annual Planning Outlook") located here in the IESO's website: https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/2022-Annual-Planning-Outlook

[2] C-2813, IESO Report entitled "2022 Annual Planning Outlook" (January 25, 2023), pp. 11-12 (IESO stakeholder engagement presentation) located here on the IESO's website: https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/2022-Annual-Planning-Outlook

Figure 1: IESO 2022 Annual Planning Outlook and 2021 Annual Planning Outlook – Forecasted Electricity Supply Shortfall

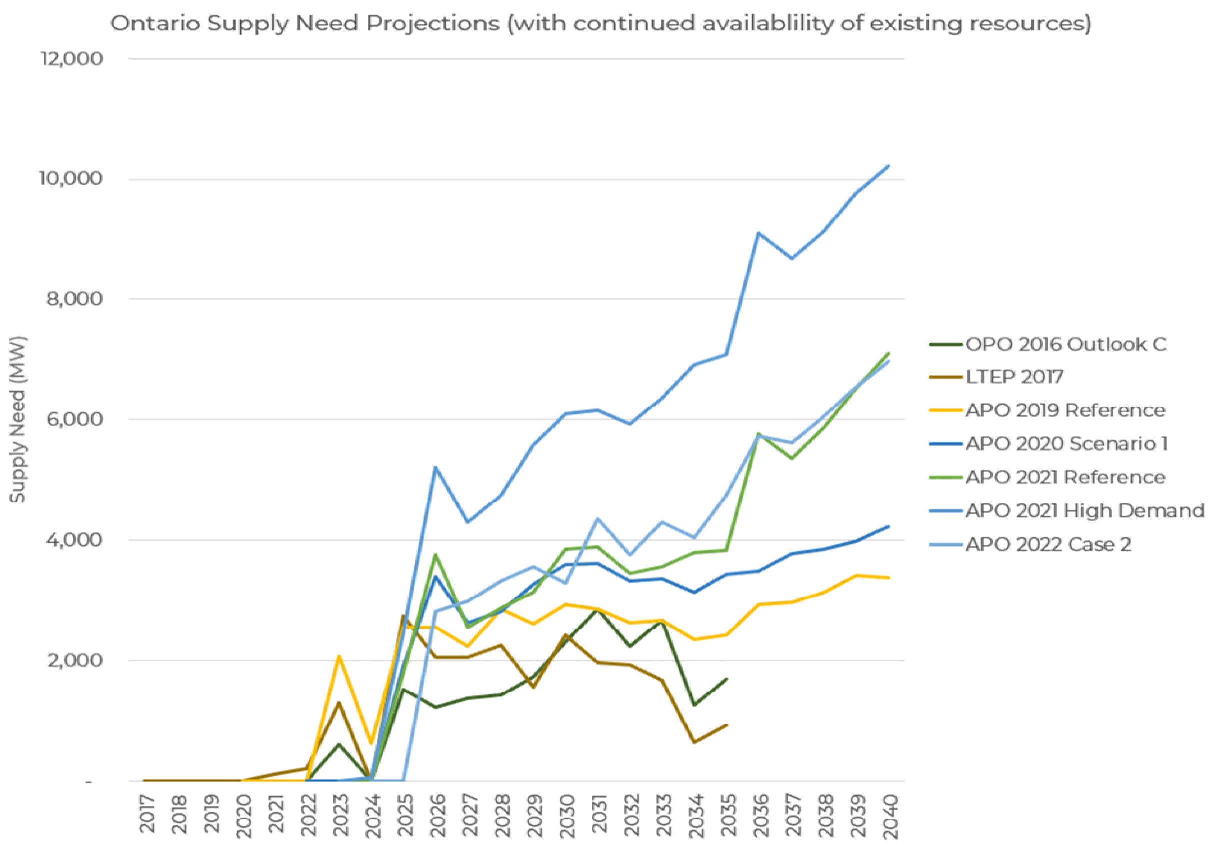


It is clear from the figures above that the IESO, for all scenarios, continues to forecast electricity supply shortfall in Ontario starting in the early to mid-2020s. The forecasted supply needs are greatest within the scenarios that factor in the potential of generators not being available post expiry of their contracts: (1) 2022 APO [Annual Planning Outlook]: Case 1; and (2) 2021 APO Without Recontract.

For the scenarios specified above, this means that the IESO has acknowledged risks to electricity generators retiring post expiry of their contracts[3] and therefore the need to procure these operating generators as well as the need to procure new supply projects through long-term contracts to meet forecasted electricity supply shortfall.

The figure below shows the general trend of growing forecasted supply needs since 2016.[4]

Figure 2: Comparison of Forecasted Electricity Supply Needs – 2022 Annual Planning Outlook, 2021 Annual Planning Outlook, 2020 Annual Planning Outlook, 2017 Long-Term Energy Plan, and 2016 Ontario Planning Outlook



2.3 The IESO has Reverted Back to and has Executed Long-Term Contracts to Procure Electricity Supply in Ontario

In my last report, I explained the reasons why the IESO implemented a Resource Adequacy Framework that defined specific procurement initiatives (e.g., Request for Proposals (RFPs) and associated long-term

[3] Nearly all operating generators in Ontario have contracts with either the IESO or the Ontario Electricity Financial Corporation (OEFC), where most generators are contracted with the IESO and less so with the OEFC

[4] C-2415, IESO Report entitled "Annual Planning Outlook – Ontario's electricity system needs: 2023-2042" (December 2021), supply needs were calculated by Power Advisory based on data from the 2021 Annual Planning Outlook (APO), 2020 APO, 2017 Long-Term Energy Plan (LTEP), and 2016 Ontario Planning Outlook (OPO)

contracts, etc.) to procure electricity supply resources (e.g., generators, etc.) to meet the forecasted electricity supply shortfall in Ontario.

As planned for within their Resource Adequacy Framework, not only has the IESO reverted back to the use of long-term contracts, the IESO has executed long-term contracts with generators and battery storage to help meet Ontario's electricity supply needs.

2.3.1 Recent Long-Term Contracting Initiatives

Since my last report there have been several developments in the IESO's recent long-term contracting initiatives along with applicable direction from the Ontario Minister of Energy:

- On February 3, 2022, the IESO announced "In an effort to secure supply to meet immediate needs in eastern Ontario, the IESO has now completed a transitional contract with Ontario Power Generation [OPG] for the continued operation of the Lennox Generating Station … The new contract runs from October 1, 2022 to May 1, 2029".[5]

- On March 31, 2022, the IESO reported that a new five-year contract with Atlantic Power had been finalized for the Calstock biomass generation station to continue operations and to support a longer-term transition plan for the forestry sector.[6]

- On October 5, 2022, the Minster of Energy directed the IESO to continue engaging with stakeholders and to submit a report back to the Minster including draft program rules and a draft contract to re-contract for operating 'small' hydroelectric generators by no later than December 31, 2022, and for the IESO to analyze and report back to the Minister on the implications of potentially launching the program by July 31, 2023, subject to a potential subsequent Minister's Directive.[7]

- On November 10, 2022, the IESO reported execution of five contracts (four gas-fired generators, one wind generator) totaling approximately 309 MW of unforced capacity[8] supply for the summer months[9] and approximately 380 MW of unforced capacity supply in the winter months[10] for continued operation.[11]

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[5] C-2459, IESO News and Updates entitled "Lennox GS Contract Extended to 2029" (February 3, 2022), https://ieso.ca/en/Sector-Participants/IESO-News/2022/02/Lennox-GS-Contract-Extended-to-2029

[6] IESO update located here on the IESO's website: https://www.ieso.ca/en/Sector-Participants/IESO-News/2022/03/New-Contract-with-Calstock-GS-Finalized

[7] C-2803, Ministerial Directive "IESO asked to develop Small Hydro (< 10MW) Program to re-contract existing facilities" (October 5, 2022) located here on the IESO's website: https://www.ieso.ca/en/Corporate-IESO/Ministerial-Directives

[8] Unforced capacity is an electricity supply metric that proxies the ability of supply capacity to produce energy during time periods of relatively high system needs (e.g., peak demand)

[9] IESO defines summer months to include May 1 to October 31

[10] IESO defines winter months to include November 1 to April 30

[11] C-2804, MT1 RFP Results located here on the IESO's website: https://www.ieso.ca/en/Sector-Participants/Resource-Acquisition-and-Contracts/Medium-Term-RFP

- In their May 16, 2023 Resource Adequacy Update, the IESO stated they had finalized a 10-year contract for the continued operation of the Brighton Beach generation station owned and operated by Atura Power (an OPG owned company), including a 42.5 MW efficiency upgrade which will provide approximately 580 MW of electricity supply.[12] This executed contract was based on the direction the IESO received from the Ontario Minister of Energy on April 27, 2023.[13]

- In its E-LT1 and Same Tech Upgrades Updates document dated June 27, 2023, the IESO stated the following results of their E-LT1 RFP that resulted in offering long-term contracts to the following to be constructed projects:[14]

  - Seven Category 1 battery storage projects totaling approximately 740 MW of summer contract capacity and approximately 740 MW of winter contract capacity;

  - Eight Category 2 battery storage projects totaling approximately 142 MW of summer contract capacity and approximately 142 MW of winter contract capacity; and

  - Two Non-Storage Category projects (all gas-fired generators) totaling approximately 256 summer contract capacity and 295 winter contract capacity.

- In the same E-LT1 and Same Tech Upgrades Updates document, the IESO stated the following results of their Same Technology Upgrades Solicitation with executed long-term contracts for expansion of operating generators:[15]

  - Six gas-fired generator projects totaling approximately 251 MW of upgraded capacity.

- In a letter dated July 10, 2023, the Ontario Minister of Energy directed the IESO is to assess TC Energy's and the Saugeen Ojibway Nation's Ontario pumped storage project (approximately 1,000 MW) and OPG's and Northland Power's Marmora pumped storage project (approximately 400 MW), to ascertain if any of these to be constructed projects would provide positive value to Ontario's power system.[16]

The above initiatives clearly demonstrate that the IESO has reverted back to the use of long-term contracts, as evidenced by the execution of many long-term contracts, to help meet Ontario's forecasted electricity supply shortfall.

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[12] C-2822, "IESO Resource Adequacy Update (May 16, 2023), p.2 located here on the IESO's website: https://www.ieso.ca/en/Sector-Participants/Resource-Acquisition-and-Contracts/Overview

[13] C-2821 "Minister Issues Directive on Brighton Beach" (April 27, 2023) located at the IESO's website here: https://www.ieso.ca/en/Corporate-IESO/Ministerial-Directives

[14] C-2823, E-LT1 and Same Tech Upgrades Updates located here on the IESO's website: https://www.ieso.ca/en/Sector-Participants/Resource-Acquisition-and-Contracts/Long-Term-RFP-and-Expedited-Process

[15] ibid

[16] C-2827 "Minister's Letter on Pumped Storage" (July 10, 2023), located at the IESO's website here: https://www.ieso.ca/en/Corporate-IESO/Ministerial-Directives

2.3.2 Additional Planned Long-Term Contracting Initiatives

Building from the completed E-LT1 RFP and its awarded long-term contracts, the IESO is presently working with stakeholders on the next RFP/contracting initiative called the LT1-RFP.

Based on the IESO's June 29, 2023 stakeholder engagement meeting,[17] the IESO plans to target 2,505 MW of storage projects[18] (1,600 MW) and non-storage projects[19] (905 MW) for execution of long-term contracts during summer 2024 to help meet Ontario's forecasted electricity supply shortfall.

Regarding RFP/contracting initiatives subsequent to LT1-RFP, based on the IESO's March 28, 2023 stakeholder engagement meeting[20] regarding these future procurements, the IESO noted that "IESO has begun to gather feedback and will seek to engage in a more focused manner in coming months" and also noted the following points regarding "Subsequent Procurement Opportunities".

- "The IESO's 2022 Annual Planning Outlook has shown that while system needs emerge mid-decade; they will continue into the 2030s, in the form of both capacity and energy [supply] needs
- Continuous, cadenced acquisition mechanisms [RFPs/contract] will be necessary to continue to meet emerging system needs and lead decarbonization efforts
- Over the coming months, the IESO will begin engagement on subsequent procurement opportunities, including the second Medium-Term and Long-Term RFPs (MT2 RFP and LT2 RFP) with a focus on design considerations
- Through ongoing engagement on the 2023 Annual Acquisition Report (AAR), the IESO has begun to hear a number of key themes from stakeholders, which will drive discussions on subsequent procurement opportunities"

Based on the above IESO points, I believe that, after the LT1-RFP has been concluded in 2024, the IESO will turn to focusing on procuring energy supply via long-term contracts under the LT2-RFP. This will recognize that Ontario's electricity supply shortfall includes the need for additional energy and not just additional capacity. Therefore, this change in focus will better enable new wind generators to be developed under the LT2-RFP because wind generators are more conducive to supplying energy supply versus capacity supply.[21] These points are further substantiated within the IESO's 2022 Annual Planning Outlook. Relative to the forecasted energy supply needs in their 2021 Annual Planning Outlook, the IESO

[17] C-2817 "Long-Term Request for Proposals (LT1 RFP) Procurement Update", p. 15, located here on the IESO's website: https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Long-Term-RFP

[18] Likely to be battery storage

[19] Likely to be gas-fired generators

[20] C-2824 "Long-Term Request for Proposals (LT1 RFP) Procurement Update", pp. 4 and 13, located here on the IESO's website: https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Long-Term-RFP

[21] Capacity typically refers to an electricity supply resource's maximum capability to produce energy. Energy is the actual electricity produced by a supply resource. Because their energy production is variable based on wind availability, the capacity factor of wind generators is relatively lower than other sources of electricity supply (e.g., nuclear generators, etc.). Therefore, capacity supply from wind generators are typically relatively lower than other generators.

has now forecasted greater energy supply needs in their 2022 Annual Outlook along with higher peak energy demand.[22]

The above points further prove that the IESO has reverted back to the use of long-term contracts – they also suggest that the IESO is planning to once again procure wind generators (and solar generators) to help meet Ontario's forecasted electricity supply shortfall.

2.3.3 Ontario Government's Powering Ontario's Growth Plan Calls for Procurement of New Wind Generators

On July 10, 2023, the Ontario government released the Powering Ontario's Growth: Ontario's Plan for a Clean Energy Future ("Powering Ontario's Growth Plan").[23]

Powering Ontario's Growth Plan outlines actions the Ontario government is, and will be, taking to meet increasing demand for electricity supply through the 2030s and 2040s. One of the listed actions in the Powering Ontario's Growth Plan specifies that competitive procurements (i.e., RFPs and associated long-term contracts) will be planned and then administered to procure non-emitting electricity resources including wind, solar, and hydroelectric generation, along with battery storage and biogas generation. The IESO will be reporting back to the Ontario government with the intent of launching the above stated competitive procurements in the 2025 to 2026 timeframe.[24]

In my opinion, based on the statements made in their Powering Ontario's Growth Plan, it is clear that the Ontario government has altered their position on constructing wind generators (and other renewable electricity supply sources such as solar generators) and have plans to enable development of wind generators through future IESO procurement initiatives via RFPs and associated long-term contracts.

My point above is reinforced based on the July 10, 2023 Ontario Minister of Energy's letter[25] to the IESO that directs IESO to "Report back by February 28, 2024 on the proposed approach to potential subsequent procurements to be undertaken by IESO, including the LT2 RFP. The report back should include:

- A review of the role of existing assets [generators] and new non-emitting electricity resources that can be in-service by 2029 including wind, solar, hydroelectric, storage and bioenergy, or when IESO identifies future needs arising."

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[22] C-2813, "2022 Annual Planning Outlook" stakeholder engagement presentation (January 25, 2023), p. 7, located at the IESO's website here: https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/2022-Annual-Planning-Outlook

[23] C-2825, "Powering Ontario's Growth: Ontario's Plan for a Clean Energy Future" is located at the Ontario government's website here: https://www.ontario.ca/files/2023-07/energy-powering-ontarios-growth-report-en-2023-07-07.pdf

[24] See "Powering Ontario's Growth: Ontario's Plan for a Clean Energy Future", p. 61

[25] C-2826, "Minister's Letter on Powering Ontario's Growth" (July 10, 2023), located at the IESO's website here: https://www.ieso.ca/en/Corporate-IESO/Ministerial-Directives

3. MY OPINION ON ONTARIO'S CURRENT ELECTRICITY SUPPLY NEEDS AND WHETHER THE IESO'S CURRENT PROJECTIONS ARE ACCURATE

As in their 2021 Annual Planning Outlook, the IESO's 2022 Annual Planning Outlook continues to forecast electricity supply shortfall, therefore conveying significant need for electricity supply (i.e., continued operation of generators, etc. post expiry of their contracts, and to be constructed new generator projects, etc.).

Consistent with my last report, I continue to believe there are key risks that will likely result in further increases to the electricity supply shortfall and therefore result in additional supply needs beyond those that have been forecasted by the IESO in their 2022 Annual Planning Outlook. As detailed in my last report, I continue to believe there will be on-going risks to the potential retirement of generators post expiry of their contracts. However, I believe the more prominent risk to greater electricity supply shortfall and associated supply needs will be driven by higher growth in electricity demand relative to what the IESO has most recently forecasted. The sub-section below builds on the risk of higher electricity demand growth resulting from electrification based on my assessment of the IESO's 2022 Annual Planning Outlook.

3.1 Higher Electricity Demand Growth Resulting from Electrification

In my last report, I stated that the IESO did not account for broader potential of further electrification across more sectors of Ontario's economy (e.g., heating demand, fuel switching, etc.) within the 2021 Annual Planning Outlook. Therefore, in my opinion, the IESO under-forecasted electricity demand and consequentially under-forecasted future electricity supply shortfall and associated need for electricity supply.

However, as expressed in my last report regarding my expectations that the IESO will more robustly account for electrification across all of Ontario's economy within future initiatives, changes were made in the 2022 Annual Planning Outlook. For example, in their 2022 Annual Planning Outlook, the IESO stated that "Major changes in the demand forecast include developments in societal electrification, including buildings, transportation and industry …",[26] where:

- "Building electrification includes the forecasted impacts from the City of Toronto's Toronto Green Standard, municipal permit requirement and planned increase of newbuilding minimum requirements for energy intensity for 2030.
- Transportation electrification includes the forecasted impacts from the federal government's target for at least 60 per cent of sales of new light-duty vehicles to be zero emissions by 2030. Industrial electrification includes a tally of specific projects, including steel-producer electric arc furnaces, automobile-producer electric vehicle (EV) battery factories and hydrogen electrolysis plants."[27]

Considering that the IESO enhanced the impacts of broader electrification on their electricity demand forecast in their 2022 Annual Planning Outlook, this shows that the IESO had been under-forecasting

[26] C-2806, IESO Report entitled "Annual Planning Outlook – Ontario's electricity system needs: 2024-2043" (December 2022), p. 12 in IESO's 2022 Annual Planning Outlook

[27] ibid

electricity demand in previous forecasts. Therefore, has been under forecasting future electricity supply shortfall and associated the need for electricity supply.

Based on my review of the IESO's 2022 Annual Planning Outlook, it is my belief that the IESO has not specifically accounted for these areas of electrification that would increase the demand forecast and which will causally increase the electricity supply shortfall and associated electricity supply needs:

- Regarding electrification within Ontario's transportation sector, it appears that the IESO has accounted for electricity demand impacts from light-duty electric vehicles (EVs) but not accounted for the potential impacts of some forms of commercial EVs; and
- Other than known plans from industrial electricity customers (e.g., Algoma regarding steel making) to move to on-site electrification, no estimates of other industrial customers' potential to undertake electrification within their production processes.

In my opinion, if the IESO were to include the above points within their electricity demand forecast, it would result in a higher demand forecast which would then have the result of increasing the forecasted electricity supply shortfall and associated electricity supply need.

APPENDIX A. JASON CHEE-ALOY CV

JASON CHEE-ALOY

MANAGING DIRECTOR

POWER ADVISORY

PROFESSIONAL OVERVIEW

Mr. Chee-Aloy is a professional with over 25 years of expertise in electricity and natural gas market analysis, policy development, market design, contract design and negotiations, project development, resource and infrastructure planning, and stakeholder consultation and engagement. He has worked as an energy economist with a strong analytical foundation and understanding of commodity pricing, market design, contract design, industry restructuring, policy development, business strategy, industry governance, and planning and development of electricity infrastructure.

Mr. Chee-Aloy has acted for multiple generator, transmitter, financial institution, utility, and Government clients regarding numerous areas of, but not limited to: market design; contract design; contract negotiation; project development; market analysis; business strategy; power system planning and resource assessments.

Mr. Chee-Aloy joined Power Advisory after being the Director of Generation Procurement at the Ontario Power Authority, where he was responsible for procuring and contracting for over 15,000 MW of generation. Prior to joining the Ontario Power Authority, he worked for the Independent Electricity System Operator (IESO) where he was actively involved with restructuring Ontario's electricity sector by leading key areas of market design and market surveillance.

PROFESSIONAL HISTORY

Power Advisory
Managing Director
2010 to Present

Ontario Power Authority
Director, Generation Procurement
Manager, Generation Procurement
2005 to 2010

Ontario Independent Electricity System Operator
Manager, Resource Adequacy
Senior Analyst, Market Development
Analyst, Market Assessment Unit
1999 to 2005

Ontario Ministry of Energy, Science and Technology
Economist
1997 to 1999

Canadian Enerdata Ltd.
Analyst
1997 to 1999

EDUCATION

York University
Masters of Arts, Economics
1995 to 1996

University of Toronto, St. Michael's College
Honours Bacheler of Arts, Economics Specialist
1990 to 1995

REPRESENTATIVE PROFESSIONAL EXPERIENCE

Generation Project Development and Operations, and Project Acquisition

- Assisted multiple generation clients regarding their participation in the Ontario and Alberta wholesale electricity markets and resolution of contract issues. Work with these generators includes strategy and solutions regarding analysis of impacts to changes to wholesale market rules and analysis of impacts to changes in the market design, including implications on their long-term contracts.
- Assisted multiple generation developers towards commercial operation of their projects under long-term contracts. Work with these developers includes strategy and solutions regarding analysis of permitting and approvals, provincial content requirements, connection requirements, financing and future operations in the wholesale power market to optimize operations and maximize revenues in the wholesale market and under long-term contracts.
- For multiple renewable generation clients, advised and represented their interests towards developing their generation projects, including work in areas dealing with long-term contracts, connection impact assessments, system impact assessments, and financial plans.
- Worked with lenders and financiers providing market intelligence, market forecasts, and strategic advice regarding investment in generation projects.
- Worked with owners of existing generation facilities, equity providers, and developers to value projects for purposes of acquisitions. This work involves assessment of wholesale electricity markets and valuation of specific generation resources.

Wholesale Electricity Market Design and Development

- Acting for multiple generator, energy storage provider, transmission, Local Distribution Companies (LDCs) regarding the IESO's Market Renewal Program, including planned development of Locational Marginal Prices (LMPs), Day-Ahead Market (DAM), Enhanced Real-Time Unit Commitment (ERUC, and Incremental Capacity Auctions (ICAs)
- Acted for the Ontario IESO as the facilitator/consultant for the IESO's Electricity Market Forum. This work involved identification and sequencing the major initiatives and recommendations required to evolve Ontario's electricity sector. The initiatives and recommendations included: review of wholesale spot pricing, costs to customers and cost allocation; review of long-term

contracts to ensure alignment with the wholesale market; review of regulated rate design regarding its effect and integration with the wholesale market; increasing demand-side participation in the wholesale spot market; review and assess the need for new ancillary services in light of Ontario's changing supply mix; review of the two-schedule dispatch system within the wholesale market; and review of the framework for scheduling intertie transactions in the wholesale market

- For gas-fired generator clients, advised how these facilities can meet power system needs within wholesale electricity markets and operate more efficiently given changes fuel supply, utilization of wholesale market programs, and requirements for day-ahead commitment programs
- For transmission clients, advised how new regulated or merchant transmission lines may be developed within various electricity markets along with specific regulatory requirements and policies
- For multiple renewable generation clients, advised and represented their interests regarding the integration of variable (i.e., wind and solar) generation within wholesale electricity markets. The work required intimate and technical knowledge of the operations on wholesale markets and the technical capabilities of generation facilities regarding how generation units are scheduled and dispatched, how prices are set, and the mechanisms for compensation for production of energy output
- For multiple clients, advised on transmission rights within wholesale electricity markets regarding rules and protocols relating to intertie transactions regarding scheduling transactions and associated risks dealing with congestion rents, failed transactions, etc.
- While at the IESO, was Project Manager of Resource Adequacy and developed and delivered high-level design, detailed design, and draft market rules for a centralized forward Capacity Market, and chaired the Long-Term Resource Adequacy Working Group comprising over 20 electricity sector stakeholders
- For the IESO, implemented short-term resource adequacy mechanisms through the Hour-Ahead Dispatchable Load program and Replacement Generation to Support Planned Outages in 2003 and 2004
- Developed and drafted over 50 IESO Market Rule amendments, including applicable quantitative assessments, mainly regarding market surveillance, compliance, reliability, scheduling, dispatch and pricing rules, and settlements, therefore having a very strong understanding and knowledge on how the IESO-Administered Markets operate and in particular how the dispatch and pricing algorithms work
- Developed business processes, developed data requirements, and reviewed applicable Market Rules (e.g., local market power rules) for the Market Assessment Unit

Generation and Transmission Procurement and Contracting

- Acting for the Business Renewables Centre (BRC) Canada by organizing BRC member and non-member commercial and industrial customers towards reaching consensus on a framework to enable renewable energy corporate Power Purchase Agreements (PPAs) in Ontario's electricity market; and working with the BRC and these customers to design such a framework
- Acted for ATCO by designing and administering an Expression of Interest that marketed Alberta-based wind generation and its environmental attributes to multiple prospective commercial and industrial electricity customers towards potential execution of renewable energy corporate PPAs
- Acted for a group of renewable energy suppliers to develop a potential framework to enable renewable energy corporate PPAs in Ontario
- Acted for the Canadian Renewable Energy Association (CanREA) by modeling how transaction of renewable energy corporate PPAs in Ontario can benefit Ontario's power system and provide cost savings to Ontario's electricity customers
- Acted for the Government of Alberta in development and administration of the Solar Procurement

- Acted for multiple gas-fired generators regarding contract amendments resulting from the forthcoming Ontario cap-and-trade system
- Acted for variable generators through market analysis, contract analysis, financial analysis, and led contract negotiations before the Ontario Power Authority and IESO to amend long-term contracts to address potential IESO economic curtailment of energy production from these generators resulting from the integration of these generators into the real-time scheduling and dispatch process within Ontario's wholesale energy market
- Acted for multiple Non-Utility Generator facilities and other generator clients through market analysis, contract analysis, and financial analysis, and successfully led contract negotiations for existing and new generation facilities resulting from the expiration of existing Contracts towards execution of new long-term contracts with the IESO
- Responsible for the delivery of the design, management and execution of all generation procurement processes and contracts for development of electricity supply resources while at the Ontario Power Authority. This included contracting for over 15,000 MW of generation capacity (including some demand-response), including combined cycle gas turbine facilities, simple cycle gas turbine facilities, combined heat and power facilities, waterpower facilities, bio-energy facilities, wind power (on- and off-shore) facilities, solar PV facilities and energy-from-waste facilities ranging in size from under 10 kW to over 900 MW through competitive and standard offer procurements and sole source negotiations. The development of procurement processes and long-term contracts needed to necessarily consider the integration of these generation projects into the wholesale market.
- Managed over 80 staff, developed and successfully implemented North America's first large Feed-in Tariff (FIT) procurement program for renewable electricity supply resources. To date, over 20,000 applications totaling over 18,000 MW from prospective generation projects have been submitted to the Ontario Power Authority, with over 2,500 MW successfully contracted. In addition, chaired the Renewable Energy Supply Integration Team (RESIT) comprising of Ontario agencies and Government. This Team also held responsibility to implementing the FIT Program.
- Chaired the RESIT that delivered recommendations to the Minister of Energy for development of the Green Energy Act and the FIT Program. Delivered a consensus document assessed and recommended changes to Ontario Energy Board (OEB) Transmission and Distribution System Codes, regulations and legislation, in addition to the roles and responsibilities of the Ontario Power Authority, IESO, transmitters, OEB and utilities towards ensuring timely development of renewable generation. Senior staff from the IESO, Ontario Power Authority, Hydro One, OEB and the Ministry of Energy comprised the RESIT while Executives from IESO, Ontario Power Authority, OEB and Hydro One frequently attended these meetings.
- Advised multiple clients regarding transmission development opportunities and power system needs within various electricity markets across North America
- Acted for a U.S. transmission developer and operator regarding the development of a merchant transmission project that will connect Ontario to Pennsylvania through market analysis, regulatory support, business strategy, and contract development support
- Advised the Alberta Electricity System Operator (AESO) regarding development of their present transmission procurement process by researching and reviewing transmission procurement processes from Ontario and Texas
- Advised multiple renewable generation developers regarding forthcoming participation within the AESO's renewable generation procuring and contracting initiatives under the Renewable Electricity Program

Power System Planning and Infrastructure Assessment

- For multiple generator and trade associations, assessed and optimized generation resource options and likely solutions to be developed to meet future power system needs, and developed

business strategies and strategic plans for these clients to execute towards increasing their market share by increasing their development pipeline of projects
- While at the Ontario Power Authority, was a member of the Ontario Power Authority's Integrated Power System Plan (IPSP) Steering Committee that was responsible for the development and review the 20-year IPSP, developed strategy for the regulatory filing and OEB proceeding, was an expert witness for the interfaces between the generation and conservation and demand management (CDM) resource requirements specified within the IPSP and the applicable procurement processes that would be used to contract for these generation and CDM resources

Expert Testimony

- Retailed by Stikeman Elliott LLP on behalf of three Quebec-based hydroelectric generators regarding renegotiation of Power Purchase Agreements (PPAs) with Hydro-Quebec, including development of two expert reports filed within the arbitration proceedings, including expert testimony and cross-examination (2016)
- Before the OEB, began testimony for Ontario Power Authority regarding scope of Procurement Process within OEB proceeding to render decision on Ontario Power Authority's IPSP and Procurement Process – proceeding terminated in late 2008 (2008)
- Before the OEB, for Ontario Power Authority, testified to sections of the Ontario Power Authority Business Plan regarding organization and management of generation procurement and contract management business units (2006)

Electricity Industry Board of Directors Membership and Governance

- National Electricity Roundtable (June 2023 to present)
  - Executive
- Ontario Energy Association (June 2023 to present)
- Canadian Renewable Energy Association (July 2020 to present)
  - Chair, Board of Directors
  - Finance Committee (Board Executive), Human Resources Committee (Board Executive), Strategic Planning Committee, Equity, Diversity and Inclusion Committee, and Membership Committee
- Business Renewables Centre of Canada (October 2019 to present)
  - Chair, Policy Committee
- Canadian Solar Industries Association (November 2018 to July 2020)
  - Vice Chair, Board of Directors
  - Evolution Committee, Human Resources Committee, and Ethics Committee

Speaking Engagements

- Canadian Bar Association, Environmental, Energy and Resources Law Summit, Renewable and Distributed Energy: Legal Updates and Opportunities, Ottawa, May 2023
- Ontario Energy Association, Speaker Series – A Proposal for Clean Energy Corporate Power Purchase Agreements in Ontario, Toronto, April 2023
- Association of Power Producers of Ontario and Ontario Energy Association, Ontario Energy Conference, Toronto, November 2022
- Canadian Renewable Energy Association, Annual Conference - Electricity Transformation Canada, Toronto, October 2022, October 2021
- Energy Disruptors, Unite Energy Summit, Calgary, September 2022

- Association of Power Producers of Ontario / Ontario Energy Association, Navigating to Net Zero, Toronto, September 2022
- Bank of America Securities, April 2022, April 2021, web conference - Canadian Power and Utilities Conference
- Independent Power Producers Society of Alberta, Get to Net, March 2022
- Davies Ward Phillips & Vineberg LLP, Davies Academy, Is Canada's Electricity Sector Ready for a Zero-Carbon Future?, Toronto, January 2022
- Independent Power Producers Society of Alberta, Annual Conference, Banff, November 2021, March 2019 and March 2017
- Association of Power Producers of Ontario, Annual Conference, Toronto, November 2021, December 2020, November 2019, November 2018, November 2017, November 2016, November 2015, November 2014, November 2013, November 2012, November 2011, November 2010, November 2009, November 2008, November 2007, November 2006, November 2003
- Canadian Renewable Energy Association, Annual Conference - Electricity Transformation Canada, Toronto, October 2021
- Ontario Waterpower Association, Annual Conference, Niagara Falls, May 2021, October 2019, October 2018, October 2017, October 2013, October 2013, December 2012, December 2011
- Canadian Bar Association, May 2021, web conference - Environmental, Energy & Resources Law Summit, The Ins and Outs of Climate Change, Carbon and Renewables, State of Play in Renewable and Distributed Energy Across Canada
- Canadian Renewable Energy Association, February 2021, web conference - What's Next for Corporate Power Purchase Agreements and Renewables in Canada?
- Maritimes Energy Association AGM, January 2021, web conference - Canadian Energy Transition
- Electricity Invitational Forum, Cambridge, January 2021, January 2020, January 2019, January 2018, January 2011
- EUCI, web conference - Capacity Markets Pricing and Policy Summit, December 2020
- Canadian Renewable Energy Association, Toronto, November 2020, Canadian Renewable Energy Forum: Wind. Solar. Storage.
- Ontario Energy Association, Toronto, October 2020, Corporate PPAs - Potential Opportunities for Energy Buyers/Sellers in Canada
- Business Renewables Centre Canada, October 2020, web conference - Understanding the Corporate PPA Landscape Across Canada: A Jurisdictional Review
- DeMarco Allen LLP, Strategy Session, October 2020
- Ontario Energy Association, October 2020, web conference - Corporate PPAs: Potential Opportunities for Energy Buyers/Sellers in Canada
- Business Renewables Centre Canada, June 2020, web conference - Outlook for Alberta's Electricity Market Focusing on PPAs
- Canadian Power Finance Conference, Toronto, January 2020, January 2019, January 2018, January 2015, January 2012, January 2011
- Canadian Wind Energy Association, Annual Conference, Calgary, October 2019, October 2018, Toronto, October 2017, October 2016, October 2015
- Ontario Energy Association, Annual Conference, Toronto, September 2019, September 2018, September 2017, September 2016, September 2015, September 2014, September 2013, Niagara Falls, September 2012
- Proximo, Canadian Power and Renewables Exchange, Toronto, June 2019
- Ontario Energy Association, Speaker Series, Toronto, May 2019
- Canadian Wind Energy Association, Spring Forum, Banff, April 2019
- Bank of America Merrill Lynch, 2019 Canadian Utilities Day, New York, April 2019
- AQPER 2019 Symposium, Quebec City, February 2019

- Canadian Solar Industry Association, Solar Ontario, Toronto, October 2018, Ottawa, May 2014, Niagara Falls, May 2013
- Energy Storage Canada, Annual Conference, Toronto, September 2018, September 2017
- Ontario Energy Association, Conversations That Matter, Toronto, June 2018
- Canadian Electricity Association, Transmission and Distribution Council, Calgary, May 2018
- Canadian Electricity Association, Pre-CAMPUT Workshop, Toronto, May 2018
- Electricity Distributors Association, ENERCOM, Toronto, March 2018
- Energy Law Forum, Vancouver, May 2017
- U.S./Canada Cross-Border Power Summit, Boston, April 2016, April 2015
- UBS, Canadian Power Markets, New York, July 2015
- UBS, Canadian Power Markets, Toronto, June 2015
- Aird & Berlis LLP, The Impact of Capacity Market on LDCs, Toronto, May 2015
- Mindfirst Lunch Seminar: Ontario Capacity Auction - Analysis of Feasibility and Criteria for Design Elements, Toronto, May 2015
- Ontario FIT and Renewable Energy Forum, Toronto, March 2015
- Canadian Wind Energy Association Operations & Maintenance Summit, Toronto, February 2015
- Canadian Solar Industry Association, Annual Conference, Toronto, December 2014, December 2013, December 2012, December 2011, December 2010 and December 2009
- EUCI, Canada Energy Storage Summit, Toronto, November 2014
- UBS, Ontario Power Markets, New York, November 2014
- Ontario Power, Examining the Future Structure of Ontario's Electricity Market: Should Ontario Incorporate a Capacity Market or Alternative Structure Framework, Toronto, April 2014
- EUCI, Securing Ontario's Distribution Grid of the Future, Toronto, September 2013
- TD Securities, Canadian Clean Power Forum, Toronto, September 2013
- TREC Education, Toronto, June 2013
- FIT Forum, Toronto, April 2013, April 2012
- Nuclear Symposium, Toronto, May 2012
- TD Securities, The Future of Ontario's Power Sector, Toronto, April 2012
- Ontario Power Perspectives, Toronto, April 2012
- Ontario Energy Association Speaker Series - FIT and the Provincial Budget: What do they mean for Ontario's Electricity Sector, Toronto, April 2012
- Energy Contracts, Calgary, March 2012
- Environmental Law Forum, Cambridge, January 2012
- Capstone Infrastructure Corporation, Investor Day, Toronto, December 2011
- Canadian Projects and Money, Toronto, June 2011
- Ontario's Feed-in Tariff, Toronto, June 2011
- Photon's Solar Electric Utility Conference, San Francisco, February 2011
- Ontario Solar Network, Solar Summit, Toronto, February 2011
- Credit Suisse Alternative Energy Conference, Washington, June 2010
- Transmission and Integrating New Power into the Grid, Calgary, April 2010
- Feed-in Tariff: Another Tool for Meeting RPS, San Francisco, February 2010
- BC Power, Vancouver, January 2010
- Infrastructure Renewal, Toronto, October 2009
- Green Energy Week, Toronto, September 2009
- Ontario Waterpower Association Executive Dialogue, May 2009, May 2008, October 2008
- GasFair and PowerFair, Toronto, April 2008, May 2007, April 2006
- Eastern Canadian Power and Renewables Finance Forum, Toronto, February 2008
- Quebec Forum on Electricity, Montreal, April 2007
- Energy Contracts, Toronto, March 2007, November 2003
- Power On, Toronto, October 2006

- Generation Adequacy in Ontario, Toronto, April 2006, March 2005, April 2004
- Installed Capacity Markets - Designing and Implementing Installed Capacity Markets, Boston, May 2004
- Ontario Electricity Conservation and Supply Task Force, September 2003, July 2003

TAB 3

Windstream Energy Inc.

Wolfe Island Shoals

Offshore Wind Farm

Technical Review of the Expert Report of Dr. Jérôme Guillet on Damages Valuation dated 12 December 2022

14 August 2023

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Glossary

Abbreviation or Term	Definition
Baird	A company that specialises in coastal and river engineering consultancy.
BVG Associates	A consultancy providing strategic advice regarding renewable energy.
Capex	Capital expenditure associated with construction of WIS.
CER-COWI (Opinion of Probable Cost)	Expert Report of COWI North America Inc. Wolfe Islands Shoals – Gravity Based Foundation Opinion of Probable Cost.
CER-4C Offshore-3	Third Expert Report of 4C Offshore Ltd. Wolfe Island Shoals – Review of Capital Costs.
CER-Secretariat	The independent expert report prepared by Chris Milburn, Edward Tobis and Pierre-Antoine Tetard dated 18 February 2022.
CER-Two Dogs (Capex Opex Sensitivity Report)	The expert report prepared by Two Dogs Projects regarding WIS Capex & Opex dated 18 February 2022.
CER-Two Dogs (Wind Turbine Selection Report)	The expert report prepared by Two Dogs Projects regarding WTG selection dated 18 February 2022.
CER-Wood	The expert report prepared by Wood: Wolfe Island Shoals Offshore Wind Farm, Technical Expert Report dated 18 February 2022.
COD	Commercial Operation Date: The date at which all commissioning tests have been passed and the offshore wind farm begins to generate electricity and earn revenue.
COWI	A consultancy with extensive experience in the design, construction and deployment of offshore wind foundations, including GBFs.
CREC	Canadian Renewable Energy Corporation.
CFD	Contract for Difference. A UK support mechanism that guarantees the price paid for electricity generated by renewable energy projects.
Financial Close (FC)	The date at which all Project and financing agreements have been signed, allowing Windstream to start drawing down the financing to progress construction of the Project.
FID	Final Investment Decision.
FIT Contract	The feed-in tariff contract awarded to Windstream by OPA on guaranteeing the price paid for electricity generated by WIS.
Force Majeure	Acts, events or circumstances beyond the control of the parties involved in delivery of WIS.
4C Offshore	A leading consultancy and market research organisation targeting the offshore wind energy markets.
GBF	Gravity based foundation.

Abbreviation or Term	Definition
GW	Giga Watt. 1, 000,000 kilowatts.
IEA	International Energy Agency.
IEC	International Electrotechnical Commission.
IESO	Independent Electricity System Operation in Ontario.
Km	Kilometre.
kV	Kilovolt.
McNally	A marine and tunnelling contractor based in Hamilton, Ontario that has direct experience of contracting on the Great Lakes.
MCOD	Milestone Commercial Operation Date, the target date at which WIS should be operational.
Metocean	The combined effect of meteorology and physical oceanography.
MNR	Ontario Ministry of Natural Resources
MW	Mega Watt.
MWh	Megawatt hour.
NAFTA1	The first Windstream arbitration proceedings under the North American Free Trade Agreement in respect of the Wolf Island Shoals Offshore Wind Farm.
NAFTA2	The second Windstream arbitration proceedings under the North American Free Trade Agreement in respect of the Wolf Island Shoals Offshore Wind Farm.
NTP	Notice to Proceed.
O&M	Operation and Maintenance
OPA	Ontario Power Authority.
Opex	Operational expenditure associated with operating WIS.
Project	Wolfe Island Shoals Offshore Wind Farm.
RO	Renewables Obligation. A UK support mechanism that subsidised the price paid for electricity generated by renewable energy projects. This was closed on 31 March 2017.
RER-Green Giraffe	Expert Report of Green Giraffe dated 6 November 6 2015
RER-Jérôme Guillet	Expert report of Dr. Jérôme Guillet dated 12 December 2022.
SGRE	Siemens Gamesa Renewable Energy.
Weeks Marine	Weeks Marine is contractor that provides turnkey solutions for large and complex marine projects, including marine infrastructure construction, waterway maintenance and other environmental coastal protection projects.
Windstream	Windstream Energy Inc., the developer of Wolfe Islands Shoals Offshore Wind Farm.
WIS	The proposed 297MW Wolfe Island Shoals Offshore Wind Farm, located on Lake Ontario, approximately 10km southwest of Wolfe Island.

Abbreviation or Term	Definition
WIS Schedule Float	The amount of time that an activity associated with construction of WIS can be delayed without affecting the Project completion date.
WIS Schedule	The WIS development and construction schedule prepared by Wood.
Wood	The wind energy consultancy Wood.
Wood Schedule	The WIS development and construction schedule prepared by Wood and reproduced at Appendix B of CER-Wood.
WSP	WSP Global Inc., a Canadian consulting company.
WTG	Wind turbine generator.

1 Introduction

I previously provided expert reports to Windstream Energy Inc. (Windstream) regarding the potential development of Wolfe Island Shoals Offshore Wind Farm (WIS or the Project) , namely:

- CER – Two Dogs (Wind Turbine Selection Report)
- CER – Two Dogs (Capex Opex Sensitivity Report)

I also contributed to the report CER-Wood (Expert Report of Wood dated February 18, 2022).

I understand that on 13 December 2022, the Government of Canada delivered to Counsel, among other things, RER-Jérôme Guillet (Expert Report of Dr. Jérôme Guillet dated December 12, 2022).

Counsel has provided me with a copy of RER-Jérôme Guillet and asked me to provide my comments on it, from the perspective of my technical expertise in offshore wind farm development, construction and operation.

Paragraph 9 of RER-Jérôme Guillet references an expert report prepared by Chris Milburn, Edward Tobis and Pierre-Antoine Tetard, CER-Secretariat (Expert Report of Secretariat dated February 18, 2022).

Paragraph 13 of RER-Jérôme Guillet advises that Dr. Guillet was asked to rely upon RER-Green Giraffe (Expert Report of Green Giraffe dated November 6, 2015), CER-Secretariat and documents cited therein in preparation of RER-Jérôme Guillet.

CER-Secretariat cites CER-Wood that summarised the findings of, and listed, the following expert reports:

- Wood's Energy Yield Assessment (EYA), referred to as Wood (2021-EYA)
- Two Dogs Projects' Turbine Selection (TS), referred to as Two Dogs (2021-TS)
- Two Dogs Projects' Capex and Opex Sensitivity Analysis, referred to as Two Dogs (2021-Capex)
- COWI's Wind Turbine Gravity based foundation (GBF) Design, referred to as COWI (2021-GBF)
- COWI's Opinion of Probable Cost (OPC), referred to as COWI (2021-OPC)
- Weeks Marine' Construction Installation Means and Methods, referred to as Weeks (2021)
- Aercoustics' Sound Study, referred to as Aercoustics (2021)
- WF Baird's coastal engineering assessment covering various topics, referred to as WF Baird (2021)
- Ventolines' document review and gap analysis, looking at additional wind turbine installation vessel aspects, referred to as Ventolines (2021)
- Canadian Seabed Research's (CSR) wind turbine layout geological assessment, referred to as CSR (2021)
- Tulloch Engineering's Geotechnical Review, referred to as Tulloch (2021)

RER-Jérôme Guillet sets out several criticisms of the technical aspects of the Project, including:

- Paragraph 30
  - Lack of supply chain (paras 81 to 105).
  - Cliff like risk with regards to the feed in tariff contract (FIT Contract) (para 96).
- Paragraph 32
  - Plausibility of certain Project assumptions made in CER-Secretariat (Chapter 4).
- Paragraph 34
  - CER-Secretariat makes a number of aggressive and/or inaccurate assumptions.
  - Aggressive project timing assumptions (paras 96 to 105 and 124).
  - Rapid permitting process (paras 96 to 105 and 124).
  - Record short time to get to Financial Close (FC) (paras 96 to 105 and 124).
  - 2-year construction schedule starting and ending in winter with no buffer (paras 96 to 105 and 124).
  - Grid access (paras 120 to 121).
  - Assumptions in CER-Secretariat paras 2.18 and 2.19 are described as heroic (paras 34, 123 and 187).
  - Expectation of "best in class" (para 40, 105 and 194).
  - Assumption of no factual obstacles of any kind for a first of its kind project in a sensitive area in terms of water, shipping lanes, fauna and near the international border (paras 34 and 123).
  - Not all projects get permits within their hoped-for timetable (paras 34 and 123).
- Paragraph 40
  - Aggressive Project schedule that beats best in class recent European projects and does not include time buffers that lenders would expect to see (paras 194 to 196).
  - Construction costs low and on a par with best European practice: first project, new market, far away from existing supply chains (paras 200 to 203).
  - O&M costs low (paras 204 to 209).

However, as I will explain in more detail below, it does not appear that Dr. Guillet has considered the detail or conclusions of CER-Wood or any of the supporting technical expert reports cited in CER-Wood while developing his critique. A summary of which can be found at Appendix A of this report.

Further, it is difficult to understand how Dr. Guillet arrived at many of the contractual and technical conclusions drawn in his report if CER-Wood or the documents cited therein in had been reviewed by him.

The comments from the executive summary of RER-Jérôme Guillet are not supported by CER-Wood or the supporting technical expert reports submitted by Windstream in this matter, including the reports that I was involved in preparing, CER – Two Dogs (Wind Turbine Selection Report) and CER – Two Dogs (Capex Opex Sensitivity Report), where details of my relevant experience and expertise can be found.

Additionally, much of the information, in particular comparative projects, selected in RER-Jérôme Guillet to support the above comments is not representative of WIS, as it does not reflect the site specifics of WIS, which is in a lake not the sea, uses gravity-based foundations (GBFs) not monopiles, is 300MW not 3000MW. Furthermore, the impact that the site specifics of WIS will have on the WIS risk profile, permitting process, capex, opex, financing and construction is not considered in RER-Jérôme Guillet.

The reader of RER-Jérôme Guillet is repeatedly directed to large European and US offshore wind farms located in the North Sea or Atlantic Ocean that are exposed to higher wind speeds and wave heights than WIS, are in deeper water than WIS and are farther from shore compared to WIS, to evidence often repeated claims of *optimism* and *heroism* on the part of Windstream.

RER-Jérôme Guillet does not acknowledge the benefits of constructing an offshore wind farm in Lake Ontario using proven GBF and wind turbine technology. In my view, RER-Jérôme Guillet does not accurately reflect the technical components of WIS or use appropriate comparative projects.

RER-Jérôme Guillet comments regarding the technical competence of WIS can be summarized as follows:

- Absence of an offshore wind supply chain.
- Cliff-like risk with regards to the FIT Contract.
- Comparison of WIS to unrepresentative projects to predict the outcome of development of WIS.
- Aggressive WIS Project timing assumptions.
- Grid access not secured for WIS.
- Assumption of no factual obstacles of any kind in development of WIS.
- WIS construction costs low.
- WIS O&M costs low.

- WIS risk profile is high.

In the sections that follow, I address each of these criticisms.

2 WIS Offshore Wind Farm Supply Chain

2.1 Summary

RER-Jérôme Guillet cites WIS' absence of, remoteness from, and underdevelopment of an offshore wind supply chain for WIS as a detriment to development of WIS and a characteristic of the Project that would be viewed as high risk from the perspective of prospective lenders (see paragraphs 29, 30, 40, 86, 87, 88, 96, 99, 162, 194, 202 and 250 of RER-Jérôme Guillet). However, there is no mention of proven elements of the WIS supply chain in RER-Jérôme Guillet.

Consider paragraph 87 of RER-Jérôme Guillet:

> 87. Financing for offshore wind projects is still at a stage today where there is a need to build the first projects, with partly limited visibility on future demand (or at least the timing of such demand), and various requirements by State or federal legislators as regards the localization of factories or other parts of the supply chain within their jurisdiction. These issues make offshore projects more expensive and difficult to build as contractors are reluctant to invest in factories in areas with no experience and unknown demand potential.

There is no requirement for contractors to have visibility of future demand regarding construction of WIS nor does WIS require contractors to invest in factories. Multiple, large, one-off construction projects have previously, successfully been completed on Lake Ontario[1]. WIS does not require construction of a factory; it requires a GBF fabrication facility that will be financed by Windstream, not contractors.

Sections 2.2, 2.3 and 2.4 of this report address the comments made in paragraph 87 of RER-Jérôme Guillet.

Consider paragraph 88 of RER-Jérôme Guillet:

> 88. Supply chain issues remain stark even today in the US, in a context where a first project is already under construction, and several are progressing in their development (leases obtained, tariffs obtained for some of them, ongoing progress on permits) and there are highly supportive policies in place in several States:
>
> > *Availability of equipment is a growing challenge for the industry — a problem being exacerbated by some states' insistence on the use of local parts and labour as a condition of winning power sales contracts.*
> >
> > *"There are only so many resources that are available that can support the size of the turbines that we're going to be installing here in the US," said Amy McGinty, head of offshore construction at turbine manufacturer Vestas. "Whether it's vessels, cranes, transport capacity, factory capacity — we are having to make commitments now . . . for projects that we're going to be building in '25, '26, '27 and beyond."*[95]

[1] Section 3 of CER-Baird-3.

Supply chain issues regarding WIS are not stark and have largely been proven. The supply chain for WIS will not be competing with that for US offshore wind farms.

WIS had a supportive policy for offshore wind development in Lake Ontario until the moratorium was introduced.

Sections 2.5 and 2.6 of this report address the comments made in paragraph 88 of RER-Jérôme Guillet.

Section 2.7 of this report highlights the absence of material evidence to support the comments made in RER-Jérôme Guillet regarding the supply chain for WIS.

Section 2.8 presents the conclusions regarding the WIS supply chain.

2.2 Wind Farm Development on Lake Ontario and SGRE 4.5MW Supply

2.2.1 Wolfe Island Wind Farm

As noted in Section 2.3.3 of CER-Wood, a 200MW wind farm was constructed on Wolfe Island, 5km northeast of the WIS site. This wind farm is composed of 86 x 2.3MW Siemens wind turbine generators (WTGs) and became operational in 2009.

The developer and operator of this wind farm, Canadian Renewable Energy Corporation (CREC) arranged delivery of the WTGs from Europe to the Port of Ogdensburg, New York State, on the Saint Lawrence River.

CREC staged the WTG components at the Port of Ogdensburg and arranged for these components to be loaded onto transport barges for onward transportation along the Saint Lawrence River, into Lake Ontario and onto Wolfe Island.

The Windstream director, Ian Baines, was the founder and President of CREC prior to its sale to the current owner. He was responsible for the engineering and permitting of the project for twelve years prior to the sale and assumed an engineering consulting role in the project during contract negotiation, permitting, and construction. Wolfe Island was one of the first two large scale wind projects in Ontario.

Windstream's intention was to employ this proven means of supplying WTGs to WIS. That Ian Baines has direct experience of supplying WTGs to Wolfe Island Wind Farm is beneficial to the Project. In my opinion, WTG supply to WIS is low risk in relation to other projects.

Section 2.3.3 of CER-Wood also notes that Wolfe Island Wind Farm required installation of a submarine cable to interconnect Wolfe Island Wind Farm to the Ontario grid. This can be seen in Figure 1-2 of CER-Wood, reproduced at Figure 1 below. This element of Wolfe Island Wind Farm was completed by European contractors with no visibility of future demand for installation of submarine cables for wind farms or the requirement to construct a factory. Additionally, that this submarine cable was installed for Wolfe Island Wind Farm proves this element of the supply chain regarding Lake Ontario.

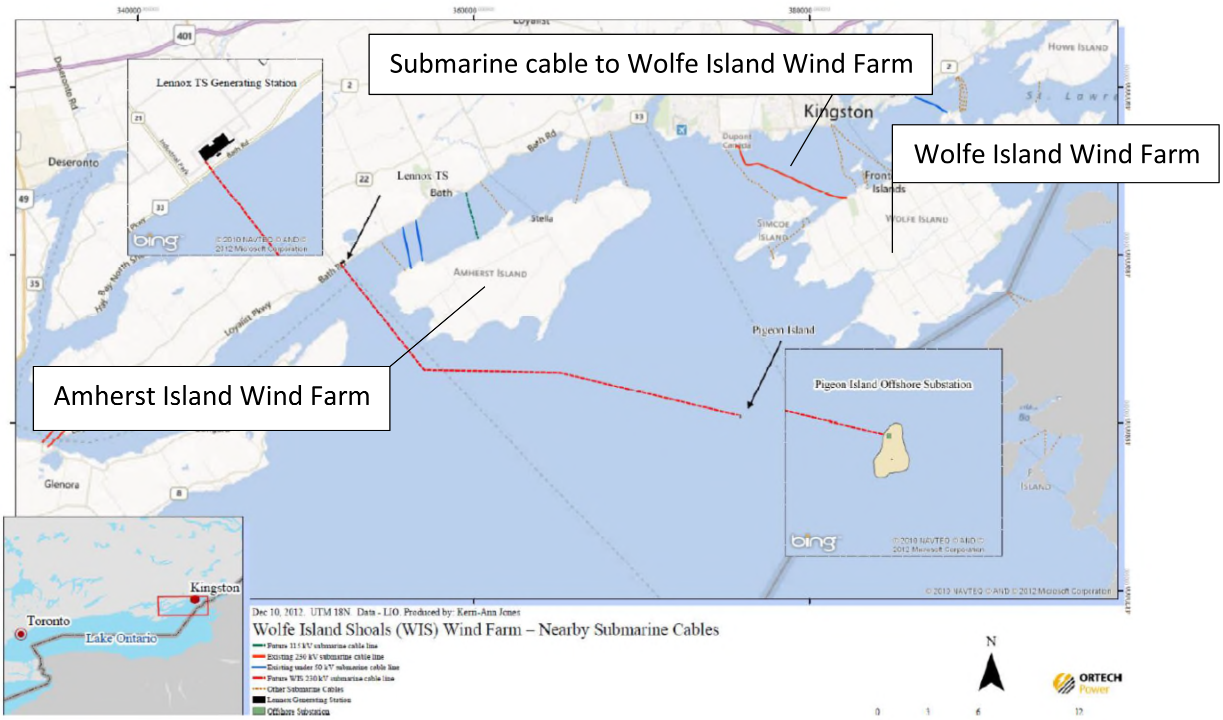

Figure 1 – Submarine Cable to Wolfe Island Wind Farm

Wolfe Island Wind Farm also required the supply of a 35/230kV transformer to collect power from the WTGs and supply this power to the Ontario grid via the submarine cable. This required transportation of the transformer by a vessel to Wolfe Island, where it was offloaded and incorporated into a switchyard. The proposition for WIS is very similar to that employed for Wolfe Island Wind Farm as the intention was to use Pigeon Island to locate the main transformer and switchyard for WIS. That a large 35/230kV transformer was shipped to and installed on Wolfe Island proves this element of the supply chain regarding Lake Ontario.

2.2.2 Amherst Island Wind Farm

An 83.2MW wind farm was constructed on Amherst Island, around 20km west of Wolfe Island between 2016 and 2018, see Figure 1. This required transportation and delivery of 26 x 3.2MW Siemens WTGs and a grid transformer along the Saint Lawrence River, into Lake Ontario and onto Amherst Island. Additionally, Amherst Island Wind Farm required installation of a submarine cable to interconnect it to the Ontario grid[2,3].

[2] C-2810, Amherst Island Wind Farm (January 1, 2023).
[3] C-2771Windlectric Inc Amherst Island Wind Project (August 24, 2020).

That construction of a second wind farm began on an island in Lake Ontario near WIS and seven years after Wolfe Island wind farm became operational, further demonstrates that key elements of the proposed WIS supply chain are proven and available to support what are, in effect, one-off projects.

That is, the supply chain that supported construction of Wolfe Island Wind Farm remained available to support Amherst Island Wind Farm seven years later. This further demonstrates that there is no requirement for contractors to have visibility of future demand regarding construction of WIS as asserted in RER-Jérôme Guillet.

The Amherst Island WTGs were installed on 99.5m towers compared to the 80m towers used for Wolfe Island Wind Farm. The 3.2MW Siemens WTG has a rotor diameter of 113m compared to the 93m rotor diameter Siemens 2.3MW WTGs used for Wolfe Island Wind Farm.

The more complex logistics of transporting and installing larger WTGs on taller towers compared to Wolfe Island Wind Farm were effectively managed by Stantec[4]. This prior experience in a relatively close location, approximately 10km from WIS, further demonstrates the established supply chain for delivery and installation of several of the key elements of the supply chain required for WIS.

2.2.3 Supply of the SGRE 4.5MW WTG to Canada

WIS proposes to use the Siemens Gamesa Renewable Energy (SGRE) 4.5MW 145m Rotor Diameter WTG with an effective hub height of 100m. Orders for this WTG have been placed for onshore Canadian wind farm projects[5,6] and phase one of the Forty Mile Wind Farm in Alberta is currently operational[7].

Therefore, it has been proven that this WTG can be supplied to a Canadian wind farm project.

2.3 Manufacture of GBFs on Lake Ontario

Windstream intended to employ gravity-based foundations (GBFs) for WIS. As noted in Appendix G.6 of CER-Wood, GBFs require a fabrication facility meeting the following requirements:

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[4] C-2810, Amherst Island Wind Farm (January 1, 2023).
[5] C-2746, Siemens Gamesa Press Release entitled "Siemens Gamesa receives a new order for 43 SG 4.5-145 turbines to be installed in Canada" (April 26, 2019).
[6] C-2765, Power Technology Article entitled: "SGRE to supply wind turbines for Forty Mile wind project in Canada"(February 12, 2020).
[7] C-2787, Alberta Major Projects Article entitled "Forty Mile Wind Power Project (Granlea Phase)" (January 1, 2022).

- Direct lake access.
- Proximity to aggregate and concrete supplies.
- 15 hectares for upland fabrication and staging area.
- 100 tonnes per square meter concrete skidding rail line bearing capacity.
- 8.2m navigable water depth with 13.2m depth below elevator platform.
- 40m air draft above the ground surface.

While there are several existing facilities on Lake Ontario that meet these requirements, Windstream's preferred site was the St. Mary's cement facility in Bowmanville, Ontario. This site has excellent transportation links for delivery of material by sea, existing infrastructure, proximity to a cement factory and access to deep water on Lake Ontario.

Had WIS been allowed to progress, and the Bowmanville facility secured by Windstream as planned, manufacture of GBFs for WIS using the proven design and project management skills of COWI, would be considered a low risk.

Additionally, the capital cost of the fabrication facility has been included in the overall capital cost for WIS and does not require future demand for GBFs beyond WIS. If there was future demand for GBFs, this would be a significant financial benefit to the Project as the GBF fabrication facility could be used further to completion of WIS and deliver an additional revenue stream to WIS or capital through its sale as a going concern.

2.4 Comparable Major Projects on Lake Ontario

2.4.1 Wabban Crossing

Section 9.1 of CER-Wood notes that GBF foundations proposed for WIS are similar to those installed for the Waaban Crossing, around 10km from WIS, see Figure 2, the concrete piers in the middle of the image are comparable to GBFs. Although these foundations were built in-situ, that these were constructed local to WIS proves that GBFs can be manufactured in Lake Ontario.

Regarding comments above, in paragraph 87 of RER-Jérôme Guillet, on the reluctance of contractors to invest in infrastructure without visibility of future demand, it is worth highlighting Waaban Crossing statistics[8]:

- The largest transportation investment in **Kingston's history**.
- **The first use of Integrated Project Delivery (IPD)** for a bridge project in North America.
- Design achievement with **the tallest and longest NU precast,** prestressed concrete one-piece girders in Ontario and the second in Canada.

[8] C-2743, Hatch Article re Kingston Third Crossing (Waaban Crossing) [2018 ongoing].

Figure 2 – Wabban Crossing from the East Side of the Cataraqui River

It is clear from the above summary that many elements of the Waaban Crossing were novel in North America and/or Ontario, that is, done for the first time in North America and/or Ontario. However, these "first of a kind" elements appear not have been an impediment to the project and sufficient risk mitigation was implemented by the project designer, Hatch, resulting in a government investment of $180m in the Waaban Crossing. Hatch further comments on the following characteristics of the Waaban Crossing[9]:

> *The first bridge construction project to adopt the IPD model in North America. IPD projects aim to connect all partners together from the onset to set shared goals and maintain shared accountability and ownership to deliver the best project possible.*
>
> *Utilized Building Information Modeling (BIM) to improve design efficiency and productivity, and gave the City, contracted design and construction firms a better visual understanding of the project's concept and scope.*
>
> *Leveraged BIM to lower project risks and costs, accelerate on-schedule delivery, improve overall integrated design, and minimize errors and rework.*

[9] C-2743, Hatch Article re Kingston Third Crossing (Waaban Crossing) [2018 ongoing].

This is the approach that should be adopted for any major infrastructure project. That is, throughout the development and design phase, all project partners work hand-in-glove to deliver the best project possible, improve the project design and reduce project risks and cost.

Based on the project plan described in CER-Wood and the supporting technical reports, this is precisely the approach that Windstream would have adopted had it been allowed to progress WIS.

It is also worth noting project numbers relating to the Waaban Crossing as stated by Hatch[10]:

- *15.6 m bridge deck cross-section width, consisting of a two-lane vehicular roadway and a multi-use path.*
- *100-year design service life on various elements, exceeding the 75-year requirement for the Canadian Highway Bridge Design Code.*
- *95 prestressed NU girders in total for the approach spans, with varying size, length and weight, and high-strength and extended durability requirements beyond the standard MTO requirements.*
- *1,695 prestressed deck panels were installed to form the bridge deck.*
- *3,300 tonnes of steel.*
- *31,000 tonnes of concrete.*
- *365,000 tonnes of gravel.*
- *$18M+ in locally sourced material and contracts.*
- *29,000+ local work hours sourced.*

There is only one Waaban Crossing, with no visibility of future demand for another similar project. Despite the assertion in RER-Jérôme Guillet that the absence of future demand is an impediment to a major construction project, the Waaban Crossing was built on time and to budget[11], making appropriate use of the local supply chain and contractors.

2.4.2 Other Major Projects on Lake Ontario and the Great Lakes

Lake Ontario and the St. Lawrence River are bounded by the USA and Canada, the largest and ninth largest economies in the world in 2020[12]. As evidenced above and discussed further below, the engineering expertise required to develop and deliver major engineering projects in Lake Ontario is readily available.

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[10] C-2743, Hatch Article re Kingston Third Crossing (Waaban Crossing) [2018 ongoing].

[11] C-2805, Global News Article entitled "Waaban Crossing in Kingston, Ont. Set to open Dec. 13" (November 24, 2022).

[12] C-2782, Countries ranked by GDP – International Monetary Fund (IMF) (June 20, 2021).

From the perspective of competent engineering consultants and contractors, it matters not whether the major project is a 62-pier bridge or 66 WTG offshore wind project. What does matter is that the appropriate studies are undertaken to inform the project design and suitably capable contractors are engaged to implement it. This is noted in Section 3.3.1 of CER-Baird-3 (Third Expert Report of W.F. Baird & Associates Coastal Engineers Ltd.):

Baird (2014, 2015) concluded that the various in-water components of the WIS Project do not differ in any substantive manner from the numerous in-water projects constructed and planned on the Great Lakes. The design, impact assessment, permitting, scheduling and construction of marine elements like the various components of the Project are not "*first of kind*" and have been successfully undertaken many times before for comparable marine projects on the Great Lakes.

Below water, the marine components of the Project, such as dredging, stone bedding, concrete pier foundations and electrical cables, are like other marine projects that have been safely permitted and constructed in freshwater Lake Ontario and other Great Lakes for over a century. The turbine foundation structures are relatively slender structures and are similar in form and function to bridge piers, piles, lighthouses, and navigation towers. Such structures have been designed, permitted, and constructed throughout the freshwater Great Lakes and connecting channels and elsewhere in Canada for over a century in accordance with accepted scientific and engineering practices with respect to coastal processes, including wind, waves, and ice.

Numerous examples of projects with features comparable to the WIS Project turbine foundations were presented in Baird (2015). Examples of structures with similar conditions to the Project (i.e., ice, waves, wind and/or freshwater) include the Yamachiche Light Pier, St. Lawrence Seaway (Figure 3.8) and the Confederation Bridge with 62 concrete piers in the water between New Brunswick and Prince Edward Island, Canada (Figure 3.9). Section 3.1 described many wind energy project turbine foundations that have successfully been designed and constructed in Europe and in fresh water. Therefore, Baird does not consider wind turbine foundations in the Great Lakes as "*first of kind*" structures with respect to coastal processes, wind, waves, ice conditions and installation.

2.5 Competition for Resources with the United States Offshore Wind Market

The GBF's will be built adjacent to Lake Ontario, towed to position by tug, and sunk into position further to preparation of the lakebed. The vessels required to facilitate this operation are readily available in the Great Lakes and it is highly unlikely that the availability of such vessels will be affected by the United States offshore wind market.

The installation vessel proposed to install the WIS WTGs, the R.D. MacDonald, is close to its lifting limit regarding the SGRE 4.5MW WTG. WTGs operating in the United States market are rated at 6MW and those proposed are rated at 8MW to 15MW. The R.D. MacDonald would not be capable of installing the WTGs proposed for the United States offshore wind market. Therefore, the availability of the R.D. MacDonald, or vessels with a similar lifting capacity, will not be affected by offshore wind construction in the United States.

Additionally, as noted in Section 3.1 of CER-Baird-3:

> *The engineering team working for Baird on Wolfe Island Shoals has first-hand experience of developing installation solutions where industry standard jack-up vessels cannot be utilized.*

CER-Baird-3 further explains how it is possible to convert barges to facilitate WTG installation in the event that a vessel with the capabilities of the R.D. MacDonald was not available.

2.6 Support for Offshore Wind Development on Lake Ontario

WIS had a supportive policy for offshore wind development in Lake Ontario until the moratorium was introduced.

The extract below is reproduced from a presentation given by the Ontario Ministry of Natural Resources (MNR) in 2010[13] on the topic of offshore wind power development in Ontario:

> ***Ontario's Green Energy Act***
>
> - *Green Energy Act (May of 2009) sought to:*
>   - *Make Ontario a renewable energy leader*
>   - *Address climate change – phase out coal and procure 48% of province's energy from renewables by 2025*
>   - *Encourage investment and create green jobs*
>   - *Aboriginal and local community participation incentives*
>   - *Foster a culture of conservation*
> - ***Provide investor certainty by establishing:***
>   - ***A provincial, streamlined approval process and***
>   - ***A long term power purchase framework (FIT program)***

The title of this presentation was, *Offshore Windpower Development in Ontario: Provincial Update and Ontario's First Purchase Agreement*.

The subject of the update regarding Ontario's first [power] purchase agreement was Windstream's Wolfe Island Shoals offshore wind farm and the FIT contract that Windstream agreed with the Ontario Power Authority (OPA).

Therefore, MNR was supportive of renewable energy development generally and specifically supportive of WIS by designing a streamlined approval process and offering revenue certainty through a long-term FIT contract, in recognition of the need to encourage investment in offshore wind farm development by providing investor certainty. As explained in CER-Powell-3, there have been no material changes to the regulatory framework since the conclusion of the first NAFTA proceeding between Windstream and Canada.

[13] C-2559, Ministry of Natural Resources – Offshore Windpower Development in Ontario: Provincial Update and Ontario's First Purchase Agreement – Great Lakes Wind Collaborative 3rd Annual Meeting (September 1, 2010).

Paragraph 88 of RER-Jérôme Guillet does not mention the fact that WIS had a supportive policy in place until introduction of the moratorium, yet it notes that several US states have highly supportive policies for offshore wind.

2.7 Absence of Evidence to Support WIS Supply Chain Issues

RER-Jérôme Guillet does not present any material evidence to support the opinions presented therein regarding the WIS supply chain. Furthermore, RER-Jérôme Guillet criticisms do not appear to have considered the work undertaken by Windstream and its team of experts with regard to the site-specific characteristics of Lake Ontario and WIS, the proven elements of the supply chain regarding construction of Wolfe Island Wind Farm and the proven capabilities of contractors regarding the construction of major projects in Lake Ontario and the Great Lakes.

Indeed, the evidence presented in RER-Jérôme Guillet relates to much larger WTGs, that would require much larger vessels compared to WIS and employ quite a different foundation solution.

Note that the GBF foundation solution proposed for WIS is a major benefit to the Project, offering cost, schedule and risk advantages compared to monopile or jacket foundations. These advantages have not been considered in RER-Jérôme Guillet.

The supply chain issues that are raised in RER-Jérôme Guillet are, in my opinion, non-material.

2.8 Conclusions regarding the WIS Supply Chain

While an offshore wind farm has not been constructed on Lake Ontario, the principal elements of the supply chain for an offshore wind farm, transportation of WTGs, construction and installation of GBFs, supply and installation of submarine cables, supply and installation of main transformers, have been proven in Lake Ontario by the construction of Wolfe Island Wind Farm, Amherst Island Wind Farm, the Waaban Crossing and major projects cited in CER-Baird-3, none of which required contractors to invest in factories.

With the exception of erecting wind turbines offshore, competent engineering consultants and construction contractors, that have capabilities regarding the principal elements of the supply chain for an offshore wind farm, have delivered these services regarding construction of Wolfe Island Wind Farm, Amherst Island Wind Farm, the Waaban Crossing and major projects cited in CER-Baird-3.

Weeks Marine, a potential WTG installation contractor has demonstrated that its vessel, the R.D. MacDonald, can access Lake Ontario and install WTGs for WIS and, in CER-Baird-3, Baird has evidenced that alternative installation solutions can be developed if the R.D. MacDonald was not available. The process of WTG erection at WIS would be the same as that which would be employed for any offshore wind farm. However, WIS has the advantages of lower wind speeds, reducing the potential for downtime due to high wind speed events, and a more benign wave regime, reducing downtime due to high mean wave heights.

Developing the offshore wind supply chain in Lake Ontario from the current, demonstrated capability, to meet the requirements for installing and operating WIS is considered to be low risk.

That Windstream could contract the required capabilities, to demonstrate to lenders that the supply chain can be secured to deliver WIS in the 36 months leading to FC, is considered to be a realistic prospect.

In my opinion, RER-Jérôme Guillet leaves one with the impression that the absence of offshore wind farms in Lake Ontario and the Great Lakes generally, is a major impediment to the Project as the supply chain does not exist to support the construction of WIS.

In my opinion, Windstream and its consultants have demonstrated that the supply chain required to deliver WIS does exist and has delivered comparable major projects in Lake Ontario for decades.

Overall, the risk of accessing the required supply chain for WIS is considered low.

3 Cliff Edge FIT Contract

3.1 WIS FIT Contract Clauses that Extend MCOD

Article 9 of the WIS FIT Contract (C-0245) addresses events of default that will trigger termination of the FIT Contract and clause 9.1(j) states:

(j) The Commercial Operation Date has not occurred on or before the date which is 18 months after the Milestone Date for Commercial Operation, or otherwise as may be set out in Exhibit A.

Clauses 10.1(f) and 10.1(g) of the WIS Fit Contract state:

(f) If an event of Force Majeure causes the Supplier to not achieve Commercial Operation by the Milestone Date for Commercial Operation, then the Milestone Date for Commercial Operation shall be extended for such reasonable period of delay directly resulting from such Force Majeure event. After the Commercial Operation Date, an event of Force Majeure shall not extend the Term.

(g) If, by reason of one or more events of Force Majeure, the Commercial Operation Date is delayed by such event(s) of Force Majeure for an aggregate of more than 24 months after the original Milestone Date for Commercial Operation (prior to any extension pursuant to Section 10.1(f)), then notwithstanding anything in this Agreement to the contrary, either Party may terminate this Agreement upon notice to the other Party and without any costs or payments of any kind to either Party, and all Completion and Performance Security shall be returned or refunded (as applicable) to the Supplier forthwith.

Therefore, events of Force Majeure can allow the Milestone Date for Commercial Operation (MCOD) to be extended by up to 24 months.

Clause 8.1(d) of the WIS Fit Contract states:

(d) Where the Commercial Operation Date occurs after the Milestone Date for Commercial Operation, the Supplier shall have the option to, no later than 60 days after the Commercial Operation Date, provide notice to the OPA along with a payment in the amount of 0.15 Dollars per kW multiplied by the Contract Capacity and multiplied by the number of calendar days that the Commercial Operation Date followed the Milestone Date for Commercial Operation. Where the Supplier exercises such option, the Term shall be extended such that the Term will expire at the beginning of the hour ending 24:00 hours (EST) on the day before (i) the 20th (twentieth) anniversary of the Commercial Operation Date in the case of Facilities utilizing Renewable Fuels other than waterpower, or (ii) the 40th (fortieth) anniversary of the Commercial Operation Date in the case of Facilities utilizing waterpower for their Renewable Fuel.

Consequently, Windstream could have extended the time to achieve commercial operation by making a payment to the Ontario Power Authority (OPA). Based on the formula above this would cost: $0.15 x 300,000kW x 30days = $1, 350, 000 CAD for every 30 days that the Commercial Operation Date occurred after the Milestone Date for Commercial Operation.

These clauses feature in all FIT contracts issued by the OPA/IESO for onshore wind farms, that have three years to achieve MCOD from the Contract Date, two years less that the WIS FIT Contract[14]. To the end of 2015, FIT contracts were offered to 84 onshore wind farms in Ontario: 58 in 2010, 25 in 2011 and one in 2014, and by the end of 2015, 1715MW of onshore wind farms with FIT 1[15] contracts were financed, constructed and operating[16].

3.2 Cliff Edge FIT Contract

The "cliff-edge" is mentioned in paragraphs 30, 96, 109, 124, 155 and 195 of RER-Jérôme Guillet and generally presented as a characteristic of the Project that would be viewed as high risk from the perspective of prospective lenders.

The comments in paragraph 96 of RER-Jérôme Guillet, that reproduces paragraph 125 of RER-Green Giraffe, are worth noting:

> 125. In particular, it is important to note that lenders are extremely wary of project "cliffs", i.e. events with catastrophic consequences, such as a contract or permit cancellation. As a result, they will always focus on the backstop dates linked to particular project milestones (start of construction at sea, first MWh produced, full completion) which, if not met, can threaten the very existence of the project. The risk of termination of the FIT Contract if the Project is not substantially complete by a certain date would definitely be considered as one such cliff, and banks will typically require a substantial time buffer between the planned completion date and the date when the adverse event could happen. For an offshore wind project, such a buffer will typically be at least one year, or ideally a year plus a few months of good construction season. Multiple projects have had to suffer delays of more than a year in recent years (see table below) and banks want to make sure that such scenarios are unlikely to happen in a project that they finance.

Specifically:

> *…, and banks will typically require a substantial time buffer between the planned completion date and the date when the adverse event could happen.* ***For an offshore wind project, such a buffer will typically be at least one year, or ideally a year plus a few months of good construction season****.*

3.3 WIS Schedule and Schedule Float

Appendix B of CER-Wood presents the WIS Schedule (or Wood Schedule), which is based on Wood's extensive offshore wind experience and is considered realistic and achievable.

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[14] C-2554, OPA FIT Contract version 1.3.0 (March 9, 2010).
C-2556, OPA FIT Contract version 1.3.1 (July 2, 2010).
C-2568, OPA FIT Contract version 1.5 (June 3, 2011).
C-2583, OPA FIT Contract version 2.1.1 (March 22, 2013).
C-2619, OPA FIT Contract version 3.0.1 (August 26, 2014).
C-2625, IESO FIT Contract version 3.1 (March 26, 2015).
C-2628, IESO FIT Contract version 4.0.2 (November 25, 2015).
C-2716, IESO FIT Contract version 5.0.2 (July 14, 2017).

[15] The FIT program launched by the OPA in March 2009.

[16] C-2671, Ivey Business School, Policy Brief entitled "Renewable Energy Policy and Wind Generation in Ontario" (January 31, 2017).

WIS Schedule float is the amount of time that an activity associated with construction of WIS, for example WTG installation, could be delayed without affecting the Project completion date.

As noted in Section 6.4 of this report, the Wood Schedule already has float built-in to it. That is, the expected duration of each task considered in the Wood Schedule has a nominal float, a period for the task to overrun. In Section 6.3.2 of CER-Baird-2 (Second Expert Report of W.F. Baird & Associates Coastal Engineers Ltd.), an analysis of weather windows for construction of WIS is presented. It is stated that the data were incorporated into the Project Schedule and that the analysis was consistent with Weeks/McNally's experience of undertaking marine construction in the Great Lakes, where it is assumed that no work will be undertaken for three months in winter and a 25% allowance for mechanical and weather delays (float) is assumed for the remaining nine months of the year.

The commercial operating date (COD) scheduled for WIS is December 2024, two months prior to MCOD in February 2025. If the float in the Wood Schedule was not utilised the COD would be achieved prior to December 2024.

As noted in Section 5.2 of this report, offshore wind farms constructed in the Baltic Sea using GBFs, namely Nysted and Rodsand II, that are of a comparable scale to WIS, were completed ahead of schedule. Section 5.3 of this report shows that at Fryslan Offshore Wind Farm, that was constructed on a Lake in the Netherlands, 89 monopile foundations and 89 x 4.3MW WTGs were installed in less than 16 months during Covid-19 and included a period for adverse weather delay.

The experts that contributed to the Wood Schedule namely, COWI, that had direct experience of Nysted and Rodsand II, Weeks Marine, an offshore installation contractor that developed the installation methodology for WIS, McNally a marine and tunnelling contractor based in Hamilton, Ontario that has direct experience of contracting on the Great Lakes, Baird, that has in-depth knowledge of the site-specific metocean and lakebed conditions of Lake Ontario, and Wood, that has extensive, global experience of offshore wind farm development and the precedent set by Fryslan Offshore Wind Farm, give me further confidence that the Wood Schedule is credible.

There is no material reason why the Wood Schedule could not be achieved and the precedent set by Nysted and Rodsand II, that were installed in the Baltic in similar metocean conditions using GBFs, would indicate that there is scope to achieve a COD ahead of schedule. This assertion is further supported by Fryslan, where more foundations and WTGs were installed in a shorter installation period that is proposed for WIS.

In my opinion, there is no reason why lenders would seek a time buffer beyond that which is facilitated by the WIS FIT Contract, as discussed in Section 3.1 of this report.

3.4 Extension of the MCOD

If an adverse event did happen, as described in Section 3.1 of this report, there are mechanisms in the FIT Contract that address this eventuality and mitigate the perception of a "cliff-edge" risk.

First, the COD scheduled for WIS is December 2024, two months prior to MCOD in February 2025. If the Wood Schedule was not achieved and Project construction ran beyond February 2025, it would be possible to extend MCOD on a month-by-month basis by making payments to the OPA.

Second, Force Majure events could extend the MCOD by 24 months to February 2027. This would extend the WIS construction buffer, beyond that factored into the Wood Schedule, and make two full construction seasons available if Force Majure is used to extend the MCOD. This exceeds the buffer stated in RER-Jérôme Guillet as being a lender requirement, see Section 3.2 of this report, as:

> ….***at least one year, or ideally a year plus a few months of good construction season***.

However, paragraph 126 of RER-Jérôme Guillet, reproduced below, then advises that WIS will require:

> ***….additional protection against potential problems, both in terms of contingent budgets and time buffers.***

without quantifying what the contingent budget and time buffers need to be.

Paragraph 126 of RER-Jérôme Guillet justifies the need for WIS requiring ***additional protection*** by raising previously developed, unsubstantiated arguments regarding the WIS supply chain.

126. What is essential to recognize here is that while banks will accept that the proposed completion date is reasonable, they still want to be protected against less likely but plausible scenarios. Thus, they will require that the project financing be designed from the start so as to survive such downside scenarios, and that the construction period start early enough to allow for such a buffer. For a project in a new country – indeed a new continent – lenders will worry that the supply chain is not mature or experienced enough, and will probably expect to see additional protection against potential problems, both in terms of contingent budgets and time buffers.

These arguments regarding the WIS supply chain are addressed in Section 2 of this report. Section 2 of this report concluded that the WIS supply chain risk was non-material, as much of the WIS supply chain is evidently proven and, where it has not been, a comparable engineering experience in the Great Lakes can be cited.

Therefore, the WIS supply chain risk is lower than is being described in RER-Jérôme Guillet, in which case there is unlikely to be a need for an additional time buffer for WIS to address the supply chain. In any case, WIS:

- Is scheduled to be completed two months before MCOD and could be completed sooner if WIS Schedule Float was not utilised, noting that there is precedent for not utilising schedule float set by Nysted and Rodsand II, and Fryslan, that employed one third more WTGs than WIS, was constructed in a shorter period than WIS.
- Can extend MCOD by up to 24 months further to force majeure events, facilitating two additional full construction seasons, exceeding the typical requirement of one full construction season plus a few months cited in paragraph 125 of RER-Jérôme Guillet.
- Has a contingency of approximately $100m CAD, nominally 10% of total Capex (CER-Two Dogs (Capex Opex Sensitivity Report), yet RER-Jérôme Guillet does not comment on this contingency allowance or suggest an alternative.

The WIS supply chain risk, and the "first-of-a-kind" narrative set out in RER-Jérôme Guillet, is overstated. In my opinion, any concerns regarding these issues can be appropriately mitigated by Windstream to the satisfaction of prospective lenders (see Section 3.6 of this report). This position is reinforced by the lower risk profile of constructing WIS in Lake Ontario using GBFs compared to installing WTGs in the North Sea on monopiles.

The Wood Schedule has adequate float, the WIS FIT Contract facilitates adequate time buffers and appropriate consideration has been given to WIS Capex contingency. Therefore, there would appear to be adequate protection for lenders based on the criteria set out in paragraphs 125 and 126 of RER-Jérôme Guillet.

The cliff-edge risk described in RER-Jérôme Guillet is considered non-material.

3.5 Precedent Set by Operational Onshore Wind Farms in Ontario

All FIT contracts for onshore wind allow 36 months to achieve the milestone date for commercial operation (MCOD) from award of the FIT contract. All FIT contracts for onshore wind allow MCOD to be extended by 24 months due to force majeure events. That is, all FIT contracts for onshore wind farms are exposed to the same "cliff-edge" risk that RER-Jérôme Guillet advises would be viewed as high risk from the perspective of prospective lenders, as discussed in Section 3.2 of this report, and have five years from award of the FIT contract to achieve commercial operation. However, in practice, this is not a hard stop deadline.

Several wind farms that are currently operating in Ontario achieved commercial operation more than five years after award of their FIT contracts from the launch of the FIT programme in 2009 (FIT 1). For example, Amherst Island, Niagara Region and Nigg Power Corporation wind farms, as detailed in Table 1 below. The FIT contract term remained at 20 years[17].

Table 1 – Onshore Wind Farms in Ontario with a COD after the MCOD

Onshore Wind Farm	Rated Capacity (MW)	IESO Active Contract Date (ACD)[18]	Milestone Commercial Operation Date (MCOD)[19]	Time between ACD and MCOD (Years)	Commercial Operation Date (COD)[20]	Time to Achieve COD from IESO ACD (Years)
Amherst Island	75	25-Mar-11	27-Jan-16	4.8	15-Jun-18	7.2
Niagara Region	230	15-Apr-11	08-Jun-14	3.2	02-Nov-16	5.6
Nigg Power Corporation	300	22-Jun-11	25-Feb-18	6.7	09-Sep-19	8.2

With reference to Table 1, in practice, the MCOD is not a hard stop.

First, the MCOD for each of the wind farms listed in Table 1 exceeds the IESO active contract date (the date the FIT contract for the wind farm became active) plus 36 months or three years, the time allowed to achieve commercial operation, excluding time added for force majeure events – a maximum of 24 months or two years.

Second, in the case of Nigg Power Corporation Wind Farm, the MCOD is more than five years (the time allowed to achieve MCOD, three years, plus two years for force majeure events) after the date the FIT contract was active. Therefore, the MCOD inferred in the FIT contract can be renegotiated with IESO.

Third, none of the wind farms listed in Table 1 achieved the stated MCOD.

Forth, all of the wind farm listed in Table 1 took over five years from having an active FIT contract to achieve commercial operation.

[17] C-2818, IESO Active Contracted Generation List (March 31, 2023).
[18] C-2671, Ivey Business School, Policy Brief entitled "Renewable Energy Policy and Wind Generation in Ontario" (January 31, 2017).
[19] C-2818, IESO Active Contracted Generation List (March 31, 2023).
[20] C-2818, IESO Active Contracted Generation List (March 31, 2023).

Fifth, FIT contracts were not terminated for any of the wind farms listed in Table 1.

There is scope for a wind farm developer in Ontario to negotiate a pragmatic commercial operation date with IESO beyond the MCOD, while retaining the FIT contract for the wind farm development.

Therefore, in practice, the "cliff-edge" risk in the WIS FIT Contract described in RER-Jérôme Guillet does not exist.

3.6 Risk Mitigation Offered by Early Engagement of a Lender's Engineer

A lender's engineer would normally be appointed during the latter stages of the development phase of an offshore wind project. However, there is no reason why an engineer with offshore wind lender's engineer experience could not be engaged by Windstream early in the Project development phase to continually de-risk WIS throughout the development phase in preparation for technical due diligence and FC, managing the expectations of prospective lenders.

3.6.1 Role of the Lender's Engineer

A lender's engineer represents lenders considering investing in a large capital project, such as an offshore wind farm. The lender's engineer independently opines on the technical aspects of a project based on the data made available by the project developer. That is, independent opinions formed by lender's engineer are based on the veracity of the available data and will not necessarily align with the interests of the lenders or owner.

The lender's engineer *tells it like it is,* when conducting an independent technical assessment of a project, that is, when undertaking technical due diligence on a project. The lender's engineer will review the technical aspects of all the major contracts associated with a project and all the technical inputs to the financial model used by the lender to determine whether the project meets the lender's investment criteria. The lender's engineer will also opine on the risk profile of a project. Ultimately, if the opinion of the lender's engineer is unfavourable, it is unlikely that lenders will invest in the project.

3.6.2 Engaging a Lender's Engineer Early in Development of a Project

By engaging with a lender's engineer early in the development of a project, potential issues, or risks, that could be of concern to a prospective lender's engineer, could be identified and mitigated well in advance of the technical due diligence process preceding FC.

By having a lender's engineer regularly review the status of a project, risks would be identified and actions would be put in place to mitigate these risks. For example, a project developer may be reluctant to undertake geotechnical investigation at each WTG position due to the associated cost. The lender's engineer may advise that by not undertaking geotechnical investigations at each WTG position would be considered to be high risk when the technical due diligence is undertaken prior to FC. The developer may elect to mitigate this risk by undertaking geotechnical investigations at each WTG position and using the findings to refine project design and de-risk the project.

Therefore, early engagement of a lender's engineer by Windstream to prepare WIS for technical due diligence preceding FC could expedite the FC process as key risks, from the perspective of a prospective lender's engineer, would have been identified and mitigated during the development phase.

Additionally, early engagement of a lender's engineer by Windstream would increase the probability of achieving the desired Project schedule by continually refining the Project design and de-risking the Project to reduce the risk of an unforeseen event.

Finally, the de-risking process will inform the level of contingency appropriate for the project. Contingency for WIS is set at 10% of Capex, a typical starting point, and there is every possibility that, had WIS been permitted to proceed, further to 36 months of de-risking during the development phase of WIS, that it would be possible to achieve a lower contingency level for WIS.

3.7 Conclusions

The WIS FIT Contract has clauses that permit the OPA to terminate the contract if the MCOD is not achieved, which is standard for all FIT contracts issued by the OPA. Several wind farms in Ontario have been financed with similar FIT contracts to that held by Windstream for WIS. Therefore, wind farms holding such contracts are financeable.

The WIS FIT Contact allows the MCOD to be extended on a month-to-month basis by making payments to the OPA and by up to 24 months should WIS be subject to force majeure events.

RER-Jérôme Guillet asserts that, in the case of WIS, the FIT Contract termination clause presents a cliff-like risk that would be unacceptable to lenders, advising in paragraph 125 that offshore wind farms require a time buffer of:

> ….***at least one year, or ideally a year plus a few months of good construction season***.

In paragraph 126 of RER-Jérôme Guillet it is advised that WIS will require:

> ***….additional protection against potential problems, both in terms of contingent budgets and time buffers.***

WIS has a time buffer of up to 24 months as MCOD can be extended by this amount of time due to Force Majeure events. Therefore, WIS meets the criteria specified in RER-Jérôme Guillet regarding the length of the time buffer that would be acceptable to lenders.

The Wood Schedule, as is stands, has been prepared by suitably qualified and experienced professionals, has adequate float and targets a COD two months before MCOD, which is considered achievable.

Had WIS been allowed to proceed, Windstream would have had up to 36 months to undertake development of the Project prior to the proposed FC milestone date. During this period Windstream could have engaged an experienced offshore wind farm lender's engineer to prepare the Project for FC, by routinely reviewing the Project and identifying and mitigating observed risks. This would allow all aspects of WIS, and specifically, the WIS Schedule and contingency allowance, to be continuously refined with a view to meeting the expectations of lenders.

Therefore, the cliff-like risk described in RER-Jérôme Guillet is being overstated as:

- The Wood Schedule is achievable.
- The available WIS FIT Contract time buffer and WIS Capex contingency allowances are adequate.
- Had WIS been allowed to proceed, all aspects of WIS could have been continuously refined with a view to meeting the expectations of lenders.
- There is scope for a wind farm developer in Ontario to negotiate a pragmatic commercial operation date with IESO beyond the MCOD, while retaining the FIT contract for the wind farm development. In practice, the "cliff-edge" risk in the WIS FIT Contract described in RER-Jérôme Guillet does not exist.

4 Comparison of WIS to Unrepresentative Offshore Wind Projects

RER-Jérôme Guillet inappropriately uses the experience of unrepresentative offshore wind projects to predict the outcome of the development of WIS.

4.1 Unrepresentative Benchmarking

RER-Jérôme Guillet repeatedly benchmarks WIS against recent European projects, despite these projects being quite different to WIS regarding location, size and technology.

For example, paragraph 51 of RER-Jérôme Guillet states:

> 51. The table below provides an update on the UK Round 3 projects which were presented in paragraph 70 of the Green Giraffe Report (the content in italics is the original content of the Green Giraffe Report).
>
> - As of end-2015, no project was operational yet;
> - As of end-2020, only 3 of the zones had operating projects, with a further 4 under construction;
> - As of end-2022, another 3 projects (Dogger Bank A&B and East Anglia 3) were under construction), with Hornsea 2 having become operational.

It should be noted that nine of the 18 offshore wind projects listed in Table 3 of RER-Jérôme Guillet are UK Round 3 projects, namely: Moray Firth, Firth of Forth (Seagreen), Dogger Bank, Hornsea, Rampion, Navitus Bay, Atlantic Array and Celtic Array. Navitus Bay was refused planning consent, Atlantic Array was cancelled for technical and financial reasons and Celtic Array was considered unviable due to high foundation costs, effectively closing three of the nine Round 3 development areas.

The other projects listed in Table 3 of RER-Jérôme Guillet are located in Scottish Territorial Waters[21] within 12 nautical miles (22km) of the coast and were licensed by the Scottish Government. Further to receipt of development licences, detailed feasibility studies were undertaken at these sites and three projects progressed to the development phase, Beatrice (not listed in Table 3 of RER-Jérôme Guillet), Neart na Gaoithe and Inch Cape. As these projects are not part of UK Round 3, as suggested in RER-Jérôme Guillet, they will not be discussed further in this report.

[21] C-2558, Map of Current Offshore Wind Activity in Scotland (August 23, 2010).

UK Round 3 projects are not appropriate benchmarks for WIS, as these projects are quite different to WIS regarding the scale of the proposals, the proposed technology, the metocean conditions, distance to shore and water depth.

4.1.1 IEC Wind Classification

IEC Wind Classification is explained in Table F-2 of CER-Wood and Section 3.2.2 of CER-Two Dogs (Wind Turbine Selection Report), from which Table 2 is reproduced.

Table 2 – IEC 61400-1 Wind Speed Classes

Parameter	IEC Class I (m/s)	IEC Class II (m/s)	IEC Class III (m/s)	IEC Class IV (m/s)
Maximum Annual Average Wind Speed, V_{ave}	10	8.5	7.5	6
50-year return extreme 3 second gust, V_{e50}	70	59.5	52.5	42
50-year return extreme 10-minute wind speed, V_{ref}	50	42.5	37.5	30

A WTG is designed to withstand the loads generated by the wind speeds listed under the IEC Class. V_{ave} in Table 2 is used to calculate the average thrust load on the WTG and, combined with other parameters, will determine the design life of the WTG. V_{e50} is the survival wind speed of the WTG and WTGs are designed to withstand the thrust loads generated by V_{e50}, typically experienced during extreme events, such as an exceptionally severe storm.

WIS is located in an IEC Class II wind regime. Almost every wind farm referenced in RER-Jérôme Guillet is located in an IEC Class I wind regime. While the difference between V_{ave} and V_{e50} in IEC Class I and II wind regimes in Table 2 may not look like much, as the thrust load generated by the wind is proportional to the square of the wind speed, it is actually quite significant.

Consider V_{ave}: $(10/8.5)^2 = 1.38$

Consider V_{e50}: $(70/59.5)^2 = 1.38$

This means that the average and extreme thrust load in an IEC Class I wind regime is 38% higher than the equivalent loads in an IEC Class II wind regime.

By way of analogy, if a bridge was designed to carry 10, 000kg (analogous to a Class II wind regime), the bridge for a Class I wind regime would need to be designed to carry 38% more load, or 13, 800kg. Consequently, the Class I bridge would require more material in the bridge structure to support the increased load and, for the same reason, more material in the bridge foundations. Therefore, the Class I bridge will cost more than the Class II bridge.

The same is true for IEC Class I and II WTGs and foundations. IEC Class I WTGs and foundations will cost more than IEC Class II WTGs and foundations. This is compounded by the increased wave loads in Class I environments and general wave conditions in areas like the North Sea that further increase the loads on the foundations located in the sea.

Therefore, WTGs and foundations located in the North Sea and other similarly harsh environments will cost more than WTGs located in Lake Ontario. This is not explained in RER-Jérôme Guillet and no attempt has been made adjust the details of reference wind farm projects cited in RER-Jérôme Guillet to account for the less harsh metocean conditions of Lake Ontario.

Consequently, direct comparison of the offshore wind projects listed in RER-Jérôme Guillet with WIS is misleading.

4.1.2 UK Round 3 Project Development

Returning to paragraph 51 of RER-Jérôme Guillet, reproduced in Section 4.1 of this report, it is stated that:

- *As of end-2015, no project was operational yet*.

This statement is used to support the argument made in RER-Jérôme Guillet that offshore wind projects require a long development period, but it does not explain why this duration is so long with regard to UK Round 3 projects, nor why WIS would experience a similarly long development period.

Round 3 offshore wind projects could not progress without certainty of the price that would be paid for the electricity generated, which is guaranteed by allocation of a contract for difference (CFD). East Anglia ONE was the only UK Round 3 offshore wind project to be allocated a CFD[22] in 2015. It is unsurprising that this Round 3 project was not operational at the end of 2015 given that it had been allocated a CFD earlier that year and further, significant work was required before construction could commence.

4.1.2.1 FID-Enabling Mechanism

The precursor to the CFD was the FID Enabling mechanism and one Round 3 offshore wind farm was awarded a contract under this mechanism on 09 May 2014, Hornsea 1. It is worth providing some background to the FID enabling mechanism as its purpose was to remove the power price uncertainty that was delaying offshore wind development in the UK.

[22] C-2623, Contracts for Difference (CFD) Allocation Round One Outcome (February 26, 2015).

The primary support mechanism for renewable energy generation in the UK from 2002 was the Renewables Obligation (RO)[23]. This was closed to all new generation, including offshore wind, on 31 March 2017[24]. The UK Government RO Closure Order was issued in 2014 and developers of renewable energy projects had until 09 November 2014 to apply for a grace period if evidence of substantial financial decisions and investments could be demonstrated. If successful, an offshore wind farm developer could extend the RO closure date until 31 March 2018[25]. One Round 3 offshore wind farm was granted a grace period, Rampion, requiring it be generating electricity by 31 March 2018.

The RO was replaced by the CFD scheme which was designed to provide long-term revenue stabilisation for low carbon initiatives. This legislation came into force on 31 July 2014[26].

The transition from the RO to the CFD scheme was supported by the UK Government scheme, Final Investment Decision (FID) enabling for renewables[27], that had the following objective:

> The principal objective of FID Enabling for Renewables is to enable developers of renewable energy projects to take final investment decisions, or other critical investment decisions directly impacting on the time to commissioning the project, which would otherwise be delayed by the uncertainty caused by the transition to the enduring CFD regime.

On 14 March 2013, the invitation to participate in FID Enabling for renewables was published and a deadline for applications for Investment Contracts was set at 06 September 2013[28]. Investment Contracts were issued for offshore wind farms on 09 May 2014[29].

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[23] C-2701, Renewables Obligation (RO) Information about the schemes, generators, suppliers, agents and contact guidance re: environmental and social schemes (April 1, 2017).
[24] C-2700, Renewables Obligation (RO) – RO Closure Ofgem (March 31, 2017).
[25] C-2722, Renewables Obligation (RO) Report entitled "Renewables Obligation: Closure of the scheme in England, Scotland and Wales" (April 11, 2018).
[26] C-2617, Electricity, The Contracts for Difference (Allocation) Regulations 2014, Statutory Instruments, 2014 No. 2011 (July 31, 2014).
[27] C-2581, Department of Energy & Climate Change: "Final Investment Decision Enabling for Renewables Update 1 - Invitation to Participate" (March 14, 2013).
[28] C-2590, Department of Energy & Climate Change: Final Investment Decision Enabling for Renewables Update 3: Contract Award Process (December 4, 2013).
[29] C-2597, Department of Energy & Climate Change: Investment Contract between Beatrice Offshore Wind Farm Limited and the Secretary of State for Energy and Climate Change, Phase 1 (May 9, 2014).
C-2598, Department of Energy & Climate Change: Investment Contract between Beatrice Offshore Wind Farm Limited and the Secretary of State for Energy and Climate Change, Phase 2 (May 9, 2014).
C-2599 Department of Energy & Climate Change: Investment Contract between DONG Energy Burbo Extension (UK) Limited and the Secretary of State for Energy and Climate Change (May 9, 2014).
C-2600, Department of Energy & Climate Change: Investment Contract between Dudgeon Offshore Wind Limited and the Secretary of State for Energy and Climate Change, Phase 1 (May 9, 2014).
C-2601, Department of Energy & Climate Change: Investment Contract between Dudgeon Offshore Wind Limited and the Secretary of State for Energy and Climate Change, Phase 2 (May 9, 2014).
C-2602, Department of Energy & Climate Change: Investment Contract between Dudgeon Offshore Wind Limited and the Secretary of State for Energy and Climate Change, Phase 3 (May 9, 2014).
C-2603 Department of Energy & Climate Change: Investment Contract between Heron Wind Limited and the Secretary of State for Energy and Climate Change, Phase 1 Hornsea Offshore Wind Farm Project, (May 9, 2014).
C-2604 Department of Energy & Climate Change: Investment Contract between Heron Wind Limited and the Secretary of State for Energy and Climate Change, Phase 2 Hornsea Offshore Wind Farm Project (May 9, 2014).
C-2605, Department of Energy & Climate Change: Investment Contract between Heron Wind Limited and the Secretary of State for Energy and Climate Change, Phase 3 Hornsea Offshore Wind Farm Project (May 9, 2014)

The primary reason for Investment Contracts being awarded was to avoid delay in constructing the offshore wind farm, as the projects could not progress without certainty on the power price they would receive. The target commissioning windows for the only Round 3 offshore wind farm to be awarded a FID Enabling contract, Hornsea 1, were[30]:

- Hornsea 1 Phase 1 (Zone 4, 400MW) 31 March 2019 + 1 year.
- Hornsea 1 Phase 2 (Zone 4, 400MW) 31 March 2020 + 1 year.
- Hornsea 1 Phase 3 (Zone 4, 400MW) 31 March 2021 + 1 year.

Therefore, none of the Round 3 developers expected to have projects operational at the end of 2015.

This reflects the complexity of these projects, the time required for surveys of the seabed, the detailed design and manufacture of the foundations, the availability of capable installation vessels and the process required to connect offshore wind farms to the grid.

Contrastingly, the metocean conditions at WIS are more benign, wave conditions at the WIS site are well defined[31], extensive wind data were collected from a meteorological mast and located on Wolfe Island 5km from the Project site[32], extensive geophysical surveys were conducted over the Project site[33], the GBF solution proposed for WIS avoids the need for heavy lift vessels[34], as would a barge based WTG installation solution (see Section 4.7.5 of this report), and WIS proposed to connect to the electricity grid at Lennox Generating Station[35], avoiding the need to permit an onshore transmission line.

Collecting data to inform the design of WIS is far less complex than UK Round 3 projects, as is the proposed construction of WIS, facilitating faster development and construction of WIS compared to UK Round 3 projects and offshore wind projects located in similarly challenging environments.

C-2606, Department of Energy & Climate Change: Investment Contract between DONG Energy Walney Extension (UK) Limited and the Secretary of State for Energy and Climate Change, Phase 2 Walney Extension Offshore Wind Farm Project (May 9, 2014)
C-2607, Department of Energy & Climate Change: Investment Contract between DONG Energy Walney Extension (UK) Limited and the Secretary of State for Energy and Climate Change, Phase 2 Walney Extension Offshore Wind Farm Project (May 9, 2014).

[30] C-2608, Department of Energy & Climate Change: Investment Contract between Heron Wind Limited and the Secretary of State for Energy and Climate Change, Phase 1 Hornsea Offshore Wind Farm Project (May 9, 2014).
C-2609, Department of Energy & Climate Change: Investment Contract between Heron Wind Limited and the Secretary of State for Energy and Climate Change, Phase 2, Hornsea Offshore Wind Farm Project (May 9, 2014).
C-2610, Department of Energy & Climate Change: Investment contract between Njord Limited and the Secretary of State for Energy and Climate Change, Phase 3, Hornsea Offshore Wind Farm Project, (May 9, 2014).

[31] Section 6.1.1 of CER-Baird-3 and Section 8.3 of CER-Wood.

[32] Section 8 of CER-Wood.

[33] Sections 8.1 and 8.2 of CER-Wood.

[34] Appendix G of CER-Wood.

[35] Section 1 and Appendix I of CER-Wood.

4.1.2.2 UK Round 3 Development is Long by Necessity

The development phase of Round 3 projects is longer compared to those constructed in previous rounds because the projects are larger and the locations are more demanding. This is compounded by the need for all Round 3 offshore wind farms (other than Rampion and Hornsea 1) to secure a CFD via competitive tendering, prior to making the final investment decision. CFDs were allocated to Round 3 offshore wind farms at the dates listed below:

- CFD Allocation 1, 26 February 2015: East Anglia ONE (714MW)[36]
- CFD Allocation 2, 11 September 2017: Hornsea 2 (1386MW) and Moray Offshore Wind Farm (East) (950MW)[37]
- CFD Allocation 3, 20 September 2019: Doggerbank (3600MW) and Seagreen Phase 1 (454MW)[38]
- CFD Allocation 4, 7 July 2022: East Anglia THREE, Phase 1 (1372MW), Hornsea 3 (2852MW), Moray Offshore Wind Farm (West) (294MW)[39]

The CFD quotes the strike price bid by a developer. The strike price is the £/MWh amount paid to the offshore wind generator, for a fixed length of time (15 years in the UK) for each megawatt hour (MWh) of electricity produced. If the developer bids a strike price that is too low, the project will not be financeable. If a developer bids a strike price that is too high, it will not be awarded a CFD.

Therefore, the developer needs to develop highly accurate construction and operational costs and a highly accurate prediction of annual energy production from the wind farm. Achieving the level of accuracy required to bid for a CFD is inherently time consuming due to the amount of survey work required to inform detailed design and costing of the offshore wind farm, which is further complicated by the location and scale of UK Round 3 projects.

As Windstream had a FIT Contract for WIS, it had the power price certainty required to progress development of WIS.

Returning to paragraph 51 of RER-Jérôme Guillet, it is stated that:

- *As of end-2020, only 3 of the zones had operating projects, with a further 4 under construction.*

At the end of 2020 the following UK Round 3 offshore wind farms were fully operational:

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[36] C-2623, Contracts for Difference (CFD) Allocation Round One Outcome (February 26, 2015).
[37] C-2717, Contracts for Difference (CFD) Second Allocation Round Results (September 11, 2017).
[38] C-2756, Contracts for Difference (CFD) Allocation Round 3 Results. (September 20, 2019, Revised October 11, 2019).
[39] C-2797, Contracts for Difference (CFD) Allocation Round 4 Results (July 7, 2022).

- Hornsea 1 (1200MW, 120km from the coast, 25m to 30m water depth, COD December 2019). For project location, see Figure 3, projects 36 and 38.
- East Anglia ONE (714MW, 43km from the coast, 33m to 67m water depth, COD July 2020). For project location, see Figure 3, project 34.
- Rampion (400MW, 13km from the coast, 19 to 40m water depth, COD April 2018). For project location, see Figure 3, project 48.

A total of 2324MW. When commissioned, Hornsea 1 was the world's largest offshore wind farm[40]. When commissioned East Anglia ONE was the largest windfarm in Iberdrola's history[41, 42]. These were milestone projects for the respective developers and the first phases of major development pipelines underpinned by years of detailed survey and design effort.

Note that Rampion achieved a COD almost two years before Hornsea 1. This is, in part, because it had power price certainty as it qualified for support under the RO, discussed at Section 4.1.2.1 of this report, giving the developer confidence to progress though development. This illustrates the importance of power price certainty, that Windstream had through the WIS FIT Contract.

At the end of 2020 onshore construction had begun on Seagreen (1075MW, see projects 49 and 50 in Figure 3) and Dogger Bank (3600MW, see projects 43 and 44 in Figure 3).

Returning to paragraph 51 of RER-Jérôme Guillet, it is stated that:

- *As of end-2022, another 3 projects (Dogger Bank A&B and East Anglia 3) were under construction, with Hornsea 2 having become operational.*

At the end of 2022 Hornsea 2 (1320MW, 89km from the coast, 30m to 40m water depth, COD August 2022) became operational.

Construction began on East Anglia THREE (1400MW, 69km from the shore, 50m+ water depth) and Dogger Bank A&B (2400MW, 125km to 290km from the coast, water depths 18m to 63m).

WTG installation had begun on Seagreen (1075MW, 27km from the coast, water depths up to 59m).

On commissioning in August 2022, Hornsea 2 was the world's largest wind farm[43]. Once commissioned Seagreen will become Scotland's largest wind farm and the world's deepest

[40] C-2763, Offshore Wind Article entitled "World's Largest Offshore Wind Farm Fully Up and Running" (January 30, 2020).
[41] C-2799, Offshore Wind Article entitled "East Anglia ONE, the largest windfarm in Iberdrola's history" (July 31, 2022).
[42] Iberdrola owns ScottishPower Renewables.
[43] C-2801, Orsted Article entitled "Hornsea 2, the world's largest windfarm, enters full operation" (August 31, 2022).

fixed bottom offshore wind farm[44]. At FC in November 2020, Dogger Bank A&B was the world's largest offshore wind project financing for, potentially, the world's largest offshore wind farm[45]. Again, milestone projects for the respective developers that have an inherently long development phase and are not comparable to WIS.

4.1.3 Appropriate Benchmarks for WIS

There are appropriate benchmarks (with characteristics much more similar to WIS) that can be utilized. For example:

- Section 2.3.1 of CER-Wood advises that offshore wind projects in the Baltic Sea are good comparators to WIS due to comparable water depths and more benign metocean conditions compared to the North Sea or Atlantic Ocean.
- Section 2.3.2 of CER-Wood presents an overview of Lake Varnen Offshore Wind Farm, a 30MW project built on a freshwater lake in Sweden, highlighting the opportunity to build on lessons learned from this project including the impact of pack ice.
- Section 2.3.3 of CER-Wood presents an overview of the 200MW Wolfe Island Wind Farm, built on Lake Ontario and around 5km from WIS, noting that Wolfe Island Wind Farm employed many of the means and methods proposed for WIS and was the precursor for WIS.
- Section 3.1 of CER-Baird-3 presents an overview of the 383MW Fryslan and 144MW Westermeerwind Offshore Wind Farms, located in the freshwater Lake Ijssel, the Netherlands. Note that both of these offshore wind farms utilised a novel installation method using barges and onshore cranes rather than the more expensive jack-up vessel option.

Logically, when predicting the outcome of a project that is yet to be fully developed and constructed, based on the experience of actual projects, the actual projects should be comparable to the project that is yet to be developed and constructed. However, no attempt has been made in RER-Jérôme Guillet to benchmark WIS against offshore wind farms using similar GBF technology in a benign metocean environment, like the Baltic Sea or Lake Ijssel.

I note that Green Giraffe was the financial adviser for Westermeerwind when it reached FC in July 2014[46]. Green Giraffe was also the financial adviser for Fryslan when it reached FC in

[44] C-2800, Electrek Green Energy Newsletter entitled: "The world's deepest fixed-bottom offshore wind farm produces first power" (August 23, 2022).
[45] C-2773, Dogger Bank Wind Farm Article entitled: "Dogger Bank Wind Farm A and B reaches financial close" (November 26, 2020).
[46] C-2773, Green Giraffe Advisory press release entitled "Westermeerwind reaches financial close" (July 28, 2014).

October 2019[47]. It is stated at paragraph 19 of RER-Jérôme Guillet that Dr. Guillet created Green Giraffe in 2010 and was its managing director until June 2021. Therefore, Dr. Guillet had first-hand knowledge of Westermeerwind and Fryslan (Fryslan is more comparable to WIS than any of the projects referenced in RER-Jérôme Guillet, see Section 5.3 of this report).

4.1.4 Conclusions on Inappropriate Benchmarking

In my opinion, the use of UK Round 3 Offshore Wind Projects and other offshore wind projects in the North Sea and the Atlantic Ocean in RER-Jérôme Guillet to predict the outcome of WIS, had it been allowed to progress through development and construction, is not credible. This conclusion is further explained in Sections 4.2, 4.5, 4.7, 4.8, 4.9 and 9.2 of this report.

Consequently, conclusions in RER-Jérôme Guillet derived from comparison of WIS with large projects in the North Sea, and similarly challenging offshore environments, are misleading.

4.2 UK Round 3 Overview

4.2.1 UK Round 3 Locations

Consider this description of UK Round 3 projects:

> *The parameters of nearly all of the round 3 zone projects are different to any projects in the past. They are larger projects, some are further away from the coast and others are in deeper waters. This results in each step of the project process producing new challenges never before confronted in the projects of the previous rounds.*
>
> *The planning phase of these wind farms, where data needs to be collected on the geophysical, meteorological and ecological conditions in order to determine the suitability of the area for offshore wind development is more time consuming due simply to the parameters of these development zones being so much larger, deeper and further away.*[48]

As noted in the first paragraph of the reference above, Round 3 projects are much larger, located much farther from shore and located in deeper waters compared to previous projects. In Figure 3 below, several of the UK Round 3 projects are located in the beige shaded areas, defined as *Wind farm areas of search* in the key to Figure 3. This is why the first paragraph of the reference above concludes that each step of the project process produces challenges never before confronted in previous rounds. Figure 4 details the projects listed in Figure 3.

The second paragraph of the reference above notes that as a result of the Round 3 projects being so much larger, in deeper water and farther from the shore compared to previous

[47] C-2754, Green Giraffe Advisory Press Release entitled “Windpark Fryslan reaches financial close” (October 2, 2019).
[48] C-2595, Offshore Wind Newsletter Article entitled: “UK Round 3: Accepting the challenge” (April 16, 2014).

rounds, the planning phase of Round 3 developments is more time consuming. That is, the characteristics of Round 3 projects mean that these are going to take longer to progress through the development phase compared to previous rounds.

Paragraph 51 of RER-Jérôme Guillet, reproduced in Section 4.1 above, is used to support the assertion that offshore wind development is, in general, a long, protracted process. However, as noted above, this is due to the characteristics of UK Round 3 projects, is specific to UK Round 3 projects (and other similarly ambitious offshore wind development programmes) and does not reflect the experience of previous UK offshore wind development rounds. RER-Jérôme Guillet does not reference or discuss previous UK offshore wind development rounds from a technical perspective.

In Figure 3 below, all the Round 1, 2 and Round 1 & 2 extensions are within or slightly outside the light blue line, the UK territorial waters limit of 12 nautical miles or 22.2km. For clarity, Figure 5 compares the locations of UK Round 1 and 2 projects with UK Round 3 projects.

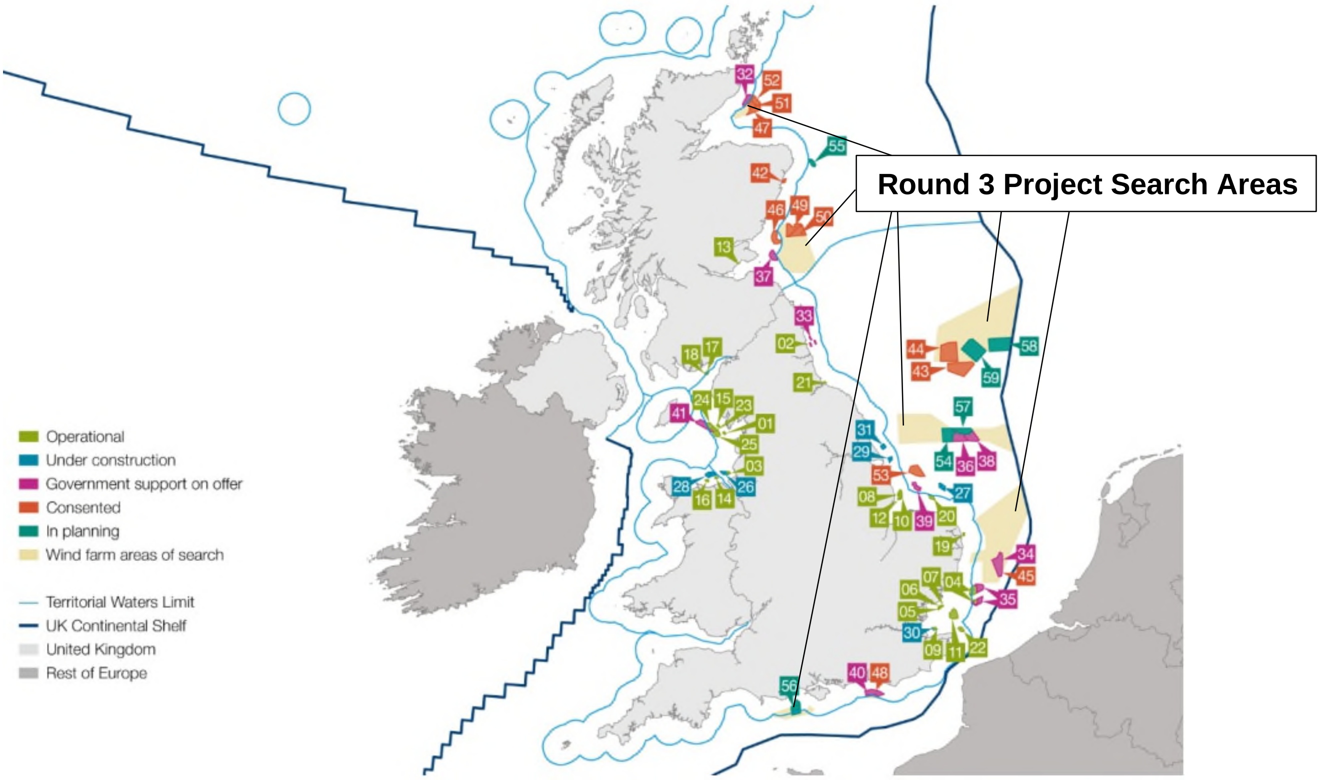


Figure 3 – UK Offshore Wind Projects[49]

[49] C-2742, Gov UK, Guidance entitled "UK Offshore Wind: Opportunities for trade and investment" (July 2, 2015 – WITHDRAWN December 17, 2018).

Operational: Total capacity of wind farms that have been fully commissioned.

No.	Project name	Capacity MW
01	Barrow	90
02	Blyth	4
03	Burbo Bank	90
04	Greater Gabbard	504
05	Gunfleet Sands Demonstration	12
06	Gunfleet Sands I	108
07	Gunfleet Sands II	65
08	Inner Dowsing	97
09	Kentish Flats	90
10	Lincs	270
11	London Array 1	630
12	Lynn	97
13	Methil Demonstration – Samsung	7
14	North Hoyle	60
15	Ormonde	150
16	Rhyl Flats	90
17	Robin Rigg East	90
18	Robin Rigg West	90
19	Scroby Sands	60
20	Sheringham Shoal	317
21	Teesside	62
22	Thanet	300
23	Walney (Phase 1)	184
24	Walney (Phase 2)	184
25	West of Duddon Sands	389
Total		4,039

Under construction: Total capacity of wind farms that are under construction or where the developer has confirmed a final investment decision, but are not yet fully operational.

No.	Project name	Capacity MW
26	Burbo Bank Extension	258
27	Dudgeon	402
28	Gwynt y Môr	576
29	Humber Gateway	219
30	Kentish Flats Extension	50
31	Westermost Rough	210
Total		1,715

Government support on offer: Total capacity of wind farms that have secured a Contract for Difference or whose publicly stated timescales are consistent with accessing the Renewables Obligation (RO).

No.	Project name	Up to capacity MW
32	Beatrice	664
33	Blyth Demonstration	99
34	East Anglia ONE	714
35	Galloper[1]	340
36	Heron Wind (Hornsea)	600
37	Neart na Gaoithe (NNG)	448
38	Njord (Hornsea)	600
39	Race Bank[1]	580
40	Rampion[1] (Southern Array)	400
41	Walney Extension	660
Total		5,105

Consented: Total capacity of wind farms that have planning consent and for which government support is not yet in place.

No.	Project name	Up to capacity MW
42	Aberdeen Demonstration	66
43	Creyke Beck A (Dogger Bank)	1,200
44	Creyke Beck B (Dogger Bank)	1,200
45	East Anglia ONE	486
46	Inch Cape	784
47	MacColl (Moray Firth)	372
48	Rampion (Southern Array)	300
49	Seagreen Alpha (Firth of Forth)	525
50	Seagreen Bravo (Firth of Forth)	525
51	Stevenson (Moray Firth)	372
52	Telford (Moray Firth)	372
53	Triton Knoll	1,200
Total		7,402

In planning: Total capacity of wind farms for which a consent application has been submitted.

No.	Project name	Up to capacity MW
54	Breesea (Hornsea)	900
55	Hywind 2 Demonstration (Buchan Deep)	30
56	Navitus Bay (West Isle of Wright)	970
57	Optimus (Hornsea)	900
58	Teesside A (Dogger Bank)	1,200
59	Teesside B (Dogger Bank)	1,200
Total		5,200

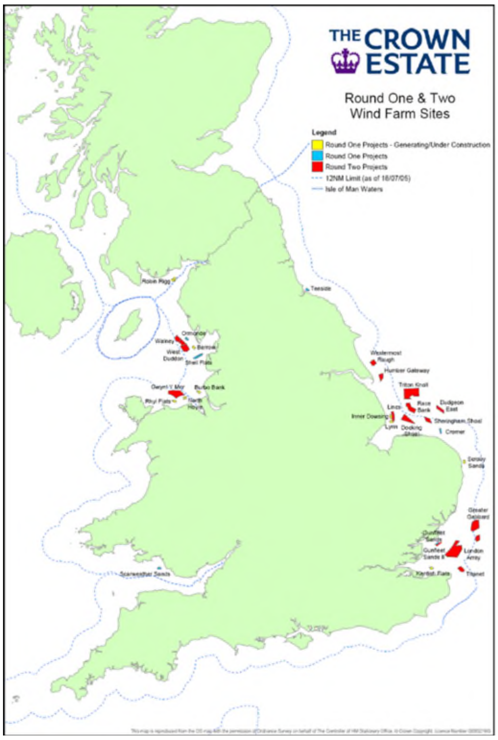
Grand total	23.46GW

1 RO feasible based on published grid connection dates as per TEC register – May 2015

NOTE: Quoted capacity refers to the property rights held with The Crown Estate and does not necessarily reflect the build out capacity permissible under current or future statutory planning permissions.

Figure 4 – UK Offshore Wind Project Pipeline – May 2015 © Crown Estate[50]

UK Round 1 & 2 Offshore Wind Farms[51]



UK Round 3 Offshore Wind Farms[52]

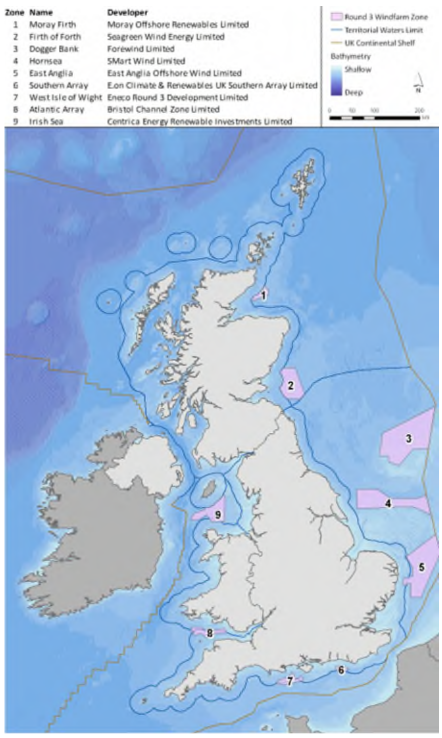


Figure 5 – Comparison of UK Rounds 1 & 2 with UK Round 3 Locations

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[50] C-2742, Gov UK, Guidance entitled "UK Offshore Wind: Opportunities for trade and investment" (July 2, 2015 – WITHDRAWN December 17, 2018).
[51] C-2552, The Crown Estate Map, Round One & Two Wind Farm Sites (October 31, 2009).
[52] C-2566, ICES WGECO Report: Map of Round 3 Offshore wind farms in UK waters (Source-Crown-Estate) (April 20, 2011).

The message conveyed by paragraph 51 and the associated table in RER-Jérôme Guillet supports the recurring assertion made in RER-Jérôme Guillet that offshore wind projects are more likely to fail than succeed and more often than not take more than five years to progress from FIT contract award to commercial operation. While this may be true of UK Round 3 projects, generally an order of magnitude larger than UK Round 2 projects, it does not make the assertion applicable to every offshore wind farm initiative.

It is also worth noting that six of the nine Round 3 development zones have operational offshore wind farms. This represents a success rate of 67%.

4.2.2 UK Round 3 Development

UK Round 3 was announced in 2008[53]:

> *The Crown Estate, owner of the UK seabed, announced Round 3 in 2008 and opened the competitive tender process for development rights in the year following. This third round included nine development zones where a number of wind farms could be developed with a possible capacity of 25GW. In January 2010 the successful bidders were announced.*

The Round 3 development zones, that can be seen in Figures 3 and 5, were identified by the Crown Estate further to a strategic environmental assessment consultation. The successful Round 3 bidders, announced in January 2010, still had to undertake technical assessments of the zones, including wind monitoring and surveys of the seabed.

RER-Jérôme Guillet does not adequately describe UK Round 3 nor explain why the projects cited are comparable to WIS. At paragraph 104 of RER-Jérôme Guillet, it is inferred that the UK Round 3 experience is typical off offshore wind development in the most advanced country for offshore wind, see Section 4.9 of this report. RER-Jérôme Guillet does not put UK Round 3 into context: UK Round 3 was a long-term investment opportunity that aimed to deliver a quarter of the UK's total electricity needs by 2020[54].

Consider this statement made by the Crown Estate in 2014, the UK Government agency responsible for administering UK Round 3[55]:

> *08 July 2014*
>
> ***Round 3 progresses to the next phase***

[53] C-2595, Offshore Wind Newsletter Article entitled: "UK Round 3: Accepting the challenge" (April 16, 2014).
[54] C-2555, Riviera Newsletter entitled "Crown Estate announces Round 3 offshore wind zone winners" (May 5, 2010).
[55] C-2614, The Crown Estate Article entitled "Round 3 progresses to the next phase" (July 8, 2014).

We have today confirmed that we have invited the Round 3 offshore wind development partners to revise the terms of their agreements, in recognition of the progress made in zone appraisal and the transition to the project development phase of Round 3.

This could see the replacement of the zone development agreements with new project specific contractual arrangements. ***Established in January 2010, the zone agreements provide the Round 3 developers exclusive rights to search and identify offshore wind farm projects, a process called zone appraisal and planning.***

To date, a total of 24 projects with a combined potential generating capacity of more than 18 GW have been identified and more may yet come forward as all zones conclude their appraisal activity. *Economic viability is an increasingly important part of these assessments due to the need to reduce the cost of generation.*

The current status of Round 3 projects:

- *2.3 GW consented capacity, of which 1.2 GW has been awarded a Contract for Difference through the FID-Enabling mechanism,*
- *8.5 GW in the planning system, and*
- *an additional 7.8 GW being progressed to consent submission*

Combined with previous rounds, the inclusion of 18 GW of Round 3 projects means that the UK offshore wind project pipeline stands at more than 30 GW. This comfortably meets the most demanding Government scenarios for the short and medium term and confirms the significant contribution that offshore wind can make to UK power generation.

Huub den Rooijen, Head of Offshore Wind said: ***Through Round 3, industry and The Crown Estate has collectively invested more than £300 million in zone appraisal and project development, which has resulted in an unparalleled scale of project capacity being identified and moved towards consent****.*

UK Round 3 was an ambitious, long-term UK Government policy requiring substantial development investment, ***£300 million in zone appraisal and project development,*** with the objective of delivering 25% of the UK's electricity demand by 2020. That, by the date of the Crown Estate statement above only 1.2GW of offshore wind projects were both consented and had a contract for difference through the FID-Enabling mechanism[56] (early contracts for Difference, CFDs, the UK Government's main mechanism for supporting low-carbon electricity

[56] C-2612, Gov UK, Policy paper entitled "Final Investment Decision (FID) Enabling for Renewables - Investment Contracts" (June 10, 2014).

generation)[57], is testament to the challenges associated with development of UK Round 3 projects, as discussed in Section 4.2.1 of this report.

The Crown Estate identified the Round 3 zones, shown in Figure 6 of this report, and invited developers to bid for zone development agreements that would give developers exclusive rights to search and identify offshore wind farm projects within each zone. The results of this bidding process were announced in January 2010, see Figure 5 of this report where each of the Round 3 zones has been allocated a developer. As noted in the Crown Estate statement above, further to technical and environmental assessment of these zones offshore specific projects were identified and progressed through the permitting process. On completion of the permitting process the developer then had to bid for a CFD to secure the price paid for the power exported from its offshore wind farm.

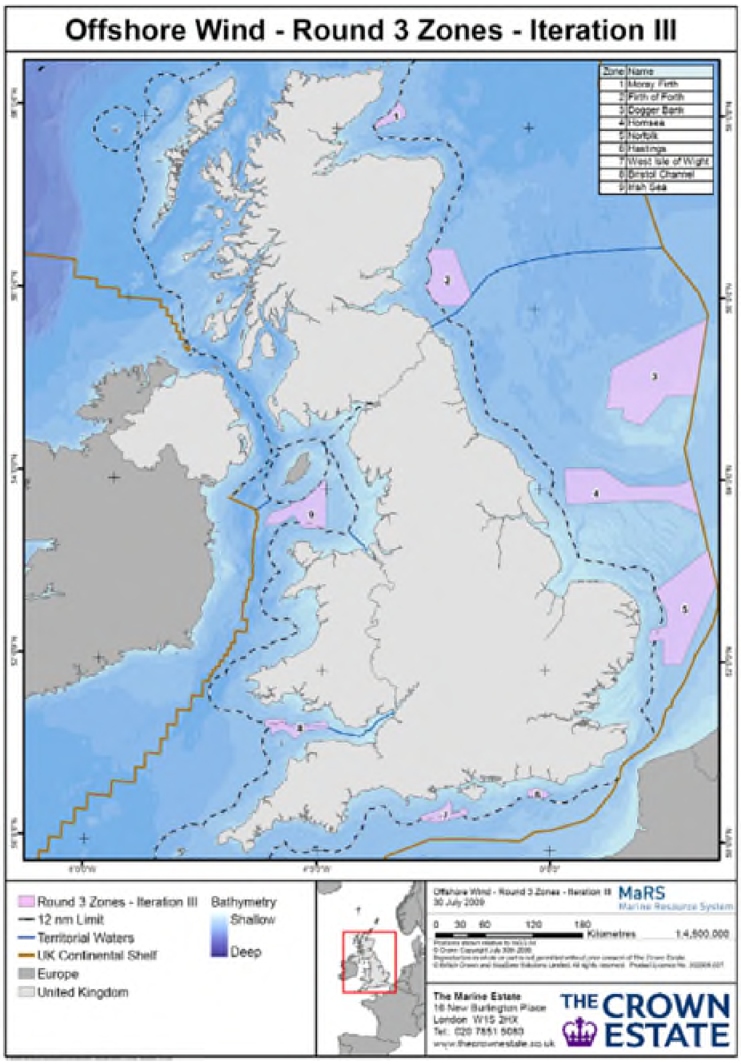

Figure 6 – UK Round 3 Zones[58]

[57] C-2807, Gov UK, Policy paper entitled "Contracts for Difference" (December 14, 2022).
[58] C-2551, Map of Offshore Wind – Round 3 Zones – Iteration III (July 30, 2009).

On award of the FIT Contract, Windstream had already identified the WIS Project site and secured the price it would be paid for power exported from WIS. On award of the zone agreement, UK Round 3 developers still had to identify projects and secure a CFD through negotiation with the UK Government or via a competitive auction.

This is why the duration of the development and construction process inferred in paragraph 104 of RER-Jérôme Guillet can be stated as ranging between 8 – 10 years, which is discussed further in Section 4.9 of this report. However, RER-Jérôme Guillet fails to mention that this development and construction duration is a direct result of the UK Round 3 zone agreement bidding process, the CFD process and the scale and complexity of development Round 3 projects, none of which has any parallel to WIS.

It is worth noting that the WIS, in effect, had a grid connection offer (see Section 7 of this report) and proposed to connect to Lennox Generating Station, where power generated by WIS would be absorbed into the local electricity distribution system without the requirement for reinforcement or a lengthy permitting process for a transmission line. Comparatively, the onshore electricity transmission and distribution infrastructure required to evacuate the electricity from UK Round 3 projects was not necessarily in place. The large offshore wind farms discussed in RER-Jérôme Guillet typically require substantial upgrades to the electricity transmission and distribution system into which they are proposing to connect. Such upgrades can take many years and extend the time taken by projects to obtain the fully permitted status, another reason why UK Round 3 projects have an extended development timeline and are not comparable to WIS.

4.3 UK Round 1

Consider UK Round 1 projects where the primary purpose of the initiative was to give developers a chance to gain technical and environmental experience of offshore wind farm development. The first Round 1 project was completed in 2003 and the last in 2013. Round 1 granted 17 licences and delivered 1200MW in 12 projects, average project size 100MW. The project development success rate was 70%.

4.4 UK Round 2

UK Round 2 granted 15 licences and delivered 5,679MW in 14 projects between 2012 and 2022, average project size 400MW. Most of the Round 2 projects were operational by 2015 and took around 2 to 3 years to construct. The project development success rate was 93%.

4.5 UK Round 3 Projects are Unrepresentative of WIS

UK Round 3 projects, as per the list in Table 3 of RER-Jérôme Guillet, aim to deliver 24, 700MW in 7 projects, with an average project size of 3529MW. Some were abandoned, some were consented, some are under construction, and some are operational.

In terms of average project size, Round 3 projects are 35 times the average project size of Round 1 projects, 9 times the average project size of Round 2 projects and 12 times the size of WIS.

While the commentary in RER-Jérôme Guillet regarding UK Round 3 is factually correct, it is unreasonable to use the Round 3 experience to draw conclusions as to how WIS would have progressed through development, financing and construction had it been allowed to do so. The same could be said of the other offshore wind farms referenced in RER-Jérôme Guillet that have been used to draw conclusions as how WIS would have progressed through development, financing and construction had it been allowed to do so.

WIS is in Lake Ontario, not the North Sea or the Atlantic Ocean. It is fresh water, not salt water. While the Lake Ontario surface level height will vary (mean annual variation 0.5m, seasonal variation 0.3 to 1.1m[59]) the variation is small in comparison to tidal variations experienced at sea (up to 6m for UK offshore wind farms[60]). Mean and extreme wave heights on Lake Ontario (extreme wave heights exceed 6m[61] in Lake Ontario and are between 10m and 14m in the Southern North Sea[62]) are significantly lower than those experienced in the North Sea as are mean and extreme wind speeds. Consequently, the design and operation of offshore wind farms for Lake Ontario is based on a more benign set of parameters than the North Sea.

There is an abundance of existing meteorology, freshwater oceanography, geotechnical and environmental information available for Lake Ontario, as evidenced in the documents submitted by Windstream for NAFTA1 and NAFTA2. Consequently, there is less risk of unexpected issues arising, like facing legal challenges regarding avian impact[63] or encountering unexploded munitions (a concern for US and European offshore wind

[59] C-2549, PLOS ONE Article entitled "Integrated Ecosystem Assessment: Lake Ontario Water Management" (November 25, 2008).
[60] C-2564, Article from the Scottish Government entitled "Scotland's Marine Atlas: Information for The National Marine Plan" (March 16, 2011).
[61] C-2726, Paper from the SpringLink entitled "A climatology of extreme wave height events impacting eastern Lake Ontario shorelines" (May 20, 2018).
[62] C-2544, TU Delft Repositories Article entitled "The maximum significant wave height in the Southern North Sea" (February 1, 1995).
[63] C-2635, Power Technology Article entitled "The £2bn wind farm brought down by birds" (July 10, 2016).

projects[64],[65]). The WIS turbines are approximately 5km to 15km from Wolfe Island and in water depths of 10m to 30m.

The WIS environment is completely different to the North Sea, with a completely different and significantly lower risk profile than the projects cited in RER-Jérôme Guillet and used to draw conclusions as to how WIS would have progressed through development, financing and construction had it been allowed to do so.

For example, weather risk, and who takes this risk on, is a significant issue regarding project financing. Severe storms could result in major delays to projects resulting in significant cost increases and, in my experience, there are lengthy debates as to what allowance should be made for weather delay and what is borne by the developer and the contractor. The lenders must understand who is taking the risk and whether sufficient allowance has been made in the contract price/contingency. This can drag the financing process out for projects in the North Sea or similarly challenging environments. However, due to the wind and wave climate of Lake Ontario, weather delay risk will be far less of an issue compared to the North Sea.

Further, RER-Jérôme Guillet does not mention that WIS would use GBFs as opposed to monopile foundations. In fact, RER-Jérôme Guillet is silent on any benefits resulting from WIS being located in Lake Ontario or the benefits of the WIS design and construction strategy as presented in CER-Wood.

In my opinion, the scale, proposed technology, metocean conditions, distance to shore and water depth of UK Round 3 offshore projects make these inappropriate comparators to WIS, especially given that there are other appropriate comparators, including some UK Round 2 projects.

4.6 Thanet Offshore Wind Farm

Consider Thanet Offshore Wind Farm, a similar capacity to WIS and operational in 2010:

> ***World's Largest Operational Offshore Wind Farm, Kent, United Kingdom[66]***
>
> *The Thanet Offshore Wind Farm is located 11km from the coast of Thanet, in Kent, UK. [Project 22 in Figure 3 of this report] It is one of the 15 Round 2 wind projects initiated by the Crown Estates. It is also the world's largest operational offshore wind farm to date. It is owned by Swedish energy company Vattenfall.*

[64] C-2626, Offshore Wind Article entitled "UNEXPLODED ORDNANCE (UXO): Unexploded ordnance does not go away" (April 6, 2015).
[65] C-2798, New Scientist Article entitled "Unexploded munitions found at first large US offshore wind farm sites" (July 19, 2022).
[66] C-2557, Power Technology Article entitled "Thanet Offshore Wind Farm – The World's Largest Operational Offshore Wind Farm, Ken, United Kingdom" (August 5, 2010).

The wind farm has an installed capacity of 300MW, which is sufficient to power 240,000 homes. It has an operational life of 40 years.

The Thanet Offshore Wind Farm was approved in December 2006. Construction began in January 2008 and was completed in June 2010, with the installation of the last turbine. The estimated cost of the project is £780m.

Thanet and other UK Round 2 projects are more comparable to WIS than UK Round 3 projects, with WIS being in Lake Ontario we have far more benign metocean conditions, reducing weather/installation risk. Additionally, the use of GBFs reduces capex (lower material cost, tug installation) and further reduces installation risk.

Thanet, a UK Round 2 project, is comprised of 100 x 3MW Vestas V90 wind turbines and was constructed in water depths of 14m to 23m. Based on the reference above, it took 29 months to install 100 monopile foundations and 100 WTGs. It took 13 months between the December 2006 approval and construction commencing in January 2008. Therefore, it took 42 months or 3.5 years for Thanet to progress from fully permitted to commercial operation.

4.7 East Anglia ONE

As noted in Section 4.2.2 of this report, the Crown Estate awarded zone development agreements to developers in January 2010, that gave developers exclusive rights to search and identify offshore wind farm projects. ScottishPower Renewables was awarded a zone agreement for Zone 5, East Anglia, the location of which can be seen in Figure 5.

Development of East Anglia ONE, project 34 in Figure 3, is summarised below:

- Zone development agreement awarded January 2010.
- Planning consent was granted on 14 June 2014 and East Anglia ONE was the first of the UK Round 3 wind farms in England and Wales to be approved[67].
- East Anglia ONE obtained a contract for difference (CFD) on 26 February 2015[68]
- Pre-construction began in Spring 2017[69]
- Full operation achieved by July 2020[70]

ScottishPower Renewables took just over five years to achieve fully permitted status for East Anglia ONE. That is, securing all the necessary consents and a CFD. It then took

[67] C-2613, ScottishPower Renewables Article entitled "Planning Consent Granted For East Anglia ONE Offshore Windfarm" (June 17, 2014).
[68] C-2624, ScottishPower Renewables Article entitled "East Anglia ONE Offshore Windfarm Secures 714MW Contract" (February 26, 2015).
[69] C-2699, ScottishPower Renewables Article entitled "East Anglia ONE – Pre-Construction commences" (Spring 2017).
[70] C-2767, ScottishPower Renewables Article entitled "East Anglia ONE – Full Operation Achieved" (July 2020).

ScottishPower Renewables just over five years to complete the necessary surveys and construct the required infrastructure and install 102 x 7MW WTGs, 43km from shore during the COVID-19 pandemic[71] in water depths of 31m to 53m[72]. These timescales reflect the scale and complexity of developing Round 3 projects and are not comparable to WIS.

Generally, the large UK Round 3 and North Sea offshore wind farms used to infer the likely outcome of development of WIS in RER-Jérôme Guillet are a much larger scale of project compared to WIS and require significantly more investigative surveys due to the lack of site-specific information, as required for East Anglia ONE and discussed further below.

4.7.1 East Anglia ONE Wind Monitoring

The scale of Round 3 development can be illustrated by the weather monitoring campaign undertaken by ScottishPower Renewables for East Anglia ONE, as summarised below[73]:

> *Two advanced weather monitoring masts were installed in August 2013, one located to the north of the East Anglia development zone and one to the South. The £17m ($25m approximately) contract for the masts was awarded in October 2012 to Wood Group, who further collaborated with SgurrEnergy and Steel Engineering of Renfrewshire.*

Therefore, from award of the development zone agreement in January 2010, it took ScottishPower Renewables 34 months to award a contract for supply and installation of wind monitoring masts within the East Anglia development zone and a further 11 months before the offshore wind monitoring masts were installed, or 45 months before site-specific weather monitoring could commence.

To this duration add collection of 12 months of wind data, which would be the minimum wind measurement period required to inform a reliable energy yield prediction, that would ultimately underpin ScottishPower Renewable's CFD bid, which would extend the timeline to August 2014. The CFD for East Anglia ONE was awarded to ScottishPower Renewables in February 2015, further to a competitive tendering process. That is, the award of a CFD to ScottishPower Renewables was not guaranteed. February 2015 was the earliest that East Anglia ONE could have achieved the fully permitted status, due to the logistics associated with collecting wind and metocean data and the CFD process.

Contrast the East Anglia ONE timeline with WIS. Windstream began its extensive wind monitoring campaign through installation of an 80m meteorological mast at Long Point on

[71] C-2799, Offshore Wind Article entitled "East Anglia ONE, the largest windfarm in Iberdrola's history" (July 31, 2022).
[72] C-2592, The Planning Inspectorate YR Arolygiaeth Gynllunio: The Planning Act 2008, East Anglia One Offshore Wind Farm Examining Authority's Report of Finding and Conclusions and Recommendation to the Secretary of State for Energy and Climate Change (March 18, 2014).
[73] C-2698, Power Technology Article entitled "East Anglia ONE Offshore Wind Farm" (March 16, 2017).

Wolfe Island in December 2011[74] to inform the energy yield prediction for WIS, 19 months after the offer of the WIS FIT Contract in May 2010. It took ScottishPower Renewables 45 months from award of the development zone agreement to begin its wind monitoring campaign.

ScottishPower Renewables had to collect at least 12 months of wind data to inform its CFD bid, awarded in February 2015, without which it would not have certainty of the price it would be paid for power exported from East Anglia ONE. WIS had this price certainty in May 2010 through the FIT Contract.

Metocean data collection for Round 3 offshore wind farms is, by the very nature of the Round 3 offshore wind farms, a time-consuming endeavour and is not comparable to WIS.

4.7.2 East Anglia ONE Seabed Surveys

Consider this statement from Scottish Power Renewables[75]:

> ***21 January 2016***
>
> *SPR* [ScottishPower Renewables] *and Vattenfall used advanced sonar technology to scan over 6,000km^2 of the seabed in the Southern North Sea over two years, which is nearly 4 times the size of Greater London (1,583km^2). This work is critical to understand seabed conditions, and allow the companies to design the layout of their proposed projects. Although more than 60 wrecks were discovered during the scanning work, most of these were anticipated, but the uncharted submarine 90km from shore was entirely unexpected.*

This helps put the scale and complexity of UK Round 3 projects and large offshore wind project development in the North Sea into perspective. Unlike the proposed location of WIS in Lake Ontario, where detailed information regarding the lakebed has been collected and analysed[76], extensive, time-consuming surveys of the seabed are required to inform the design of the wind farm and its connection to the electricity grid.

Seabed surveys for Round 3 offshore wind farms are, by the very nature of the Round 3 offshore wind farms, a time-consuming endeavour which is not comparable to what is required for WIS.

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[74] Section 8 of CER-Wood.
[75] C-2631, ScottishPower Renewables Article entitled "Seabed Scanning For East Anglian Windfarm Reveals Uncharted WWI German Submarine" (January 21, 2016).
[76] Sections 8.1 and 8.2 of CER-Wood.

4.7.3 East Anglia ONE Subsea Export Cables

Consider this statement from ScottishPower Renewables[77]:

> *In August 2018, offshore works for East Anglia ONE commenced. This included the construction of two offshore converter stations, the laying of two sub-sea export cables, each 73 kilometres in length, in addition to the array cables to connect the wind turbines. The jacket foundations for the turbines and the turbines themselves were transported to site and installed. Each jacket was installed onto three of the foundation piles previously installed in 2017.*

Again, this helps put the scale of development of UK Round 3 and North Sea offshore wind farms into perspective. East Anglia ONE required construction of two offshore converter stations and installation of 2 x 73km (146km) of export cables, WIS proposes a single onshore converter station on Pigeon Island and a single 25km export cable[78].

4.7.4 East Anglia ONE Foundation/Jacket Installation

Consider this Statement from Scottish Power Renewables:

> *East Anglia ONE Engineers: Jacket In*
>
> *12/06/2018*
>
> *ScottishPower Renewables has announced that the first two of 102 jacket foundations for the East Anglia ONE offshore windfarm have been installed in the Southern North Sea, over 50km from the Lowestoft coast.*
>
> *Main Contractor Van Oord, using the new purpose-built Bokalift 1 vessel, successfully installed the 840-tonne steel structure. The foundation jacket is 65 metres tall, and will eventually support the tower, blades and nacelle of the wind turbine.*[79]

The scale of this endeavour can be seen in Figure 7 where a 65m tall jacket is being lowered into position. To put this into perspective, the proposed WIS foundations range between 20m and 40m tall, on average, half the height of those used for East Anglia ONE.

[77] C-2739, ScottishPower Renewables Article entitled "East Anglia ONE – Offshore construction commences" (August 31, 2018).
[78] Appendix I of CER-Wood.
[79] C-2731, Scottish Power Renewables Article entitled "East Anglia ONE Engineers: Jacket In" (June 12, 2018).

Figure 7 – East Anglia ONE Jackets

As noted above in the August 2018 statement from ScottishPower Renewables, prior to installation of the jackets, three foundation piles per jacket had to be piled onto the seabed onto which the jacket had to be placed in water depths of 31m to 53m[80]. That is, 306 precision piling operations in total were installed before installation of the jackets commenced. This is a completely different foundation design concept compared to that proposed for WIS and is on a much larger scale.

WIS does not require any precision piling operations nor does it require construction of a purpose-built vessel to install the GBFs in water depths of between 10m and 30m as the GBFs are towed into position by tug and sunk to the lakebed.

It is worth noting that installation of East Anglia ONE WTG foundation piles began in April 2018[81] and the last jacket was installed in July 2019[82]. The first WTG was installed in June 2019[83] and the last on April 2020[84]. Therefore, offshore installation works for the 102 x 7MW WTGs of East Anglia ONE offshore wind farm were completed in 24 months. The same

[80] C-2592, The Planning Inspectorate YR Arolygiaeth Gynllunio: The Planning Act 2008, East Anglia One Offshore Wind Farm Examining Authority's Report of Finding and Conclusions and Recommendation to the Secretary of State for Energy and Climate Change (March 18, 2014).
[81] C-2724, Offshore Wind Article entitled "Bokalift 1 Starts Installing East Anglia ONE Pin Piles" (April 16, 2018).
[82] C-2752, Subsea World News Article entitled "Van Oord Completes East Anglia ONE Foundations" (July 18, 2019).
[83] C-2750, NS Energy Article entitled "ScottishPower Renewables installs first turbine at East Anglia ONE offshore wind farm" (June 26, 2019).
[84] C-2766, ScottishPower Renewables Article entitled "Turbine Installation Complete on East Anglia ONE Offshore Windfarm" (April 29, 2020).

installation period duration proposed for WIS that has 66 WTGs compared to 102 at East Anglia ONE.

4.7.5 East Anglia ONE WTG Installation

Figure 8 shows installation of a 75m long blade on one of the 7MW WTGs at East Anglia ONE using a jack-up vessel, to help demonstrate the significantly larger scale of UK Round 3 projects and others in the North Sea.

Figure 8 – Turbine Installation at East Anglia ONE[85]

Compare the means of WTG installation in Figure 8, with that used to install WTGs at Fryslan Wind Farm, in Figure 9. This is discussed in detail in Section 3.1 of CER-Baird-3 where existing barges were converted to form a platform to support a crane normally used for onshore operations, such as installing WTGs for onshore wind farms.

The platform in Figure 9 is not lifted out of the water; it floats on the lake surface and is stabilised by applying equal pressure to the legs resting on the lakebed. Compare this to Figure 8, where the jack-up barge used to install the East Anglia ONE WTGs is raised out of the sea, by necessity, due to metocean conditions. The legs supporting the jack-up vessel are of a comparable length to the jacket shown in Figure 7, approximately 65m. It is also worth

[85] C-2749, ScottishPower Renewables Article entitled "ScottishPower Renewables Celebrates First Turbine Being Installed For East Anglia ONE Windfarm" (June 25, 2019).

noting from Figure 9, that, in the background, a second WTG is being installed in parallel, to reduce the WTG installation time.

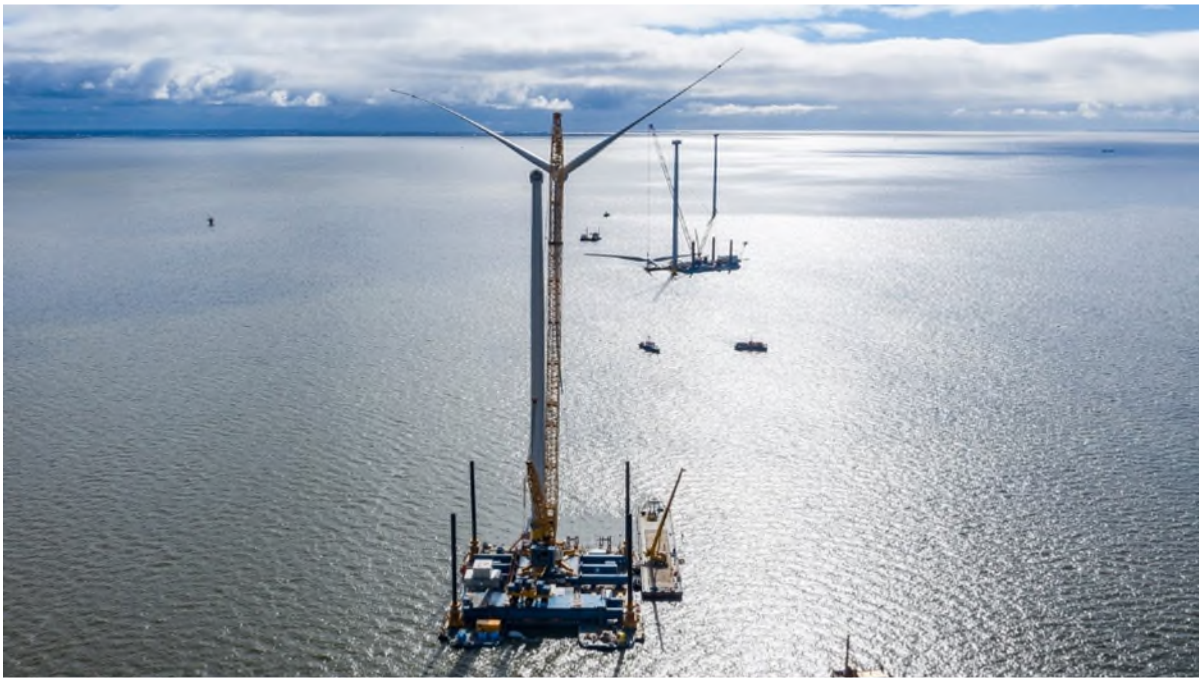


Figure 9 – Turbine Installation at Fryslan Wind Farm, Lake Ijssel, Netherlands[86]

89 x Siemens Gamesa SWT-DD-130 WTGs, rated at 4.3MW were employed at Fryslan Wind Farm with an effective hub height of 115m[87]. WIS proposed to install 66 similarly rated Siemens Gamesa WTGs, the SGRE-4.5-145, rated at 4.5MW with an effective hub height of 100m. In Section 3.1 of CER-Baird-3, it is stated that the engineering team working on WIS has first-hand experience of developing WTG installation solutions where industry standard jack-up vessels cannot be utilised. Therefore, a similar installation concept could be developed for WTG installation at WIS, removing the need for a more expensive jack-up barge solution and reducing overall Capex.

4.7.6 Conclusions from East Anglia ONE Development

ScottishPower Renewables was awarded a zone development agreement for development Zone 5, East Anglia (see Figures 5 and 6), in January 2010, further to competitively bidding for development rights. Just over five years later, ScottishPower Renewables obtained a CFD for East Anglia ONE in February 2015. This development duration reflects the power price uncertainty that prevailed in the transition for the RO to the CFD support mechanisms (discussed in Section 4.1.2.1 of this report) and the time consuming metocean and seabed

[86] C-2779, Power Technology Article entitled "Fryslan Wind Farm, Ijsselmeer" (March 31, 2021).
[87] C-2785, Windpark Fryslan Article entitled "The Wind Farm – Energy for 500,000 Households" (December 31, 2021).

surveys required to inform a CFD bid. This is typical of Round 3 offshore wind development and is not comparable to development of WIS.

The scale and complexity of East Anglia ONE, and the fact that it was the first phase of proposed larger phases within the East Anglia offshore wind development zone, were responsible for the project taking just over five years from receiving its CFD to commercial operation. This is typical of Round 3 offshore wind development and is not comparable to development of WIS.

The scale of East Anglia ONE and other similarly large offshore wind farms in the North Sea, inherently require a longer development timeline and are not comparable to WIS.

4.8 5 Year Timeline is not Best in Class

In paragraphs 98 to 105 and 51 of RER-Jérôme Guillet, Dr. Guillet concludes that a five-year timeline for taking an offshore wind farm from fully permitted to commercial operation is "best in class". Presumably, this is based on the observation in paragraph 102 that states that the fastest time for taking an offshore wind farm from fully permitted to commercial operation was achieved by Borssele Wind Farm and this was 4.5 years, given that all the other offshore wind farm projects listed either took or are projected to take more than five years to progress from fully permitted to commercial operation.

Figure 10 is taken from FINANCING OFFSHORE WIND – PART 5 April 4, 2022 by Jérôme Guillet.

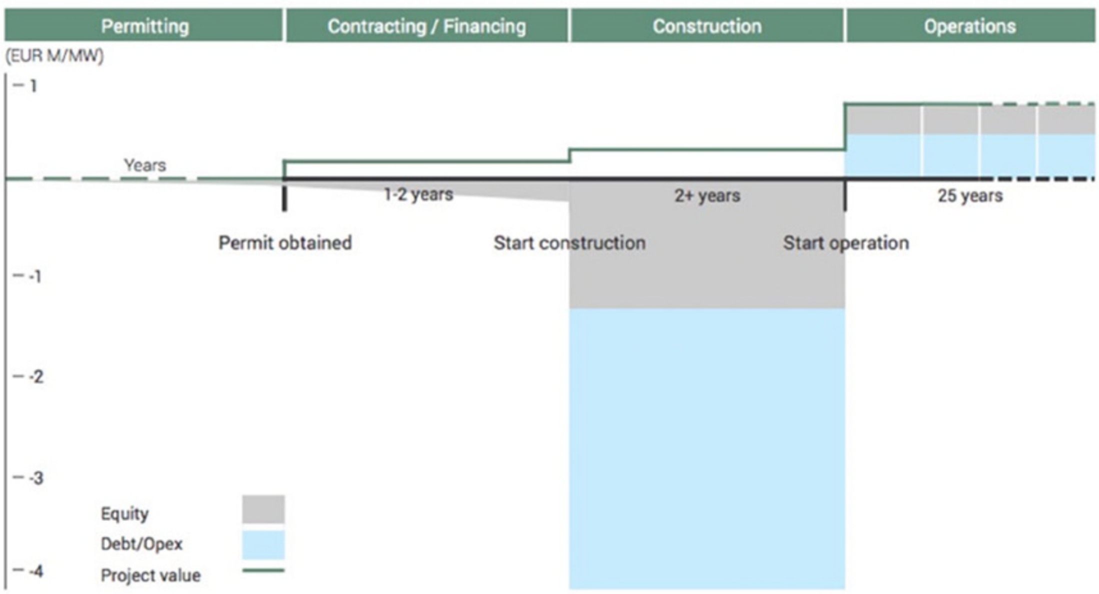


Figure 10 – Project Development Cycle[88]

[88] C-2791, World Forum Offshore Wind Article entitled "Financing Offshore Wind – Part 5" (April 4, 2022).

Figure 10, referenced in a blog post by Dr. Guillet, suggests that it takes 3 to 4+ years to take an offshore wind farm from obtaining permits to commercial operation. However, Figure 10 states that, further to obtaining what is presumably a construction permit, 1 – 2 years is spent in the contracting/permitting phase, but it is not clear when financial close occurs. If financial close occurs at the end of the contracting/financing phase then Figure 10 indicates that it takes 2+ years to achieve commercial operation from financial close, which aligns with Fryslan Offshore Wind Farm, discussed in Section 5.3 of this report. If financial close aligns with the end of the permitting phase then Figure 10 indicates that it takes 3 to 4+ years to achieve commercial operation from financial close, which aligns with Thanet Offshore Wind Farm, discussed in Section 4.6 of this report.

As discussed in Section 4.6 of this report, Thanet offshore wind farm, a UK Round 2 project, took 3.5 years to progress from gaining permits to commercial operation. As financial close would occur after obtaining permits, the actual time to progress from financial close to commercial operation would be less than 3.5 years. Thanet was completed in 2010 and 100 monopile foundations and WTGs were installed in the North Sea, more installations in a more hostile environment than Lake Ontario. Therefore, Dr. Guillet's assertion that a five-year timeline for taking an offshore wind farm from fully permitted to commercial operation is "best-in-class" is incorrect, as it was beaten by over 1.5 years over a decade ago.

Additionally, Dr. Guillet, must have previously agreed with the inference from Figure 10 that it could take 3 to 4+ years to take an offshore wind farm from fully permitted to commercial operation. The source of Figure 10 is dated April 2019[89], yet by December 2022, in RER-Jérôme Guillet, Dr. Guillet believes that taking five years to progress from fully permitted to commercial operation is best in class.

As discussed in Section 4.1.3 of this report, Green Giraffe was the financial adviser for the 383MW Fryslan and 144MW Westermeerwind Offshore Wind Farms, located in the freshwater Lake Ijssel, the Netherlands.

It took 1.9 years from financial close for Westermeerwind to achieve commercial operation and 2.2 years from financial close for Fryslan to achieve commercial operation and install a third more WTGs than proposed for WIS, see Sections 5.3 and 5.4 of this report. Dr. Guillet was the managing director of Green Giraffe when Fryslan and Westermeerwind achieved financial close, yet these projects do not feature in the analysis in RER-Jérôme Guillet. Those projects that do feature in the analysis in RER-Jérôme Guillet are far less comparable to WIS

[89] C-2791, World Forum Offshore Wind Article entitled "Financing Offshore Wind – Part 5" (April 4, 2022).

than Fryslan, that is in a freshwater lake and composed of similarly rated WTGs to those proposed for WIS.

The projects listed in Tables 10 and 11 of RER-Jérôme Guillet are listed in Table 3 below along with relevant details of the projects. WIS details are shown in red for comparison.

Table 3 – Offshore Wind Farms used to draw 5 year "best in class" Conclusion					
Project	**Rated Capacity (MW)**	**Foundation**	**Location**	**Water Depth (m)**	**Distance from Shore (km)**
Kriegers Flak	605	Jacket	Baltic Sea	17 to 42	30
He Dreiht	900	Monopile	North Sea	38 to 41	90 to 110
Borssele 1-2	752	Monopile	North Sea	Up to 38	22
Borssele 3-4	731.5	Monopile	North Sea	16 to 38	22
Moray Firth	950	Jacket	North Sea	Up to 54	22
Triton Knoll	857	Monopile	North Sea	18 to 24	33
Dogger Bank A&B	2400	Monopile	North Sea	18 to 63 (Development Zone)	130+
Seagreen	1075	Monopile	North Sea	Up to 59	27
Wolfe Island Shoals	**300**	**GBF**	**Lake Ontario**	**10 to 30**	**5 to 15**

While RER-Jérôme Guillet does not define what "class" is in the "best in class" conclusion, the characteristics of the projects listed in Table 3 can assist with development of a definition of the class of project being referred to, namely:

- Project Rated Capacity: 605MW to 2400MW
- Foundation: Monopile or Jacket
- Location: North Sea or Baltic Sea
- Water Depth: 16m to 63m
- Distance from Shore: 22km to 130km+

Therefore, the "class" of projects being used to benchmark WIS are 1.5 to 24 times larger than WIS, are located largely in the North Sea in significantly deeper water than WIS (Seagreen claims to be the world's deepest fixed-bottom offshore wind farm[90]) and are up to 130km from

[90] C-2800, Electrek Green Energy Newsletter entitled: "The world's deepest fixed-bottom offshore wind farm produces first power" (August 23, 2022).

shore. Being 300MW, 5km from shore, in a freshwater lake, and employing GBFs, WIS does not belong in this class of projects.

It is reasonable to use the experience of offshore wind farms A, B and C to opine on the outcomes of offshore wind farm X, where the characteristics of offshore wind farms A, B and C are comparable to offshore wind farm X.

Dr. Guillet has not done this in his analysis, despite having first-hand experience of Fryslan Offshore Wind Farm, that is more comparable to WIS than any of the offshore wind farms discussed in RER-Jérôme Guillet. Therefore, Dr. Guillet's assertion that a five-year timeline for taking an offshore wind farm from fully permitted to commercial operation is "best in class" with regard to WIS is not credible.

4.9 8 to 10 Year Development Timelines are Misleading

At paragraph 104 of RER-Jérôme Guillet, the UK Round 3 projects, discussed at paragraph 51 of RER-Jérôme Guillet are reintroduced:

> 104. Note that these projects are all "Round 3" projects and started their development process in 2009, i.e. 8 to 10 years earlier (see paragraph 51 for the full list of projects from that round of permitting, which, as its name indicates, was the third round of permitting in what was, and still is, the most advanced country for offshore wind).

As noted above, UK Round 3 projects, as per the list in RER-Jérôme Guillet, aim to deliver 24, 700MW in 7 projects, with an average project size of 3529MW. Some projects were abandoned, some have consent, some are under construction and some are operational. The UK Round 3 projects listed in RER-Jérôme Guillet range from 600MW to 7200MW.

As explained in Sections 4.1.2.2 and 4.7.6 of this report, the extended development process of Round 3 offshore wind farms occurred as a result of the scale and location of UK Round 3 projects requiring extensive survey and detailed design work to inform the CFD bids, that were announced in four allocations between February 2015 and July 2022.

This explains the inference in paragraph 104 of RER-Jérôme Guillet that the offshore wind farm development process can take 8 to 10 years. As the WIS development process is quite different to this, makes it misleading to suggest this timescale would apply to WIS.

4.10 Conclusions

The use of UK Round 3 Offshore Wind Projects and other offshore wind projects in the North Sea and the Atlantic Ocean in RER-Jérôme Guillet to predict the outcome of WIS, had it been allowed to progress through development and construction, is not credible as the scale, proposed technology, metocean conditions, distance to shore and water depth of UK Round 3 offshore projects make these inappropriate comparators to WIS.

Consequently, conclusions in RER-Jérôme Guillet derived from comparison of WIS with large projects in the North Sea, and similarly challenging offshore environments, are misleading.

It is inappropriate and misleading infer that WIS will require five years to progress from being fully permitted to commercial operation based on a selection of offshore wind projects that are not comparable to WIS, as per paragraph 105 of RER-Jérôme Guillet:

> 105. Altogether, this means that 5 years is a "best-in-class" case for the timeline from fully permitted to COD, and lenders will in any case require an additional year of buffer. Add the time to get to "fully permitted" from the circumstances of the project in 2016 or 2020, and it is highly unlikely that a 5-year timeline could be achieved by the Project given its situation, where it is still far from being "fully permitted" and in an immature market.

The offshore wind projects used to draw this conclusion are not comparable to WIS.

The 58-month WIS schedule produced by Wood, an experienced offshore wind consultancy, was supported by relevant experts, was based on the site-specifics of WIS being constructed in Lake Ontario, was based on precedent, and is realistic and robust.

By reviewing the development timelines of offshore wind farms that are more comparable to WIS in terms of technology and location, such as Rodsand I, Rodsand II, Westermeerwind and Fryslan discussed at Sections 5.2, 5.3 and 5.4 of this report, it is reasonable to conclude that the WIS schedule is realistic not "best in class".

5 Project Construction Precedent Set by Comparable Offshore Wind Farms

5.1 Baltic Sea Offshore Wind Farms are Comparable to WIS

Offshore wind farm development in the Baltic Sea was cited in multiple documents submitted for NAFTA1 and NAFTA2 as being representative of WIS. Specific offshore wind farm projects operating in the Baltic Sea were named in multiple documents submitted for NAFTA1 and NAFTA2. However, RER-Jérôme Guillet does not consider the development of these projects in forming views of the likely outcome of the development of WIS.

By reviewing the development timelines of offshore wind farms in the Baltic Sea that are more comparable to WIS in terms of technology and location, it is reasonable to conclude that the WIS schedule is realistic.

Windstream commissioned Wood to prepare a feasibility study for WIS. Section 2 of CER-Wood presents offshore wind case studies and in Section 2.3.1 of CER-Wood, reproduced below, Wood advises that offshore wind projects in the Baltic Sea are good comparators to WIS.

2.3.1 Baltic Sea

Since the Baltic Sea has low salinity, or salt concentration, comparable water depths and more benign metocean conditions compared to ocean environments such as the North Sea or Atlantic Ocean, it is similar to freshwater or lake environments. Offshore projects in the Baltic Sea are therefore good comparators to the Project.

Windstream commissioned Baird to conduct and independent review of the technical and permitting feasibility of WIS with regard to the Lake Ontario marine environment and permitting requirements. Section 7.1 of CER-Baird (Expert Report of W.F. Baird & Associates Coastal Engineers Ltd.) states:

It has been found that the physical oceanographic conditions in Lake Ontario and the Baltic Sea are sufficiently similar to support direct comparisons of likely impacts from an offshore wind farm. There is no evidence to suggest that impact assessment methods or tools developed for use on offshore wind farms in the Baltic Sea are inapplicable to Lake Ontario.

Development of offshore wind farms in the Baltic Sea that are comparable to WIS should be studied to gain an insight to the likely outcome of the development of WIS.

Appendix D, Table D-1 of CER-Wood, reproduced below, presents COWI's extensive experience regarding design of GBFs, which includes three operational offshore wind farms in the Baltic Sea.

Table D-1: COWI Gravity based Foundation Design Project Experience

Project	Design Level / Project Status	Details (Country / Characteristics)
Thornton Bank Phase 1	Detailed Design / Installed	Belgium, (2006-2009): Detailed design, 6 GBF of the conical type for REpower 5 MW wind turbines. Water depth 21-27 m lowest astronomical tide (LAT).
Kårehamn	Detailed Design / Installed	Sweden (2012-2013): Detailed design, 16 GBF for Vestas 3 MW wind turbines at 8m -21 m mean sea level (MSL) water depth in the Baltic Sea near Øland in Sweden.
Nysted	Detailed Design / Installed	Denmark (2001-2002): Detailed design, 72 GBF for Siemens 2.3 MW wind turbines and 1 OSS foundation Water depth 5 – 13 m MSL.
Rødsand 2	Detailed Design / Installed	Denmark (2001-2002): Detailed design, 90 GBF for Siemens 2.3 MW wind turbines and 1 OSS foundation. Water depth 5 – 13 m MSL.

Development of Nysted and Rodsand 2 is discussed in Section 5.2.

5.2 Nysted and Rodsand II

Nysted (Rodsand I) 72 x 2.3MW WTGs (165MW) and Rodsand II 90 x 2.3MW WTGs (207MW) are located in the Baltic Sea and are of a comparable size to the proposed WIS offshore wind farm, which is 300MW and composed of 66 WTGs.

The location of Nysted and Rodsand II in the Baltic Sea is shown in Figure 11. Figure 11 also shows the location of Nysted, Rodsand II, Fryland and Westermeerwind, the subject of Sections 5.3 and 5.4, in relation to other North Sea offshore wind development zones.

The orange areas in Figure 11 are offshore wind farm development areas in UK territorial waters. The yellow areas in Figure 11 are offshore wind farm development areas in German territorial waters, that are noticeably, significantly farther form shore compared to other offshore wind development in the North Sea.

In Section 4 of this report, I have demonstrated, where possible quantitively, that the offshore wind projects used in RER-Jérôme Guillet are more challenging than WIS due to their scale and location. In my opinion, Figure 11 illustrates this graphically. That is, Figure 11 suggests that building offshore wind farms in the orange and yellow areas of Figure 11 is going to be harder than doing so at the locations of Nysted, Rodsand II, Fryland and Westermeerwind offshore wind farms.

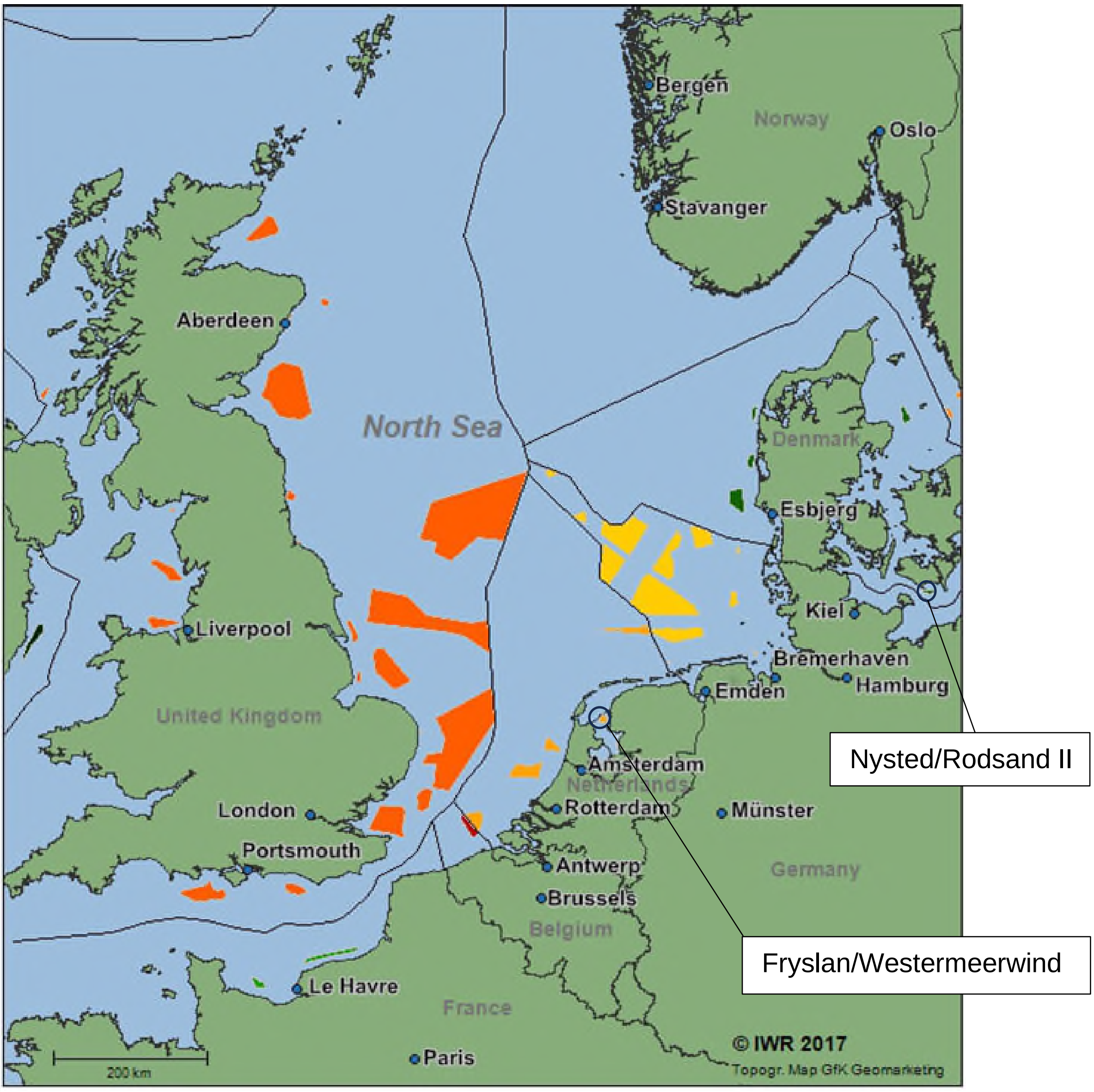


Figure 11 – Nysted/Rodsand II and Fryslan/Westermeerwind Wind Farm Locations[91]

At the time of its construction, Nysted was the largest wind farm in the world[92] and the largest wind farm in the world to employ GBFs. Nothing at this scale had previously been attempted in the offshore environment. Further points to note from the Nysted reference document[93]:

> *Excavation for the foundation works began in June 2002 and by the end of 2002 one third (24) of the foundations were installed and ultimately, **all foundations were installed one month early**.*

[91] C-2664, Offshore-Windindustry.com Article entitled "Offshore Wind Farms in Europe" (December 31, 2016).
[92] C-2546, Paper published by P. Volund, P.H. Pedersen and P.E. Ter-Borch entitled "165 MW Offshore wind Farm. First year of operation – performance as planned." (November 30, 2004).
[93] C-2546, Paper published by P. Volund, P.H. Pedersen and P.E. Ter-Borch entitled "165 MW Offshore wind Farm. First year of operation – performance as planned." (November 30, 2004).

> *Turbine installation began on 09 May 2003 and within 79 days (including weather delays) 72 WTGs were installed without major problems.*
>
> *The first turbine was running mid July 2003 and all were operational by mid-September 2003.*
>
> *Final commissioning of the 72 WTGs was completed by 01 December 2003, **1 month earlier than scheduled**.*
>
> ***The Nysted schedule was completed on time and to budget.***

The Nysted construction was completed in 19 months and is comparable to the construction schedule proposed for WIS.

A similar experience was observed regarding construction of Rodsand II, that began over 5 years after the completion of Rodsand I:

> *Rødsand II Wind Farm is a 207MW project to the south of the island of Lolland in Baltic Sea. It is an extension of the 166MW Rødsand I Wind farm that was commissioned in 2004. Also known as Nys[t]ed Wind Farm, Rødsand I and II are listed among the largest wind farms in the world. The plants are owned and operated by E.ON Climate & Renewables.*
>
> *Estimated at $554m, the Rødsand II project was approved in 2008. Construction of the wind farm began in the second quarter of 2009. The plant became operational in August 2010 and was fully commissioned in October 2010, **six months ahead of schedule**.*[94]

It took 19 months to install 90 foundations and WTGs for Rodsand II.

Rodsand I and Rodsand II are more reasonable projects to compare the construction schedule of WIS to as they are, like WIS, located in a more benign environment compared to the North Sea. More importantly, Rodsand I and Rodsand II employed GBFs, exploiting the benefits of this foundation design compared to jackets or monopiles, which are discussed further below.

That Rodsand I was completed in 2003 and Rodsand II in 2010 and given WIS is proposing a similar installation strategy in a similarly benign environment, makes the schedule proposed by Windstream realistic, not best in class.

This is particularly apparent when one considers that that the 66 WTGs for WIS are planned to be installed over a longer period than it took for 72 WTGs for Rodsand I and 90 WTGs for

[94] C-2589, Power Technology Article entitled “Rodsand II Wind Farm, Denmark” (November 28, 2013).

Rodsand II, both of which also required installation of an offshore transformer facility, whereas WIS does not as it intended to install its transformer facility on Pigeon Island.

5.3 Fryslan Offshore Wind Farm, Lake Ijssel, Netherlands

Fryslan Offshore Wind Farm, the location of which is shown in Figure 11, is the largest wind farm in the world in an inland water[95]. It employs 89 x Siemens Gamesa SWT-DD-130 WTGs, rated at 4.3MW with an effective hub height of 115m[96] in water depths ranging from 3m to 6m[97]. Rated capacity is 382.7MW. WIS proposed to install similarly rated Siemens Gamesa WTGs, the SGRE-4.5-145, rated at 4.5MW with an effective hub height of 100m.

Fryslan Offshore Wind Farm is comparable to WIS. The key differences are that Fryslan Wind Farm utilises steel monopiles, approximately 28m in length[98] and is in 3m to 6m of water compared to WIS that utilises GBFs and is in 10m to 30m of water.

> *Construction of the wind farm began in early 2019 after approval was secured from the Dutch Council of State in June 2018. By March 2019, pipes had been laid between Ijsselmeer and Breezanddijk via underground drilling. Power cables were laid between July 2019 and August 2020 to facilitate transmission of the generated energy from the offshore site to the onshore substation in Breezanddijk. Installation of the foundations was started in September 2020 and completed in January 2021. The installation of the inter-array cables was commenced in December 2020 and completed in February 2021. The final phase of the wind farm's construction began in March 2021, with the installation of the first wind turbine. The rest of the turbines will be shipped, installed and tested between March and June 2021[99].*

As noted above, approval was secured in June 2018. In 2018, Van Oord had already started soil investigations, installed ducts to connect the WTGs to the grid transformer and had begun to lay power cables prior to Financial Close, that occurred in October 2019[100].

Installation of 89 monopile foundations began in September 2020 and was completed in January 2021, less than five months.

Turbine installation began in March 2021 and was completed in December 2021 further to being held up by Covid and adverse weather[101], a total duration of 10 months. Commissioning

[95] C-2785, Windpark Fryslan Article entitled "The Wind Farm – Energy for 500,000 Households" (December 31, 2021).
[96] C-2785, Windpark Fryslan Article entitled "The Wind Farm – Energy for 500,000 Households" (December 31, 2021).
[97] C-2736, NS Energy Article entitled "Fryslan Wind Farm, Friesland" (August 31, 2018).
[98] C-2785, Windpark Fryslan Article entitled "The Wind Farm – Energy for 500,000 Households" (December 31, 2021).
[99] C-2779, Power Technology Article entitled "Fryslan Wind Farm, Ijsselmeer" (March 31, 2021).
[100] C-2755, Power Technology Article entitled "Zuiderzeewind's Windpark Fryslân in Netherlands secures funding" (October 3, 2019).
[101] C-2784, Recharge News Article entitled "World's largest wind farm on a lake commissioned in Netherlands" (December 13, 2021).

appears to have been expected in June 2021, but overran by 6 months due to Covid-19 and adverse weather.

It took 42 months or 3.5 years from obtaining approvals for Fryslan to achieve commercial operation.

Installation of 89 monopile foundations and 89 WTGs took less than 16 months at Fryslan Offshore Wind Farm. It is difficult to quantify the impact that Covid-19 and adverse weather had on construction of Fryslan. However, it appears to be between three and six months.

WIS proposes 24 months for installation of 66 GBFs and WTGs. In practice, this is 18 months due to Lake Ontario being icebound. This is a longer construction period than Fryslan with three quarters of the number of WTGs

Therefore, further to financial close, it took 26 months to install 89 monopile foundations and WTGs, during the Covid-19 pandemic. That is 2.2 years to install a third more WTGs than proposed for WIS.

It is also worth noting that the developer of Fryslan undertook engineering works prior to financial close to accelerate the construction process, a strategy proposed for WIS.

5.4 Westermeerwind Offshore Wind Farm, Lake Ijssel, Netherlands

Westermeerwind Offshore Wind Farm, the location of which is shown in Figure 11, employs 48 x Siemens Gamesa SWT-3.0-108 WTGs, rated at 3MW with an effective hub height of 79.5m in water depths ranging from 3m to 7m[102]. Rated capacity is 144MW.

Westermeerwind Offshore Wind Farm is less comparable to WIS, due to the smaller WTG rating, fewer WTGs and different foundation solution. However, being located in a lake makes it worth discussing.

> *The Westermeerwind wind farm was officially opened in June 2016. The wind project is owned by Westermeerwind, a special purpose company founded in 1996 by two farmers from Creil, Pieter Meulendijks and Tjitte de Groot, to build an offshore wind farm along the Westermeer and Noordermeer dikes in the IJsselmeer.*
>
> *Financial closure for the Westermeerwind project was reached in July 2014, following which the turnkey construction order for the project was awarded to Siemens. A 15-year power purchase agreement with Eneco was signed in the same month.*

[102] C-2636, Power Technology Article entitled “Westermeerwind Wind Farm” (July 17, 2016).

> *The Westermeerwind wind farm project achieved full power in March 2016. The project, consisting of 48 wind turbines each with 3MW capacity, powers 160,000 homes*
>
> *Siemens was awarded the turnkey contract for the wind farm in July 2014. The contractual scope also includes 15 years of comprehensive maintenance of the wind farm by Siemens*[103]*.*

It is worth noting that Westermeerwind Offshore Wind Farm was originally developed by two farmers, not experienced offshore wind farm developers.

It is also worth noting that Siemens was awarded a turnkey contract for the wind farm and a 15-year power purchase agreement was signed with Eneco in July 2014, the same month in which FC was achieved.

Finally, from FC in July 2014, it took until March 2016 to install the last WTG and as it was officially opened in June 2016, this will be taken as the COD. That is 23 months or 1.9 years.

5.5 Conclusions

Comparable projects to WIS, namely Rodsand I and II, were completed on budget and ahead of schedule over a decade ago, using similar GBF technology to that proposed for WIS.

Large offshore wind farms located in the freshwater Lake Ijssel, the Netherlands, namely Fryslan and Westermeerwind were completed in comparable timescales to that proposed for WIS in 2016 and 2021 respectively.

It took 2.2 years to install a third more similarly rated WTGs and foundations at Fryslan than is proposed for WIS. This fact supports the robustness of the Wood Schedule.

RER-Jérôme Guillet has not referenced any of the offshore wind projects discussed in Sections 5.2, 5.3 and 5.4 of this report, that are comparable to WIS and could give an insight to outcome of WIS had it been allowed to progress through development, construction and operation. Therefore, the conclusions made in RER-Jérôme Guillet regarding the outcome of WIS, had it been allowed to progress through development, construction and operation are not credible.

[103] C-2636, Power Technology Article entitled “Westermeerwind Wind Farm” (July 17, 2016).

6 Aggressive Project Timing Assumptions

6.1 Introduction

RER-Jérôme Guillet makes repeated comments regarding the WIS development and construction schedule, which was developed by Wood in association with the core team of experts retained by Windstream. The WIS development and construction schedule is described as highly optimistic, heroic, accelerated and best in class. These comments can be found at paragraphs 34, 40, 124, 126, 127, 128, 155, 156, 159, 194, 195, 196, 197 and 225 of RER-Jérôme Guillet.

RER-Jérôme Guillet does not appear to recognise the site-specific benefits of WIS compared to the North Sea, nor the benefits of employing GBFs rather than monopiles, electing to make comparisons with unrepresentative offshore projects, as discussed in Section 4 of this report.

In this Section of my report, I respond to the comments on the Wood Schedule raised in RER-Jérôme Guillet. My comments are divided as follows:

- Section 6.2 highlights the scheduling benefits of construction of an offshore wind farm in Lake Ontario, including the benefits of using GBFs.
- Section 6.3 explains why the permitting process is realistic, not rapid.
- Section 6.4 addresses the errors in interpretation of the Wood Schedule made in the many comments regarding development and construction of WIS.

6.2 Scheduling Advantages of WIS

The design of WIS in Lake Ontario has multiple advantages compared to the offshore wind projects located in the North Sea or the Eastern Seaboard of the USA. That these advantages have not been considered in RER-Jérôme Guillet is a critical omission when determining the feasibility of WIS and the Project schedule.

As discussed below, the advantages of the WIS design and location in Lake Ontario offer lower costs, faster construction and significantly lowers the risk profile of WIS, compared to the offshore wind projects in the North Sea or Eastern Seaboard of the USA.

In Section 10.4 of CER-Wood, Wood states:

Wood concludes that the Project is feasible, less technically challenging than some European projects of similar size, and presents several advantages:

- Well established regional supply chain for raw and finished steel and concrete products.
- Established multi-mode transportation system with a track record of supporting wind projects in immediate vicinity.
- Proximity to robust grid connection point.
- Comparatively benign metocean (wind, wave, current, ice) conditions.
- Island based offshore substation.
- Submarine cable installation directly on lakebed, avoiding cable burial costs.
- Geologic conditions suitable for gravity foundation installation.

In Section 3.1 of CER-Baird-3, Baird states:

> *In many ways freshwater conditions pose fewer challenges than saltwater, including: less corrosion than in salt water, custom lifting solutions that offer more efficient solutions (and lower cost), a higher energy yield than comparable onshore windfarms, lower wind/wave fatigue loads, and less extreme metocean conditions.*

To these advantages, consider the benefits of using GBFs[104,105,106]:

- *Manufacture of GBFs is undertaken on the quay side and does not require a Capex-heavy factory. All that is needed is a construction site to carry out the civil works.*
- *The GBF will rest on the lakebed, necessitating limited preparation work to the site.*
- *GBFs can be installed without using driven piles and the vessels required to facilitate installation, namely jack-up vessels, offshore cranes and hammers. This is a critical benefit, as the cost of drilling and piling is avoided. Additionally, as significant cost overruns have been caused by pile refusal, that is, the pile simply cannot be driven into the seabed, this major project risk is also avoided.*
- *GBFs can be installed at a much faster rate than monopiles or jacket foundations offering significant Capex savings. Furthermore, adding more towing vessels can accelerate construction.*

The advantages of the WIS design and location offer lower costs, faster construction and significantly lowers the risk profile of WIS, compared to the offshore wind projects discussed in paragraphs 100 to 102 of RER-Jérôme Guillet.

[104] C-2585, Reuters Events Article entitled "Gravity base foundations: building on advantages and new innovation" (July 8, 2013).
[105] C-2622, MPA – The Concrete Centre Article entitled "Offshore wind: Concrete gravity foundations" (December 31, 2014).
[106] C-2777, Windpower Engineering & Development Article entitled "Comparing offshore wind turbine foundations" (January 4, 2021)

6.3 Rapid Permitting Process

A rapid permitting process is stated as one of the very aggressive project timing assumptions at paragraph 34 of RER-Jérôme Guillet. However, RER-Jérôme Guillet does not explain why the WIS permitting process is rapid.

As noted in Section 2.6 of this report, a presentation given by the Ontario Ministry of Natural Resources (MNR) in 2010[107] on the topic of offshore wind power development in Ontario, stated that Ontario's Green Energy Act was designed to ***provide investor certainty by establishing a provincial, streamlined approval process***, making specific reference to WIS.

In section 10.3 of CER-Wood, Wood advised that the permitting process for a large renewable energy project in Ontario is expected to have a 36-month duration[108]. This is based on WSP's experience of permitting renewable energy projects ins Ontario.

Individual tasks associated with the Renewable Energy Approval process for WIS are listed in the Wood Schedule and these tasks run from 18 February 2020 (line 10) to 02 August 2022 (line 67). An appeal period is included at line 68 that runs to 19 August 2022. Provision is also included for a REA Environmental Review Tribunal Process, that could extend to 20 February 2023.

The WIS permitting process is not considered to be rapid. In my opinion, it is realistic to base these schedules on precedent for permitting onshore wind farms in Ontario, allowing sufficient float to address potential sources of delay, as the Wood Schedule does.

6.4 WIS Project Schedule

The detail of Wood's WIS project schedule, Appendix B of CER-Wood (the Wood Schedule), does not appear to have been addressed at all in RER-Jérôme Guillet.

Consider paragraph 124 of RER-Jérôme Guillet:

[107] C-2559, Ministry of Natural Resources – Offshore Windpower Development in Ontario: Provincial Update and Ontario's First Purchase Agreement – Great Lakes Wind Collaborative 3rd Annual Meeting (September 1, 2010).
[108] Section 10.3 of CER-Wood.

124. More importantly, the assumed schedule only includes 2 constructions seasons, with no period for fabrication before that, and almost no time buffer for unforeseen events. There is only a gap of 2 months between assumed COD - in what can only be described as an optimistic equity case - and the MCOD, in the middle of winter (which is not a favorable season for construction activities in the middle of a large lake). The MCOD deadline, as noted previously (see paragraph 95) triggers a "cliff effect" as FIT Contract termination is possible if COD has not occurred on or before the date which is 18 months after the MCOD at the sole discretion of IESO, i.e. beyond the control of the Project or its lenders. This is a totally unrealistic assumption as far as any debt funding (or even any equity funding by financial investors) is concerned: this is not something that would ever be acceptable to lenders, even in the more experienced period of today.

My response can be summarized as follows:

- **The schedule prepared by Wood considers two construction seasons to be adequate based on its extensive offshore wind experience. The precedent set by Nysted and Rodsand II, as discussed in Section 5.2, the precedent set by Fryslan, as discussed in Section 5.3, the precedent set by Westermeerwind, as discussed in Section 5.4, along with the scheduling benefits of using GBFs discussed in Section 6.2, support the assertion that two construction seasons are adequate to build WIS.**
- **While there is a gap of two months between COD and MCOD, adequate float has been included within the Wood Schedule, making COD on 20 December 24 a worst-case scenario. If the float allowance is not utilised, COD will be achieved earlier.**
- **The WIS FIT Contract allows the MCOD to be extended by up to 24 months for force majeure events and allows Windstream to pay for an extension to the MCOD if it fails to achieve COD due to non-force majeure events.**

Several comments made in paragraph 124 of RER-Jérôme Guillet are not correct.

First, fabrication of all elements required for WIS has been factored into the Wood Schedule that details the development and construction process and draws upon the wider experience of Wood regarding its offshore wind farm expertise and input from the WIS Project participants that can be found at Section 4.1 of CER-Wood.

There is a period for fabrication of GBFs as detailed below:

- Line 302: The GBF manufacturing facility is constructed between 10 December 21 and 15 May 2023.
- Line 323: The GBF reusable formwork is manufactured between 12 December 2022 and 20 February 2023.

- Line 325: GBF manufacture starts on 30 March 2023 and goes on until 30 July 2024. It is unaffected by winter and progresses continuously. GBFs are stored at the staging facility until installation is required.
- Installation of GBFs begins 09 October 23.

There is a period for fabrication of the WTGs as detailed below:

- Line 401: Equipment procurement runs from 20 February 2023 to 27 November 2023.
- Line 402: Tower fabrication runs from 20 February 2023 to 09 July 2024.
- Line 403: WTG components are manufactured between 20 February 2023 and 27 November 2023.
- Line 404: Installation port preparatory works are undertaken between 20 November 2023 and 01 March 2024.

In fact, there are line entries in the Wood Schedule for design, procurement and manufacture of every element of WIS including: GBFs, WTGs, onshore substation, offshore substation, export cable, array cable and the operation and maintenance building.

Second, the statement in paragraph 124 of RER-Jérôme Guillet, that there is no time buffer for unforeseen events is not correct. Section 10.4 of CER-Wood addresses this:

> Float (i.e. time) between construction packages has also been considered within the development of the updated Project schedule. This ensures that sufficient contingency, or space between time is built into the overall Project schedule to ensure that any delays to construction package (i.e. fabrication, installation) are considered appropriately, thus reducing the risk of impacting another dependent construction package. Wood has determined the amount of float required for the Project based on its extensive experience with other offshore wind projects.

In Section 3.3 of this report, it is noted that construction of WIS is proposed to be undertaken when Lake Ontario is ice-free, which is the nine-month period from April to December of each year. During this nine-month construction period, a 25% allowance has been made for mechanical and weather delays, which equates to a schedule float of 2.25 months.

If the float is not used, the Project would achieve COD ahead of the scheduled date 20 December 2024 (line 480 in the Wood Schedule). Note from Section 5.2 of this report that Nysted was completed one month ahead of schedule and Rodsand II was completed six months ahead of schedule, highlighting the benefits of using GBFs.

Further, the Wood Schedule has not been correctly interpreted in paragraphs 125 and 126 of RER-Jérôme Guillet.

Paragraph 126 of RER-Jérôme Guillet states that installation starts in 2022, 2 months prior to FC. This is not correct as installation begins on 03 April 2023, after FC, and starts with preparation of the lakebed.

Line 406 of the Wood Schedule shows the installation phase running between 25 December 2022 and 31 March 2025. However, the installation phase of the project captures winter periods when installation is unlikely to be possible due to Lake Ontario being icebound, specifically

- Line 407: 2023 winter runs from 25 December 2022 to 31 March 2023
- Line 408: 2024 winter runs from 25 December 2023 to 31 March 2024
- Line 409: 2025 winter runs from 25 December 2024 to 31 March 2025

Installation is scheduled for the normally ice-free periods on Lake Ontario, that is between 01 April 2023 and 24 December 2024 and 01 April 2024 and 24 December 2024. These ice-free periods were considered by Baird to be typical[109]. However, it is probable that construction could take place in the shoulders of the typical ice-bound period of 25 December to 31 March due to the effects of climate change[110].

The Wood Schedule contemplates that GBF Installation will take place as follows:

- Line 410: Prepare lakebed 03 April 2023 to 02 October 2023
- Line 414: GBF Installation Season 1 - 09 October 2023 to 27 November 2023
- Line 415: GBF Installation Season 2 - 29 April 2024 to 02 September 2024

The Wood Schedule contemplates that WTG Installation will take place as follows:

- Line 439: 28 May 2024 to 25 November 2024

Therefore, installation is not shown as starting two months prior to FC as suggested in RER-Jérôme Guillet.

COD is shown on the schedule as occurring on the following date:

- Line 480: 20 December 2024

[109] Section 6.3.2 of CER-Baird-2.
[110] C-2758, Paper from the Journal of Great Lakes Research entitled "Lake Ontario ice coverage: Past, present and future" (November 1, 2019).

The Wood Schedule has also been incorrectly interpreted in paragraph 127 of the Guillet Report:

127. In this case, the schedule above further indicates that it's not just financing that would not yet be in place prior to installation, but some of the permits (as the "Permits to Build Offshore Facilities" are indicated to be available only in February 2023), which makes the Project even riskier. Leaving aside the question as to whether installation is even possible prior to all permits being obtained, funding such work prior to FC and to being "fully permitted" is not impossible but is seen as very risky and correspondingly requires extremely expensive, and hard to procure, equity. This is very rarely done in my experience. I am only aware of two projects where this was done: (1) Gemini, where Northland Power agreed to fund the purchase of cables a couple of months prior to FC in order to safeguard the construction schedule for that item (and required daily updates on the progress of the financing: this was followed by their board on an ongoing basis as a subject of the highest priority

My response can be summarized as follows:

- **The Wood Schedule reflects that Windstream expects financing to be in place prior to installation and expects all the required permits to be obtained prior to FC.**

Figure 2-1 of the CER-Secretariat (referred to at paragraph 126 of RER-Jérôme Guillet and reproduced below) is taken from line 2 to line 8 of the Wood Schedule and lists the milestone summary within the Wood Schedule.

Figure 2-1: Key Milestone Dates per Wood Report Development Programme

Milestone	Date
Finalise Layout – Number and Location	Aug 27, 2020
Permits to Operate Wind Farm	May 2, 2022
Permits to Build Substation / Onshore Cabling	Dec 2, 2022
Permits to Build Fabrication Facility	Oct 24, 2022
Permits to Build Offshore Facilities	Feb 15, 2023
Financial Close (FC)	Feb 20, 2023
Commercial Operations Date (COD)	Dec 20, 2024

The milestones in the figure above indicate the end date of the corresponding phase of the Project. In paragraph 127 of RER-Jérôme Guillet it is stated that:

> *…it's not just financing that would not yet be in place prior to installation, but some of the permits (as the "Permits to Build Offshore Facilities" are indicated to be available only in February 2023), which makes the Project even riskier.*

The phase of WIS development summarised by Permits to Build Offshore Facilities is detailed from line 9 to line 283 of the Wood Schedule and lists the numerous permitting and approval tasks that Windstream would have to complete in the 36 months prior to Financial Close.

The project milestones are the dates on which the associated tasks must be completed. Many of the tasks in this phase are scheduled to be completed months before the milestone date. Adequate float has been included in the WIS schedule, making the milestone dates a worst-case scenario. If the float allowance is not utilised, the milestone dates will be achieved earlier.

Further, paragraph 128 of RER-Jérôme Guillet is incorrect:

> 128. Further, as a practical matter, putting together "Design, Procurement and Construction" as a single task in the table above is misleading, as these tasks are largely separate, and successive, and each step is dependent on other items having being achieved (in particular FC for Construction). I also note that the proposed timetable is not internally consistent as it has installation lasting until March 2025 and COD taking place in December 2024, whereas it seems impossible to have COD before the end of installation.

My response can be summarized as follows:

- **Design, procurement and construction is not treated as a single task in the reference document, Appendix B of CER-Wood. Appendix B of CER-Wood does not show COD being before the end of construction.**

Line 285 of the Wood Schedule shows the Design, Procurement and Construction phase running from 18 February 2020 until 06 August 2024, as reproduced in the CER-Secretariat. This **phase** is detailed under line entries 286 to 405 and is composed of 95 individual tasks. Therefore, Design, Procurement and Construction is not being considered as a single task.

95 tasks covering: logistics, ground investigation, GBF facility design and construction, GBF design and construction, electrical infrastructure design, procurement and construction and WTG selection, procurement and fabrication are detailed in CER-Wood, and set out in detail in the Wood Schedule.

As would be expected in a professionally prepared construction schedule, the tasks are arranged logically, with design followed by procurement, procurement followed by fabrication and fabrication followed by installation. A task dependent upon another task being completed is clearly shown as such.

There is nothing misleading about the schedule prepared by Wood. The Wood Schedule makes it clear that the installation **phase** that runs until March 2025. The reason that the period 25 December 2024 to 31 March 2025 is shown in the installation phase is to highlight that Lake Ontario could potentially be icebound during this period, forcing suspension of construction/installation activities on Lake Ontario. These periods are accounted for in the schedule.

As noted above, GBF Installation is shown on the schedule as being:

- Line 410: Prepare lakebed 03 April 2023 to 02 October 2023
- Line 414: GBF Installation Season 1 - 09 October 2023 to 27 November 2023
- Line 415: GBF Installation Season 2 - 29 April 2024 to 02 September 2024

WTG Installation is shown on the schedule as being:

- Line 439: 28 May 2024 to 25 November 2024

COD is shown on the schedule as being:

- Line 480: 20 December 2024

Therefore, COD is not scheduled to occur before installation is completed.

Further, paragraph 194 of RER-Jérôme Guillet is incorrect:

> 194. In my view, that 22-month schedule is very aggressive, as it includes manufacturing and installation of all components. The overall schedule would also be "best–in–class" for a project that is "fully permitted" in a mature market with a developer supply chain and experienced players. It appears extremely aggressive for a project that still needs to procure formal site control, grid access and all permits, in an untested regulatory environment. In paragraphs 100-102, I discussed the timing of recent European projects built by highly experienced parties – each of them took more than 2.5 years and usually 3 years to get built from FC/FID, and typically 5 years or more to go from "fully permitted" (a stage the Project has not yet reached, by far) to COD.

My responses can be summarized as follows:

- **The WIS schedule prepared by Wood is 58 months duration not 22 months.**
- **The WIS schedule prepared by Wood is not "very aggressive", it is realistic.**
- **The WIS schedule prepared by Wood is consistent with precedent from similar offshore wind projects built in the Baltic Sea, on time and to budget and completed in 2003 and 2010 and similar offshore wind farms located in the freshwater Lake Ijssel, the Netherlands, namely Fryslan and Westermeerwind that were completed in comparable timescales to that proposed for WIS in 2016 and 2021 respectively. Therefore, the WIS schedule prepared by Wood is not "best in class", it is realistic.**
- **36 months have been allowed in the WIS schedule to achieve the fully permitted status. This is considered realistic by the experienced parties involved in WIS.**
- **The supply chain has been largely proven regarding construction of Wolfe Island Wind Farm and the Waaban Crossing.**

- **The WIS schedule is not “extremely aggressive”. All the tasks required to deliver WIS are listed in the Wood schedule for WIS and adequate time has been allowed to undertake these.**
- **The projects discussed in paragraphs 100 to 102 are not comparable to WIS. Genuinely comparable projects to WIS located in the Baltic Sea that employed GBFs, support the WIS schedule prepared by Wood as do comparable projects located in Lake Ijssel, the Netherlands.**

The Wood schedule makes adequate provision to complete all tasks required to achieve Financial Close on 20 February 2023.

The 22-month period referred to, 20 February 2023 to 20 December 2024, is preceded by a 36-month period during which all environmental and permitting activities are undertaken, detailed design and procurement activities are undertaken, and site investigation works are undertaken.

I also disagree with the conclusions at paragraph 195 of RER-Jérôme Guillet:

> 195. Given that some items need to be installed in a specific order (for instance towers before turbines) and some items have significant lead times (such as cables), the schedule can only be called optimistic, even from the perspective of the equity investors, who are generally more bullish than lenders. Banks would only provide funding on the basis of a more conservative base case, and would then look at downside case as sensitivities. Given the cliff-edge nature of the FIT Contract MCOD, banks would definitely not be able to finance a project where even the conservative base case fails to meet the deadline, and would be highly unlikely to agree to finance a project where some downside scenarios fail to meet the hard deadline and they stand to lose everything.

My responses can be summarized as follows:

- **The need to install items in a specific order has been recognised by the engineering professionals that prepared and contributed to the Wood Schedule.**
- **The fact that some items have significant lead times has been recognised by the engineering professionals that prepared and contributed to the Wood Schedule. This is reflected in the detailed schedule set out at Appendix B of CER-Wood.**
- **The Wood Schedule is realistic, not optimistic.**
- **The Wood Schedule includes float and does not include activities that could accelerate construction and installation.**
- **The precedent set by Rodsand I and II, would suggest that there is scope for achieving an earlier COD when deploying GBFs in a benign environment.**

- **There is no material reason why WIS could not be de-risked in the 36-month period preceding FC via early engagement with a suitably qualified lender's engineer to a point where lenders would be comfortable investing in the Project.**

The commentary in paragraph 195 suggests that the author has not reviewed the Wood Schedule, as the professionals that contributed to the preparation of the schedule have in fact addressed the need for items to be installed in a specific order and arranged the scheduling accordingly.

Lines 406 to 424 of the Wood Schedule are reproduced below:

406	**Installation**	**Sun 25/12/22**	**Mon 31/03/25**
407	2023 winter	Sun 25/12/22	Fri 31/03/23
408	2024 winter	Mon 25/12/23	Sun 31/03/24
409	2025 Winter	Wed 25/12/24	Mon 31/03/25
410	**Prepare Lakebed**	**Mon 03/04/23**	**Mon 02/10/23**
411	Mechanical Dredge	Mon 03/04/23	Fri 25/08/23
412	Bedding Stone	Wed 19/04/23	Mon 02/10/23
413	**Installation of GBF**	**Mon 09/10/23**	**Mon 23/09/24**
414	Install GBF Season 1	Mon 09/10/23	Mon 27/11/23
415	Install GBF Season 2	Mon 29/04/24	Mon 02/09/24
416	Install Sand Ballast - Hydraulic Season 1	Mon 16/10/23	Mon 04/12/23
417	Install Sand Ballast - Hydraulic Season 2	Mon 06/05/24	Mon 09/09/24
418	Install Sand Ballast - Mechanical Season 1	Mon 23/10/23	Mon 11/12/23
419	Install Sand Ballast - Mechanical Season 2	Mon 13/05/24	Mon 16/09/24
420	Install Armor Stone Season 1	Mon 30/10/23	Mon 18/12/23
421	Install Armor Stone Season 2	Mon 20/05/24	Mon 23/09/24
422	**IAC Installation**	**Mon 15/04/24**	**Mon 14/10/24**
423	Pre Lay Grapnel Run	Mon 15/04/24	Thu 13/06/24
424	**Inter Array Cable Installation**	**Tue 14/05/24**	**Mon 14/10/24**

Lines 411 and 412 reflect preparation of the lakebed to make the locations suitable to receive the GBFs. Lines 414 to 421 reflect the sequential steps required to site each of the GBFs, which is followed by installation of inter array cables (IAC) at line 423 and 424.

Furthermore, the professionals that contributed to the preparation of the Wood Schedule have also identified that some items have a long lead time and have scheduled accordingly. An example of this can be seen in lines 394 to 405 of the Wood Schedule which relate to procurement of the WTGs and, which are reproduced below.

394	Wind Turbine Generators (WTG)	Tue 18/02/20	Tue 06/08/24
395	Selectection and Design	Tue 18/02/20	Mon 17/01/22
396	Site Suitability Preliminary WTG Selection	Tue 18/02/20	Mon 30/03/20
397	WTG Selection and Turbine Supply Agreement	Tue 31/03/20	Mon 22/06/20
398	Design Interface	Tue 23/06/20	Mon 17/08/20
399	Design	Tue 18/02/20	Mon 17/01/22
400	Fabrication and Procurement	Mon 20/02/23	Tue 09/07/24
401	Equipment Procurement	Mon 20/02/23	Mon 27/11/23
402	Tower Section	Tue 21/02/23	Tue 09/07/24
403	WTG Components	Mon 20/02/23	Tue 09/07/24
404	Insatllation Port Preparatory Works	Mon 20/11/23	Fri 01/03/24
405	Transportation	Wed 03/01/24	Tue 06/08/24

6.5 Conclusions on Project Timing

The WIS development and construction schedule is described in RER-Jérôme Guillet as highly optimistic, heroic, accelerated and best in class. These comments are inaccurate and unreasonable.

The design of WIS in Lake Ontario has multiple advantages compared to offshore wind projects located in the North Sea or the Eastern Seaboard of the USA. These advantages have not been considered in RER-Jérôme Guillet, which is a critical omission when determining the feasibility of WIS and the Project schedule.

The WIS permitting process is not rapid, it is realistic, is based on precedent for permitting onshore wind farms in Ontario and has allowed sufficient float to address potential sources of delay.

RER-Jérôme Guillet makes a number of incorrect comments regarding WIS development and construction scheduling, as discussed in Section 6.4 of this report. It appears that RER-Jérôme Guillet has relied on excepts from the Wood Schedule presented in the CER-Secretariat and has not reviewed the detail of the Wood Schedule, that is supported by the precedent set by construction of comparable offshore wind projects and was prepared by a team of suitably experienced experts. Therefore, the commentary in RER-Jérôme Guillet regarding WIS development and construction scheduling is not credible.

The Wood Schedule is not aggressive, it is realistic.

Windstream assembled a professional team of experts to assist with the design and development of WIS to date and it is expected that this approach would have been continued throughout development of the Project. As such, it is not unreasonable to expect Windstream to engage appropriate consulting engineers to assist with de-risking the project to the satisfaction of potential lenders and would have done so at an early stage in the project, as discussed in Section 3.6 of this report.

7 Grid Access

Grid access, or the absence of this regarding WIS, is commented on at paragraphs 26, 31, 34, 55, 61, 65, 120, 121, 186, 194 and 225 of RER-Jérôme Guillet. That is, RER-Jérôme Guillet advises that Windstream had not secured access to the electricity grid to export the electricity generated from WIS and that the absence of secured grid access would be a serious impediment to the successful development of WIS.

7.1 Notice to Proceed

Grid access is facilitated by the FIT Contract in the form of a Notice to Proceed (NTP) (see Section 2.4 of the WIS FIT Contract). Windstream was required to make incremental payments to the OPA to secure grid access for WIS.

Windstream was required to submit a completed NTP Request to the OPA and this activity is included in the Wood Schedule, an extract of which is shown below.

217	Notice to Proceed (NTP)	Thu 05/08/21	Mon 19/09/22
218	REA Approval	Fri 19/08/22	Fri 19/08/22
219	Domestic Content Plan	Fri 03/06/22	Tue 16/08/22
220	Impact Assessments (CIA / SIA)	Tue 03/05/22	Wed 04/05/22
221	Financing Plan	Thu 05/08/21	Wed 06/07/22
222	Security Deposit	Mon 01/08/22	Mon 01/08/22
223	Submit NTP for Review	Fri 19/08/22	Mon 19/09/22
224	Receive NTP	Mon 19/09/22	Mon 19/09/22

On receipt of the NTP from the OPA, WIS is guaranteed grid access.

On a practical level, the NTP Request for any wind farm in Ontario with a FIT contract, cannot be submitted until the relevant studies that are required to accompany the NTP Request have been completed. That 24 wind farms in Ontario have completed this process would suggest that the NTP Request process is not seen as an impediment to developing a wind farm in Ontario provided that the capacity to connect WIS exists in the distribution and transmission network.

7.2 Grid Capacity was Available to Connect WIS

Grid capacity was available at the site of the proposed Lennox Generating Station to connect WIS without the need for onshore transmission system upgrades.

Section 2.1 of CER-Wood states:

- The Project is sited near the major transmission access point, allowing a strong connection into the grid without the need for onshore transmission system overhaul.

Section 4.2.2 of CER-Wood states:

The Ontario Power Authority was an independent, not for profit organization established through the Electricity Restructuring Act, 2004. It was the agency of the Ontario government responsible for ensuring a reliable, cost-effective, and sustainable electricity supply for Ontario. Its main activities were focused on strategic coordination of conservation efforts across the province, planning the long-term power system, and ensuring the development of required generation resources. Previously, the Ontario Power Authority purchased all power used by the Independent Energy System Operator (owner / operator of the Ontario electricity grid). The Ontario Power Authority granted the FiT contract for the Project (04 May 2010).

The Ontario Power Authority and Independent Energy System Operator merged in January 2015. The Independent Energy System Operator is discussed in Section 4.2.3.

Section 4.2.3 of CER-Wood states:

The Independent Energy System Operator (IESO) manages Ontario's electrical grid.

The IESO performed a system impact assessment of the Project that determined that the incorporation of the Project into the grid would have no adverse impact on grid reliability (IESO, 08 November 2010). The IESO also confirmed the project size by confirming that 300 MW of capacity existed at the proposed connection site (Lennox Generating Station). After the FiT contract was issued, the IESO requested a minor change to the connection point, which Windstream confirmed.

The IESO did not identify any issues regarding connection of WIS to the grid.

Section 4.2.4 of CER-Wood states:

Hydro One Networks Inc. (HONI) performed a Customer Impact Assessment to determine the impact of the Project on existing customers connected to the transmission system. HONI determined the Project would increase the electricity supply available to the Lennox area and provide electricity generation in the area when the Lennox Generating Station is operating at a lower capacity. HONI concluded that the Project is not expected to adversely impact the transmission customers in the area (HONI, November 2010).

HONI did not identify any issues regarding connection of WIS to the grid.

The grid capacity was available to connect WIS and neither IESO nor HONI identified any issues that would stop WIS from connecting to the grid.

7.3 Conclusions on Grid Access

The work undertaken by Windstream regarding WIS grid access, that is summarised in Appendix A, Section A.6 of this report, has demonstrated that the capacity existed to connect WIS and, had Windstream been able to progress development of WIS there is no reason that the required grid connection could not have been secured.

8 Assumption of no Factual Obstacles of Any Kind

RER-Jérôme Guillet comments that the CER-Secretariat assumes that WIS had ***no factual obstacles of any kind*** at paragraphs 34 and 123.

However, RER-Jérôme Guillet makes no reference to the extensive engineering and environmental studies undertaken by Windstream, that are summarised in Appendix A of this report, that did not identify any material issues that would prevent WIS progressing through development, construction and operation.

8.1 WIS Engineering and Environmental Studies

Windstream commissioned suitably qualified and experienced consultants to ascertain the feasibility of WIS.

This is a list of reports prepared for NAFTA2 from CER-Wood:

- Wood's Energy Yield Assessment (EYA), referred to as Wood (2021-EYA)
- Two Dogs Projects' Turbine Selection (TS), referred to as Two Dogs (2021-TS)
- Two Dogs Projects' Capex and Opex Sensitivity Analysis, referred to as Two Dogs (2021-Capex)
- COWI's Wind Turbine Gravity based foundation (GBF) Design, referred to as COWI (2021-GBF)
- COWI's Opinion of Probable Cost (OPC), referred to as COWI (2021-OPC)
- Weeks Marine' Construction Installation Means and Methods, referred to as Weeks (2021)
- Aercoustics' Sound Study, referred to as Aercoustics (2021)
- WF Baird's coastal engineering assessment covering various topics, referred to as WF Baird (2021)
- Ventolines' document review and gap analysis, looking at additional wind turbine installation vessel aspects, referred to as Ventolines (2021)
- Canadian Seabed Research's (CSR) wind turbine layout geological assessment, referred to as CSR (2021)
- Tulloch Engineering's Geotechnical Review, referred to as Tulloch (2021)

Studies undertaken for NAFTA1 and additional studies undertaken by Windstream can be added to the list above.

As noted in Section 7 of this report, HONI and IESO undertook grid connection assessments in 2010 and did not identify anything that would prevent WIS from connecting to the Ontario electricity grid system.

8.2 Summary of Topics Addressed in and Findings of WIS Studies

The studies undertaken for WIS can be summarised under the following general topics:

Technical Feasibility

- Wind Resource
- Grid Connection

- Geotechnical/Geophysical
- Coastal Processes and Wind Wave and Ice
- Shipping and Navigation
- Domestic Content
- Overall Project Feasibility

Environmental

- Noise
- Sediments and Drinking Water
- Underwater Cables
- Birds/Bats
- Fisheries Permitting
- Cultural Heritage
- Visual Impact
- Overall Environmental Process and Permitting

Nothing was identified in any of the professional studies commissioned by Windstream, over a period of 12 years, that would have impeded development of WIS.

Therefore, RER-Jérôme Guillet is misleading where, at paragraphs 34 and 123, it asserts that the CER-Secretariat included:

> *….the assumption of no factual obstacles of any kind within the project (for a first of its kind project in a sensitive area in terms of water, shipping lanes, fauna, and near the international border).*

Not only had Windstream considered the impact of WIS on water, shipping lanes and fauna, it had conducted the extensive studies listed above, that were compliant with the REA permitting process and demonstrated that no material obstacles of any kind existed with regard to the development of WIS. This is not an assumption - it is a fact.

8.3 Conclusions

Extensive engineering and environmental studies were commissioned by Windstream and none of these identified any material issues that would prevent WIS progressing through development, construction and operation.

RER-Jérôme Guillet intimates, at paragraphs 34 and 123 of RER-Jérôme Guillet, that the CER-Secretariat assumes that there will no factual obstacles of any kind regarding development of WIS. This is incorrect and misleading given the body of relevant work Windstream had commissioned on this matter and shared with Secretariat.

In my opinion, had Windstream been able to progress the development of WIS, I can see no reason why WIS could not have achieved the “fully permitted” definition specified in RER-Jérôme Guillet, as the engineering and environmental studies undertaken by Windstream did not identify any substantial obstacles to the WIS project.

9 Low WIS Capex Assumptions

At paragraphs 40, 200 and 201 of RER-Jérôme Guillet it is stated that the Capex assumptions for the Project are "aggressive" and "optimistic". Paragraphs 200 and 201 of RER-Jérôme Guillet are reproduced below.

200. The Secretariat Report then presents its capex assumptions:

> 6.31 Based on the Project schedule set out in the Wood Report, Mr. Irvine estimated the timing of the CAPEX spending over the construction period. The schedule of CAPEX spending for the Project, including expected inflation, is summarized as follows:

Figure 6-5: Summary of CAPEX Schedule (Nominal, $ Millions) [156]

CAPEX	2020	2021	2022	2023	2024	Total
Foundation or Gravity Based Foundation (GBF)	$ 6.6	$ 11.7	$ 63.0	$ 160.7	$ 101.3	$ 343.2
Wind Turbine (WTG)	-	-	-	98.3	196.8	295.1
Offshore high voltage substation (OVHS)	-	1.2	1.3	26.5	23.2	52.2
Array and export cables	-	1.0	0.6	40.2	26.6	68.4
Installation costs	-	-	-	38.7	158.6	197.3
Onshore interconnection	-	1.1	1.2	22.4	25.5	50.2
Insurance	-	-	-	12.3	15.0	27.3
Management costs	-	-	-	6.5	7.9	14.4
Contingency (10%)	-	-	-	47.3	57.8	105.1
Total CAPEX	**$ 6.6**	**$ 14.9**	**$ 66.2**	**$ 452.7**	**$ 612.8**	**$ 1,153.2**

201. The table above (in figure 6-5) indicates total Capex (excluding financing costs) of CAD 1,150 M for 300 MW, which I find rather aggressive here. That corresponds to 2.5 MEUR/MW, which is a realistic figure for Europe in this period but seems optimistic for a first-of-its-kind project in an isolated location (from the perspective of the industry) with no prospects of immediate neighbours.

9.1 WIS Capex Development

I disagree that the WIS Capex figures are "optimistic". The Capex figures in the table at paragraph 200 of RER-Jérôme Guillet were based on analysis of data collected by 4C Offshore (CER-4C Offshore-3), information provided by Wood and, perhaps most significantly, a detailed cost build-up of the GBFs proposed for WIS by COWI (CER-COWI (Opinion of Probable Cost)), that had over a decade of first-hand experience of designing GBFs for offshore wind farms, namely Nysted, Thornton Bank, Rodsand II and Karehamn (see Section 5.1 of this report).

Appropriate adjustments were made to Capex figures provided by the Project participants to make these more appropriate for WIS and these are explained in CER-Two Dogs (Capex Opex Sensitivity Report).

The significance of COWI's contribution to the Capex estimate is that COWI has designed GBFs for four operational offshore wind farms, including Rodsand I and II. As noted in Section

5.2 of this report, Rodsand I and II were both built on budget and ahead of schedule. Given this, it is reasonable to expect that COWI's cost estimate for construction and installation of GBFs for WIS to be realistic.

It is also worth noting the observation below from Section 6.2 of CER-Baird-3:

> Consideration has also been given to the potential effects of climate change on the ice conditions. Available evidence indicates that Lake Ontario ice cover has been declining over time. Over the period of comparison from 1983 to 2018, ice cover has been decreasing by about 5% per decade[60]. Decreasing ice cover could result in lower ice loads on the WGT foundations.

The implications of lower ice loads on the WIS foundations are that less material will be required to resist the forces generated by reduced ice cover. Therefore, the cost of the GBF foundations designed by COWI may be overstated, as COWI has not considered the impact of climate change on GBF loading.

It is worth reiterating the benefits of using GBFs (which were not mentioned in RER-Jérôme Guillet):

- *Manufacture of GBFs is undertaken on the quayside and does not require a Capex-heavy factory. All that is needed is a construction site to carry out the civil works.*
- *The GBF will rest on the lakebed, necessitating limited preparation work to the site.*
- *GBFs can be installed without using driven piles and the vessels required to facilitate installation, namely jack-up vessels, offshore cranes and hammers. This is a critical benefit, as the cost of drilling and piling is avoided. Additionally, as significant cost overruns have been caused by pile refusal, that is, the pile simply cannot be driven into the seabed, this major project risk is also avoided.*
- *GBFs can be installed at a much faster rate than monopiles or jacket foundations offering significant Capex savings. Furthermore, adding more towing vessels can accelerate construction.*

Presumably, the "realistic figure for Europe" is referring to offshore wind farms that have employed monopile or jacket foundations, located in deeper water than WIS and are farther from shore than WIS, as, further to construction of Middelgrunden, Rødsand 1, Lillgrund and Rødsand 2 wind farms in the Baltic Sea, the Belgian Thornton Bank I wind farm is the only project to have used GBFs in the North Sea.

Therefore, in arriving at the conclusion that the WIS Capex figure is aggressive and optimistic, no consideration has been given to the benefits of using GBFs. Nor has any consideration been given to the advantages of the location of WIS in Lake Ontario, that can be found at Section 10.4 of CER-Wood and Section 3.1 of CER-Baird-3:

Wood concludes that the Project is feasible, less technically challenging than some European projects of similar size, and presents several advantages:

- Well established regional supply chain for raw and finished steel and concrete products.
- Established multi-mode transportation system with a track record of supporting wind projects in immediate vicinity.
- Proximity to robust grid connection point.
- Comparatively benign metocean (wind, wave, current, ice) conditions.
- Island based offshore substation.
- Submarine cable installation directly on lakebed, avoiding cable burial costs.
- Geologic conditions suitable for gravity foundation installation.

As explained in Section 2 of this report, the supply chain for WIS has largely been proven and WIS does not require the prospect of immediate neighbours to make it viable. For the reasons I have described in Section 2 of this report, I do not agree that WIS is "the first of a kind". Further, Capex cost build up for WIS has taken into account specific features of the Project, including the benefits of using GBFs and the advantages of the location of WIS in Lake Ontario as listed above.

9.2 Inappropriate Comparison of WIS and Vineyard Wind Capex

At paragraph 202 of RER-Jérôme Guillet, Vineyard Wind Capex is used to support the assertion that WIS Capex is low. Vineyard Wind is located in the Atlantic Ocean along the Eastern Seaboard of the United States:

202. Vineyard Wind reached the level of approximately 3.4 MUSD/MW[129] for the first North American project financing, in the relevant time frame (FC took place in late 2021), with a much large project (i.e. benefiting from economies of scale). Vineyard Wind further benefitted from highly experienced developers, and is located at the heart of a region where several more projects are in the process of being built and a supply chain is accordingly being developed specifically for offshore wind. Despite these advantages compared to the Project, it achieved a cost level approximately 40% higher than a comparable European project. There is no reason to believe the Project's costs would not suffer from the same kind of premium compared to European projects, and given its "first–of–a–kind" nature, it would probably be even higher.

My response can be summarized as follows:

It is not reasonable to argue that the Capex associated with project X in one location can infer the Capex of project Y in another location. Capex is determined from site specific characteristics (water depth, wind regime, distance from equipment staging ports to installation locations, length of grid connection cable…), the site-specific foundation design and the WTG technology selected. This is the process that was employed to determine WIS Capex and it is considered realistic.

It is not reasonable to compare the Vineyard Wind Capex with WIS Capex, for the following reasons:

- Vineyard Wind is in the Atlantic Ocean, WIS is in Lake Ontario.
- Vineyard Wind proposes monopile foundations, not GBFs as proposed for WIS.
- Vinyard Wind proposes a platform for the offshore substation, not an island as proposed for WIS.
- Water depths in the lease area can range from 35m to 60m, and the depth gradually increases along with the distance from the land. In the northern half of the location, the water depths range between 37m and 49.5m[111].
- Vineyard Wind proposes hub heights up to 144m, WIS proposes a 100m hub height.
- Vineyard Wind proposes 12MW+ IEC Class I WTGs, WIS proposes 4.5MW IEC Class II WTGs.

Consider two offshore wind farms using the same WTGs, the same port facilities and the same installation vessels with the same power purchase agreements. One is 10km from shore and in 10m of water the other is 50km from shore in 40m of water. Clearly, the offshore wind farm 50km from shore is going to have a higher Capex (and Opex) than the one 10km from shore because larger foundations will be required, installation will take longer and will require larger vessels and the grid connection cable will be longer. Which of these wind farms would be most representative of offshore wind farm Capex? The answer is neither, as Capex is in part a function of the location chosen to build the offshore wind farm. This observation further reinforces the inappropriateness of comparing WIS to recent European projects as discussed in Section 4 of this report.

Ultimately, annual energy production, project life and the prevailing power purchase agreement dictates what any wind farm can afford to spend on Capex (and Opex). Capex (and Opex) is dictated by site specific characteristics of a given offshore wind farm. Each offshore wind farm has a site specific levelized cost of energy that is calculated from lifetime energy production, lifetime Capex and lifetime Opex.

That Vineyard Wind has a higher Capex than that estimated for WIS is not unexpected. That it uses IEC Class I WTGs indicates that it is located in an IEC Class I wind regime (see Section 4.1.1 of this report) and, given the higher hub height and larger WTG size, Vineyard Wind could generate perhaps 40% or more MWh/MW installed. While it may incur more capital costs, the additional energy output can offset this additional cost.

[111] C-2780, Power Technology Article entitled “Vineyard Wind 1 Offshore Wind Farm, Massachusetts” (May 19, 2021).

Capex is determined from site specific characteristics (water depth, wind regime, distance to installation ports, length of grid connection cable…..), the site-specific foundation design and the WTG technology selected. This is the process that was employed to determine WIS Capex and it is considered realistic.

9.3 Fryslan Offshore Wind Farm Capex

Fryslan Wind Farm is the largest wind farm in the world in an inland water[112]. It employs 89 x Siemens Gamesa SWT-DD-130 WTGs, rated at 4.3MW with an effective hub height of 115m[113] in water depths ranging from 3m to 6m[114]. Rated capacity is 382.7MW. WIS proposed to install similarly rated Siemens Gamesa WTGs, the SGRE-4.5-145, rated at 4.5MW with an effective hub height of 100m.

The total Capex for Fryslan Offshore Wind Farm and details of financial close in October 2019 can be found here[115]:

> *A joint venture between Windpark Fryslan (75.5%) and Provincje Fryslan (24.5%), the project [had] a total construction cost of €850m ($1bn).*
>
> *The financial closure for the project was realised through a senior debt of approximately €700m ($820m) in October 2019. The loan was provided by a group of ten banks including BNP Paribas, ABN AMRO, DZ Bank, BNG, Helaba, ING, KfW IPEX, NWB, KBC and Rabobank. The province of Fryslân made an investment of €100m ($109.08m) to become a shareholder, including €20m ($21.81m) in equity and €80m ($87.26m) in a subordinated loan. Residents of the province will be able to invest in the wind farm through bonds once the project is completed.*

The average USD to CAD exchange rate in October 2019 was $1USD = $1.32CAD[116]. This gives a total Capex for Fryslan Offshore Wind Farm of 1.32 x $1bUSD = $1.32bCAD. On a $CAD/MW basis, this equates to $3.45mCAD/MW. Pro-rating for the proposed capacity of WIS, at 297MW, projects a total Capex for WIS of 297MW x $3.45m CAD = $1025mCAD in 2019. Allowing for inflation, say 1.0% which is generous, that would give $1035CAD in 2020.

In CER-Two Dogs (Capex Opex Sensitivity Report), I propose a total Capex for WIS of between $1057mCAD and $1203mCAD, with a central estimate of $1137mCAD in 2020, including contingency. My central estimate for WIS Capex is $102mCAD (10%) higher than

[112] C-2785, Windpark Fryslan Article entitled "The Wind Farm – Energy for 500,000 Households" (December 31, 2021).
[113] C-2785, Windpark Fryslan Article entitled "The Wind Farm – Energy for 500,000 Households" (December 31, 2021).
[114] C-2736, NS Energy Article entitled "Fryslan Wind Farm, Friesland" (August 31, 2018).
[115] C-2779, Power Technology Article entitled "Fryslan Wind Farm, Ijsselmeer" (March 31, 2021).
[116] C-2764, 2019 USA CAD Exchange Rates (January 31, 2020).

the estimated cost of WIS based on pro-rating the CAD/MW cost of Fryslan Offshore Wind Farm.

The foundation solution proposed for WIS will be more expensive than that for Fryslan due to the deeper water depths, 10m to 30m for WIS compared to 3m to 6m for Fryslan. However, with an effective hub height of 115m for Fryslan compared to 100m for WIS, the taller WTG towers for Fryslan will be more expensive compared to WIS and these will require a more expensive crane to install the WTGs due to the higher hub height. WIS proposes to install WTGs using a jack-up vessel, a more expensive option compared to Fryslan, that utilised barges and standard onshore cranes.

The WTG proposed for Fryslan is IEC Class I with a 130m rotor, whereas the WTG proposed for WIS is IEC Class II with a 145m rotor. The larger rotor proposed for WIS is likely to be more expensive than that for Fryslan. However, the Fryslan WTGs and monopile foundations, being IEC Class I, must withstand the higher mean and extreme wind speeds of an IEC Class I location. The higher hub height of Fryslan WTGs compared to WIS WTGs, combined with the higher IEC wind class, means that the whole WTG system and foundation will be subject to higher wind loads, which require more material and increases the relative cost of the WTG system and foundation. On balance, it is considered that the WTG costs for Fryslan and WIS are comparable.

It is stated that 90km of inter array cabling was used at Fryslan. If Fryslan was located in water depths of 10m to 30m, this would add 2km to 3km of inter array cabling. Therefore, the relative cost of inter-array cabling for WIS and Fryslan are comparable.

Fryslan inter array cables are connected to an onshore substation at Breezanddijk, which is located on the Afsluitdijk, a major dam and causeway that separates the freshwater lake that Fryslan Wind Farm is located in from the sea. This is a similar solution to the proposed WIS substation that was proposed to be located on Pigeon Island and relative costs are likely to be comparable.

The Breezanddijk substation is connected to the electricity grid via 55km of cable laid along the Afsluitdijk, that is, onshore. WIS proposes a 25km submarine cable from Pigeon Island to the grid connection point at Lennox Generating Station. The grid connection cost for each wind farm is likely to be comparable.

In conclusion, Fryslan and WIS are considered to be reasonably comparable in terms of relative construction Capex. The total Capex proposed for WIS was between $1057mCAD and $1203mCAD, with a central estimate of $1137mCAD in 2020, including contingency. That my central estimate for WIS Capex is 10% higher than the relative stated 2019 cost of Fryslan Wind Farm, would indicate that WIS Capex estimates are robust.

9.4 WIS' High Tariff Does Not Necessarily Equate to High Contractor Costs

At paragraph 203 of RER-Jérôme Guillet, it is suggested that WIS' high tariff will attract higher costs from contractors:

> 203. Additionally, a project with a high tariff would get more expensive offers from contractors as they know that the construction costs would be a small proportion of revenues and they would try to get some of the premium for themselves. As a marginal project in a market with limited prospects for offshore wind, the competition between suppliers would not be sufficient to prevent that phenomenon, which was prevalent in the industry prior to the introduction of competitive tenders for tariffs.

I disagree. This is quite speculative and largely dependent on prevailing market conditions when WIS contracts would have been put out to tender. Ultimately, it will come down to the desire of the contractors and suppliers to work on WIS based on prevailing market conditions.

Revisiting the Waaban Crossing[117], this is what Hatch reported:

- *Conducted bridge optimization through material selection and structural analyses to generate an estimated $12 million in savings to the target cost budget.*
- *Successfully navigated supply constraints and the rising price of steel by changing materials to concrete, lowering the bridge profile, and changing the main bridge section from an "above deck supported" arch to a "below deck supported arch".*

Based on this summary, it does not appear that Ontario based contractors share the approach to project premiums outlined in RER-Jérôme Guillet.

As noted in the Section 2, WIS does not require future prospects for offshore wind.

9.5 Conclusions on Capex

RER-Jérôme Guillet advises that the WIS Capex assumptions are aggressive and optimistic. Dr. Guillet supports this opinion by comparing the proposed WIS Capex to European and US offshore wind farm developments that are not comparable to WIS. Therefore, this opinion is not credible.

RER-Jérôme Guillet does not consider any of the site-specific characteristics of WIS being located in Lake Ontario or that WIS proposes to employ GBFs, each of which will result in

[117] C-2743, Hatch Article re Kingston Third Crossing (Waaban Crossing) [2018 ongoing].

lower Capex for WIS compared to the European and US offshore wind farm development cited in RER-Jérôme Guillet.

Fryslan and WIS are considered to be reasonably comparable in terms of relative construction Capex. The total Capex proposed for WIS was between $1057mCAD and $1203mCAD, with a central estimate of $1137mCAD in 2020, including contingency. My central estimate for WIS Capex is 10% higher than the relative stated 2019 cost of Fryslan Wind Farm, indicating that WIS Capex estimates are robust.

At paragraph 203 of RER-Jérôme Guillet, it is suggested that WIS' high tariff will attract higher costs from contractors. This is quite speculative and largely dependent on prevailing market conditions when WIS contracts would have been put out to tender.

10 Low O&M Assumptions

At paragraphs 40, 204 and 205 of the RER-Jérôme Guillet, Dr. Guillet suggests that the O&M costs that I estimated are low:

204. Secretariat also proposes low O&M assumptions:

> 6.40 Mr. Irvine calculated the annual O&M costs to be in the range of $25.8 million to $32.2 million with a central estimate of $28.8 million (in real 2020 dollars). We note that Mr. Irvine's calculation of the O&M expenses includes a $3 million per annum premium to the range of O&M costs observed for other offshore wind projects, given that "*WIS is remote from the locus of offshore wind development activities in the USA*".

10.1 WIS Capex Development

The Opex costs referenced in paragraph 204 are technical Opex and were based on three sources:

- **$25.8m CAD/annum** based on International Energy Agency reports (C-2178 and C-2179).
- **$28.8m CAD/annum** based on a BVG Associates report for the UK's ORE Catapult (C-2203).
- **$32.2m CAD/annum** based on an information memorandum for the sale of Sprogo offshore wind farm in Denmark (C-2120). The information memorandum presents actual Opex for seven years of operation for seven offshore 3MW WTGs.

The information in these references were adjusted to the site-specific conditions associated with WIS in Lake Ontario.

Note that there are WTG O&M facilities in the immediate vicinity of WIS, located on Wolfe Island, 86 x 2.3MW Siemens WTGs, and Amherst Island, 26 x 3.2MW Siemens WTGs. Therefore, there is a well-developed Siemens O&M capability and supply chain adjacent to WIS that could support development of the O&M service capability for the 66 x 4.5MW Siemens WTGs proposed for WIS.

The main addition to the existing O&M capability adjacent to WIS would be provision of vessels to transport personnel and materials to the WIS WTGs. Lake Ontario has far more benign metocean conditions compared to the North Sea. Consequently, the specification, and cost, of service vessels required to support WIS O&M will be lower compared to those required to service WTGs located in the North Sea.

As noted above in paragraph 204 of RER-Jérôme Guillet, a further $3m per annum was added to the Opex cost derived from each of the reference sources. The $3m/annum premium is, in effect, a maintenance reserve account to build up a fund to pay for a jack-up barge in the event of a major repair being required. In such a case, a vessel may need to be brought in from another location, as no suitable vessels are permanently located on Lake Ontario. The need to secure a jack-up barge could be removed by using barges and a standard crawler crane, as discussed in Section 3.1 of CER-Baird-3 and Section 4.7.5 of this report.

The Opex figures provided for WIS are based on site-specific conditions and considered a realistic starting point for WIS Opex, that would be refined as WIS was developed.

10.2 Offshore Wind Opex

As explained in CER-Two Dogs (Capex Opex Sensitivity Report), offshore wind Opex can be split between technical Opex components that can vary over the lifetime of the offshore wind farm, increasing with the age of the WTG and non-technical Opex. The individual technical Opex cost components depend on many site-specific parameters. These include the WTG rating (the rated MW capacity of the WTG), the distance the offshore wind farm is from the service port, the sea state and the water depth.

Non-technical Opex includes but is not limited to:

- Prevailing legislation regarding transmission charges
- Lakebed lease fees
- Operating insurance
- Community funds or taxes

CER-Two Dogs (Capex Opex Sensitivity Report) only addresses non-technical Opex.

Consider two offshore Wind Farms A and B using the same service port and service vessels:

- Wind Farm A is 300MW, composed of 100 x 3MW WTGs and 100km from the service port.
- Wind Farm B is 300MW, composed of 50 x 6MW WTGs and 50km from the service port.

Considering only the scheduled maintenance performed by technicians that are ferried to the WTGs, it will take twice as long to travel to Wind Farm A than Wind Farm B, as it is twice the distance from the service port, and it will take twice as long to service Wind Farm A than Wind Farm B, as there are twice as many WTGs.

Therefore, scheduled maintenance for Wind Farm A will cost twice as much as Wind Farm B. That is, if scheduled maintenance for Wind Farm A was 0.1MCAD/MW the equivalent figure for Wind Farm B would be 0.2MCAD/MW.

Consequently, when inferring Opex costs for one wind farm based on the experience of another, both wind farms must be comparable in terms of WTG technology, the number of WTGs, distance from the service port, type of service vessel, water depth and metocean conditions. Otherwise, as I have done, adjustments need to be made to the reference wind farm data to reflect the site-specific conditions of the target wind farm.

RER-Jérôme Guillet offers its own rough estimate of O&M costs at paragraph 205:

> 205. The proposed estimate for O&M costs is below 0.1 MCAD/MW which I find similarly optimistic. That's a level in line with best-in-class European practice and thus again unrealistic for a first-of-its-kind project "remote from the locus of offshore wind development activities in the USA" as Secretariat describes it. The comment above in paragraph 203 about the pricing expectations of the turbine suppliers would apply here as well and makes achieving such price levels even less likely.

The O&M cost in paragraph 205 of RER-Jérôme Guillet is considered optimistic because it is below 0.1 MCAD/MW, which is considered to be in line with best-in-class European practice. As noted in Section 4 of this report, WIS is not comparable to the class of European projects that RER-Jérôme Guillet has benchmarked it against.

Additionally, there is no explanation as to how the 0.1 MCAD/MW figure has been derived. That is, what wind farms were used to derive the 0.1 MCAD/MW estimate and what operating costs are included in the figure - technical operating costs only or technical and non-technical operating costs?

In any case, the range of O&M costs for WIS is between 0.086 MCAD/MW and 0.108 MCAD/MW. Equivalent technical O&M costs for the Sprogo reference would be 0.12 MCAD/MW, which is based on actual costs for O&M of 7 x 3MW WTGs. It is reasonable to expect that economies of scale could be achieved when maintaining 66 x 4.5MW WTGs.

The comment regarding price expectation of O&M providers is equally as speculative here as it was in paragraph 203, which is discussed at Section 9.4 of this report.

It is not credible to infer that WIS Opex is low based on an unsubstantiated figure for European offshore wind Opex, where no attempt has been made to consider the site-specific conditions of WIS.

10.3 Conclusions

The Opex figures provided for WIS are based on site-specific conditions and considered a realistic starting point for WIS Opex, that would be refined as WIS was developed.

It is not credible to infer that WIS Opex is low based on an unsubstantiated figure for European offshore wind Opex, where no attempt has been made to consider the site-specific conditions of WIS.

11 WIS Risk Profile

RER-Jérôme Guillet repeatedly highlights WIS risks, without once commenting on the site-specific benefits of WIS and the proposed use of GBFs, that would make WIS less risky compared to offshore wind projects located in the North Sea or the Atlantic Ocean.

In Section 3.3 of RER-Jérôme Guillet, *Challenges to financing offshore wind projects*, previous unsubstantiated comments made in RER-Jérôme Guillet are used to reinforce WIS' high-risk profile asserted by RER-Jérôme Guillet and the experiences of offshore wind projects, that are not comparable to WIS, are used to predict the outcome of WIS had it been allowed to progress through development.

RER-Jérôme Guillet does not recognise the work undertaken by WIS that mitigates many of the risks highlighted in RER-Jérôme Guillet, as discussed in Section 8 of this report, nor does RER-Jérôme Guillet acknowledge that, in the normal course of development of an offshore wind project, or any large-scale construction project for that matter, de-risking the project is standard practice, which is discussed further below.

11.1 De-risking Offshore Wind Farms

Table 4 lists risks associated with offshore wind farms and was developed by TUVRheinland/Risktec. Table 4 is for illustration, for the purposes of discussing de-risking offshore wind farms and is not representative of a specific offshore wind farm, including WIS.

Table 4 – Offshore Wind Farm Risks[118]

Project complexity	Multiple contracts & stakeholders, contractor availability & solvency
Financial	Lower return on investment
Interfaces	Land, port, marine, aviation
Technology	Foundations, turbines, grid connection
Cabling	Availability, routing, j-tube design, installation method, land/sea interface
Wind, wave & current	Impact on structures and activities
Subsurface conditions	Geohazards, scour, accretion
Installation	Heavy lifts, collision, damage
Collision	Visiting or passing vessels
Transport	Marine, aviation, accommodation
Environmental impact	Sedimentary, biological, visual, fishing, navigational
Health & safety	Working at height, confined space, electrical & mechanical working, structural failures, fire, vessel transfer, evacuation & rescue, diving
Security threats	Physical, cyber

[118] C-2565, Newsletter of Risktec Solutions Limited Newsletter Article entitled "De-Risking Offshore Wind Energy" (Spring 2011).

Figure 12 illustrates a high-level risk management process, whereby each of the site-specific risks associated with an offshore wind farm would be identified, such as those listed in Table 4, and then be subject to a risk assessment that would lead to risk identification and ultimately to risk treatment.

The body of work undertaken by Windstream to date has addressed many of the risk categories listed in Table 4, see Section 8 of this report, and found nothing material that would impede the development of WIS. The de-risking process would be an ongoing activity for WIS, as illustrated in Figure 12, accomplished through monitoring and review.

At SgurrEnergy I worked with two of my offshore wind due diligence engineers during 2015 and 2016 to apply a software product called @RISK[119] to offshore wind due diligence and help offshore wind developers and contractors identify and mitigate risks.

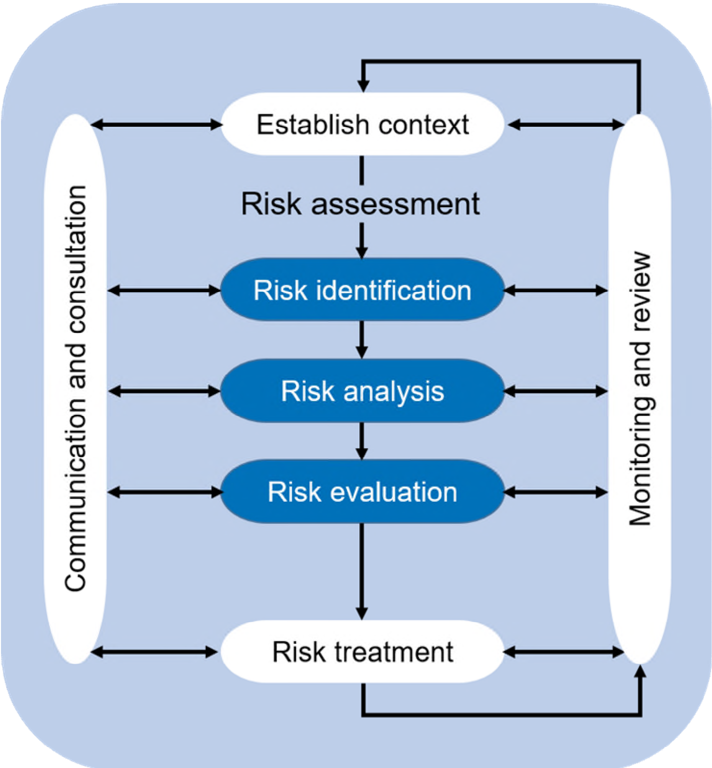


Figure 12 – High Level Risk Management Process[120]

[119] C-2829, At Risk: Risk and decision analysis software (July 31, 2023).

@RISK (pronounced “at risk”) performs risk analysis using Monte Carlo simulation to show you many possible outcomes in your spreadsheet model—and tells you how likely they are to occur. It mathematically and objectively computes and tracks many different possible future scenarios, then tells you the probabilities and risks associated with each different one. This means you can judge which risks to take and which ones to avoid, allowing for the best decision making under uncertainty.

@RISK also helps you plan the best risk management strategies through the integration of RISKOptimizer, which combines Monte Carlo simulation with the latest solving technology to optimize any spreadsheet with uncertain values. Using genetic algorithms or OptQuest, along with @RISK functions, RISKOptimizer can determine the best allocation of resources, the optimal asset allocation, the most efficient schedule, and much more.

[120] C-2565, Newsletter of Risktec Solutions Limited Newsletter Article entitled “De-Risking Offshore Wind Energy” (Spring 2011).

There is no material reason why Windstream could not have employed well understood de-risking strategies had it been allowed to proceed. That is, the risk profile of WIS based on the documents submitted to NAFTA2 reflects the risk profile at the beginning of the development phase. The risk profile would have been refined as more, relevant information regarding WIS was collected and analysed.

This is not recognised in RER-Jérôme Guillet where challenges to financing an offshore wind farm is inappropriately discussed in the context of large-scale offshore wind farm development in the North Sea and Atlantic Ocean, and no recognition is given to the detailed studies commissioned by Windstream that clearly mitigate many of the challenges or risks, identified in RER-Jérôme Guillet.

11.2 WIS Risk Profile Inferred by RER-Jérôme Guillet is Pessimistically High

Section 3.3 of RER-Jérôme Guillet discusses challenges to financing offshore wind farms but makes no attempt to present the site-specific attributes of WIS that will mitigate these challenges.

The technical challenges, or risks, presented in Section 3.3 of RER-Jérôme Guillet are summarised in Table 5 below and site-specific mitigation measures relating to WIS are listed opposite each risk listed in RER-Jérôme Guillet, highlighting the pessimistic view of the WIS risk profile in RER-Jérôme Guillet.

Table 5 – WIS Risk Profile

RER-Jérôme Guillet Para. Risk	Mitigation
82. Intersection of several very different industries	As offshore wind farms have been getting built since the 1990s. The collective experience and knowledge are ever expanding, a point noted in RER-Jérôme Guillet. WIS would make use of this pool of knowledge and experience to develop best practice contracts and implement best practice project management, as it did for NAFTA1 and continues to do for NAFTA2.
82. Complex construction risk taken on by lenders on a non-recourse basis	Construction risk is largely dictated by metocean conditions and understanding the seabed geology. WIS freshwater metocean risk is low, therefore weather delay risk is low. WIS proposes GBFs and will not be subject to issues such as monopile refusal, where the pile cannot be forced into the seabed, causing construction delays. The GBFs will be manufactured in a port and floated to site by tug, reducing cost and installation risk. WIS construction risk is not complex and is considered low.
83. Construction takes place at sea, an inherently hostile environment	WIS is in Lake Ontario, not at sea. The environment is well understood and is not hostile.
83. No party has ability or capacity to take on full construction responsibility as it involves multiple industrial sectors that have little overlap	Lenders would prefer a fully wrapped EPC contract and many offshore wind farms were built on this basis. However, there were issues with contractors becoming bankrupt due to a poor understanding of project risks and it became the norm to construct wind farms using a multi-

Table 5 – WIS Risk Profile	
RER-Jérôme Guillet Para. Risk	**Mitigation**
	contract approach. Windstream has 36 months to develop and refine its contracting strategy. Para 83 of RER-Jérôme Guillet states: ***Obviously developers and contractors have learned to do this better today than 5 or 10 years ago, and understand how to mitigate risks****, but the risks have not gone away.* Acknowledgement that the offshore wind industry does in fact learn and improve. There is no reason why WIS could not have developed and executed robust contracts that would meet lender requirements. Particularly given the low construction risk profile of WIS.
86. Supply chain underdeveloped	WTGs and grid transformers have been delivered to and installed at Wolfe Island and Amherst Island wind farms. The SGRE 4.5MW WTG proposed for WIS has been supplied to Canada. The GBFs are made of steel, concrete and ballast all of which are readily available in Ontario. A suitable GBF manufacturing facility has been identified. The skills required to manufacture a GBFs are readily available in Ontario. The vessels required to move GBFs to turbine locations, tugs, are available (or could be moved to Lake Ontario). Expertise required to install GBFs is available in Ontario. Wolfe Island Wind Farm required a submarine cable to be installed to connect it to the grid as did Amherst Island Wind Farm. A European company was contracted to install the submarine cables. There are no major supply chain risks regarding design and installation of inter-array and grid cables as these would be laid on the lakebed, not buried, and no reason to assume that there will be cable supply issues. The main elements of the WIS supply chain are proven and the associated risk considered to be low. The only untried element of the supply chain is the actual wind turbine installation. It has been demonstrated that the necessary lifting equipment is available and can access Lake Ontario. That the installation would be done by experienced operators. I also view this risk as low.
86. Supply chain uncompetitive	The existing supply chain has competitively delivered Wolfe Island Wind Farm, Amherst Island Wind Farn and the Waaban Bridge, all in Lake Ontario and 5km to 14km from WIS.
87. Need to build first project with future demand	WIS does not require future demand. If there was future demand, this would be an upside to the project that has not been considered.
88. Limited availability of equipment: vessels, cranes,….	WIS would not be competing for equipment being used to install 10MW+ wind turbines proposed for US offshore wind developments.
90. Project financing a Canadian offshore wind farm would take a lot longer than a European offshore wind farm (based on Vineyard Wind, Moray East and Triton Knoll)	Vineyard wind was delayed by the Trump administration and Right whale issues, is 950MW and 22km offshore in a hostile environment. Moray East is 950MW and 22km+ offshore. Triton Knoll is 857MW and 33km offshore. All

Table 5 – WIS Risk Profile	
RER-Jérôme Guillet Para. Risk	**Mitigation**
	employ circa 10MW turbines. The construction risk profile is completely different (higher) compared to WIS.
96 & 97. Termination of FIT Contract	24 onshore wind farms have been financed and constructed in Ontario under FIT contracts with similar termination clauses.

RER-Jérôme Guillet overstates WIS risks and develops these views to present WIS as a high-risk project that would not be viewed favourably by prospective lenders.

11.3 Conclusions on WIS Risk Profile

The risk mitigation measures listed in Table 5 show how the risk profile of WIS is generally lower than what is being presented in RER-Jérôme Guillet and that RER-Jérôme Guillet has taken a pessimistically high view of WIS risk profile by comparing development of WIS to the experience of offshore wind farms built in the North Sea and the Atlantic Ocean, by not considering the site-specific benefits of WIS and the proposed use of GBFs and by not considering the substantial body of work undertaken by Windstream that has not identified any material risks associated with the development of WIS.

Further to 36 months of development, and engagement with suitably qualified and experienced consultants, there is no reason why WIS could not be suitably de-risked to a level acceptable to prospective lenders.

12 Conclusions

12.1 The supply chain to develop, construct and operation WIS is proven

As discussed in Section 2 of this report, Windstream and its consultants have demonstrated that the supply chain required to deliver WIS does exist and has delivered comparable major projects in Lake Ontario for decades.

Overall, the risk of accessing the required supply chain for WIS is considered low.

12.2 The cliff-like risk with regards to the FIT Contract is non-material and, in practice, non-existent

As discussed in Section 3 of this report, the cliff-like risk described in RER-Jérôme Guillet is being overstated and in practice, does not exist, as:

- The Wood Schedule is achievable.
- The available WIS FIT Contract time buffer and WIS Capex contingency allowances are adequate.
- Had WIS been allowed to proceed, all aspects of WIS could have been continuously refined with a view to meeting the expectations of lenders.
- There is scope for a wind farm developer in Ontario to negotiate a pragmatic commercial operation date with IESO beyond the MCOD, while retaining the FIT contract for the wind farm development. In practice, the “cliff-edge” risk in the WIS FIT Contract described in RER-Jérôme Guillet does not exist.

12.3 The outcome of the development of WIS cannot be predicted by comparison to unrepresentative offshore wind projects

As discussed in Section 4 of this report, the use of UK Round 3 Offshore Wind Projects and other offshore wind projects in the North Sea and the Atlantic Ocean in RER-Jérôme Guillet to predict the outcome of WIS, had it been allowed to progress through development and construction, is not credible as the scale, proposed technology, metocean conditions, distance to shore and water depth of UK Round 3 offshore projects make these inappropriate comparators to WIS.

Consequently, conclusions in RER-Jérôme Guillet derived from comparison of WIS with large projects in the North Sea, and similarly challenging offshore environments, are misleading.

It is inappropriate and misleading infer that WIS will require five years to progress from being fully permitted to commercial operation based on a selection of offshore wind projects that are not comparable to WIS.

The Wood Schedule was supported by relevant experts, was based on the site-specifics of WIS being constructed in Lake Ontario, was based on precedent, and is realistic and robust.

By reviewing the development timelines of offshore wind farms that are more comparable to WIS in terms of technology and location, it is reasonable to conclude that the WIS schedule is realistic not “best in class”.

12.4 The outcome of the development of WIS can be more reasonably predicted by comparison to representative offshore wind projects

As discussed in Section 5 of this report, comparable projects to WIS, namely Rodsand I and II, were completed on budget and ahead of schedule over a decade ago, using similar GBF technology to that proposed for WIS.

Large offshore wind farms located in the freshwater Lake Ijssel, the Netherlands, namely Fryslan and Westermeerwind were completed in comparable timescales to that proposed for WIS in 2016 and 2021 respectively.

It took 2.2 years to install a third more similarly rated WTGs and foundations at Fryslan than is proposed for WIS. This fact supports the robustness of the Wood Schedule.

RER-Jérôme Guillet has not referenced any of the offshore wind projects discussed in Section 5 of this report, that are comparable to WIS and could give an insight to outcome of WIS had it been allowed to progress through development, construction and operation. Therefore, the conclusions made in RER-Jérôme Guillet regarding the outcome of WIS, had it been allowed to progress through development, construction and operation are not credible.

12.5 The WIS Project timing assumptions are not aggressive, they are realistic

As discussed in Section 6 of this report, the WIS development and construction schedule is described in RER-Jérôme Guillet as highly optimistic, heroic, accelerated and best in class. These comments are inaccurate and unreasonable.

The design of WIS in Lake Ontario has multiple advantages compared to offshore wind projects located in the North Sea or the Eastern Seaboard of the USA. These advantages have not been considered in RER-Jérôme Guillet, which is a critical omission when determining the feasibility of WIS and the Project schedule.

The WIS permitting process is not rapid, it is realistic, is based on precedent for permitting onshore wind farms in Ontario and has allowed sufficient float to address potential sources of delay.

RER-Jérôme Guillet makes a number of incorrect comments regarding WIS development and construction scheduling, as discussed in Section 6.4 of this report. It appears that RER-

Jérôme Guillet has relied on excepts from the Wood Schedule presented in the CER-Secretariat and has not reviewed the detail of the Wood Schedule, that is supported by the precedent set by construction of comparable offshore wind projects and was prepared by a team of suitably experienced experts. Therefore, the commentary in RER-Jérôme Guillet regarding WIS development and construction scheduling is not credible.

The Wood Schedule is not aggressive, it is realistic.

Windstream assembled a professional team of experts to assist with the design and development of WIS to date and it is expected that this approach would have been continued throughout development of the Project. As such, it is not unreasonable to expect Windstream to engage appropriate consulting engineers to assist with de-risking the project to the satisfaction of potential lenders and would have done so at an early stage in the project, as discussed in Section 3.6 of this report.

12.6 Grid access for WIS was secured through the FIT Contract

As discussed in Section 7 of this report, the work undertaken by Windstream has demonstrated that the capacity existed to connect WIS and, had Windstream been able to progress development of WIS there is no reason that the required grid connection could not have been secured.

12.7 No material issues were identified that would impede WIS development

As discussed in Section 8 of this report, extensive engineering and environmental studies were commissioned by Windstream and none of these identified any material issues that would prevent WIS progressing through development, construction and operation.

RER-Jérôme Guillet intimates, at paragraphs 34 and 123 of RER-Jérôme Guillet, that the CER-Secretariat assumes that there will no factual obstacles of any kind regarding development of WIS. This is incorrect and misleading given the body of relevant work Windstream had commissioned on this matter and shared with Secretariat.

Had Windstream been able to progress the development of WIS, I can see no reason why WIS could not have achieved the “fully permitted” definition specified in RER-Jérôme Guillet, as the engineering and environmental studies undertaken by Windstream did not identify any substantial obstacles to the WIS project.

12.8 WIS construction costs are not low, they are realistic

As discussed in Section 9 of this report, RER-Jérôme Guillet advises that the WIS Capex assumptions are aggressive and optimistic. Dr. Guillet supports this opinion by comparing the proposed WIS Capex to European and US offshore wind farm developments that are not comparable to WIS. Therefore, this opinion is not credible.

RER-Jérôme Guillet does not consider any of the site-specific characteristics of WIS being located in Lake Ontario or that WIS proposes to employ GBFs, each of which will result in lower Capex for WIS compared to the European and US offshore wind farm development cited in RER-Jérôme Guillet.

Fryslan and WIS are considered to be reasonably comparable in terms of relative construction Capex. The total Capex proposed for WIS was between \$1057mCAD and \$1203mCAD, with a central estimate of \$1137mCAD in 2020, including contingency. My central estimate for WIS Capex is 10% higher than the relative stated 2019 cost of Fryslan Wind Farm, indicating that WIS Capex estimates are robust.

At paragraph 203 of RER-Jérôme Guillet, it is suggested that WIS' high tariff will attract higher costs from contractors. This is quite speculative and largely dependent on prevailing market conditions when WIS contracts would have been put out to tender.

12.9 WIS O&M costs are not low, they are realistic

As discussed in Section 10 of this report, the Opex figures provided for WIS are based on site-specific conditions and considered a realistic starting point for WIS Opex, that would be refined as WIS was developed.

It is not credible to infer that WIS Opex is low based on an unsubstantiated figure for European offshore wind Opex, where no attempt has been made to consider the site-specific conditions of WIS.

12.10 WIS risk profile is not high and is manageable

As discussed in Section 11 of this report, the risk mitigation measures show how the risk profile of WIS is generally lower than what is being presented in RER-Jérôme Guillet and that RER-Jérôme Guillet has taken a pessimistically high view of WIS risk profile by comparing development of WIS to the experience of offshore wind farms built in the North Sea and the Atlantic Ocean, by not considering the site-specific benefits of WIS and the proposed use of GBFs and by not considering the substantial body of work undertaken by Windstream that has not identified any material risks associated with the development of WIS.

Further to 36 months of development, and engagement with suitably qualified and experienced consultants, there is no reason why WIS could not be suitably de-risked to a level acceptable to prospective lenders.

Appendix A: Summary of WIS Development Studies

Prior to and since securing the WIS FIT Contract in 2010, Windstream commissioned multiple technical and environmental studies to determine the feasibility of developing, constructing and operating WIS. None of these studies identified material issues that would be an impediment to the development, construction and operation of WIS.

Appendix A presents a high-level summary of the technical and environmental studies commissioned by Windstream to highlight the breadth and depth of the work undertaken by Windstream, that, as far as is practicable, has addressed all of the areas associated with development, construction and operation of WIS in Lake Ontario.

A.1 General Project Information

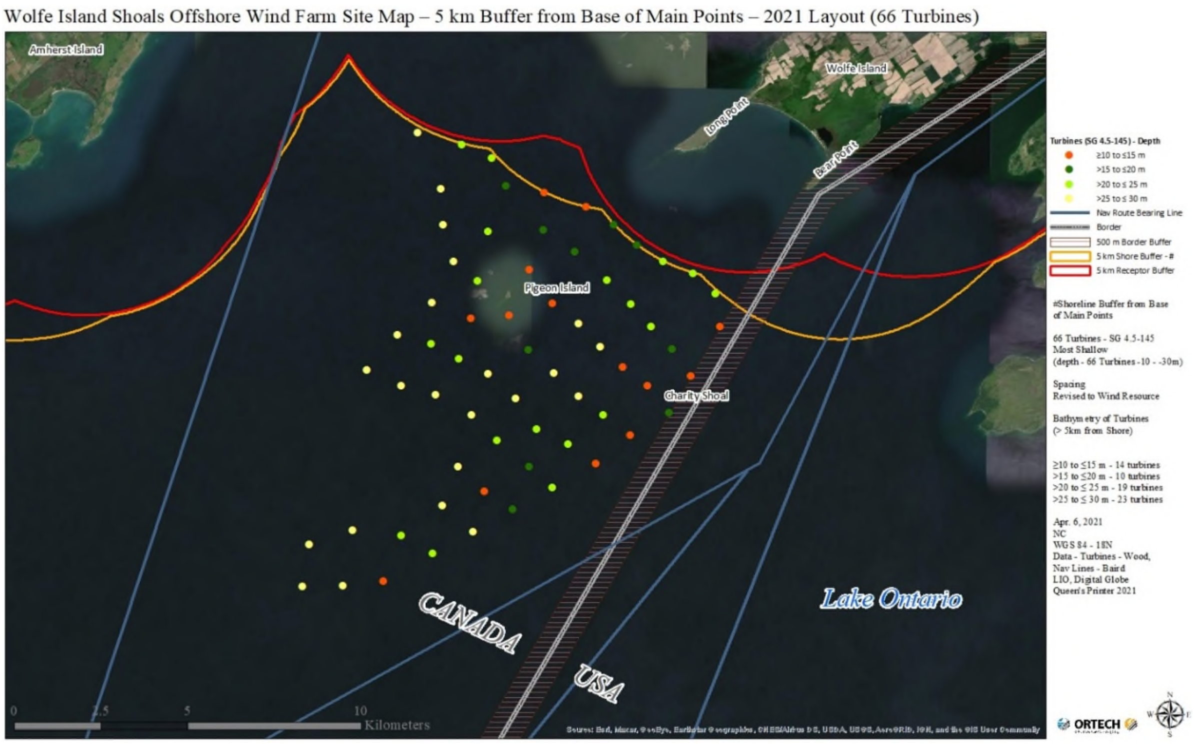


Figure A.1 - Project Layout Showing 5km Setback

Description: Wolfe Island Shoals Offshore Wind Farm consists of 66 turbines with a buffer of at least 5km from the shoreline (excluding uninhabited points and islands).

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure 1-1 (Source: Ortech).

Location	Northeast Lake Ontario
Wind Turbine Generator (WTG)	SGRE[121]-4.5-145
Hub Height/Rotor Diameter	100m/145m
Project Capacity	297MW (66 x 4.5MW)
WTG Foundation Type	Gravity Based Foundation (GBF)
Water Depth	10m to 30m
Export Cable	230kV
Point of Interconnection	Lennox Generating Station Switchyard

Figure A.2 - Key Project Information

Description: Summary of key project information.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Table 1-1.

Figure A.3 - Visualization of Wolfe Island Shoals Project

Description: Visual representation from Long Point on Wolfe Island looking south-west toward the Wolfe Island Shoals Offshore Wind Farm that is visible in the distance.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure 3-2.

[121] Siemens Gamesa Renewable Energy.

A.2 Wind Measurement/Analysis and Wind Turbine Selection

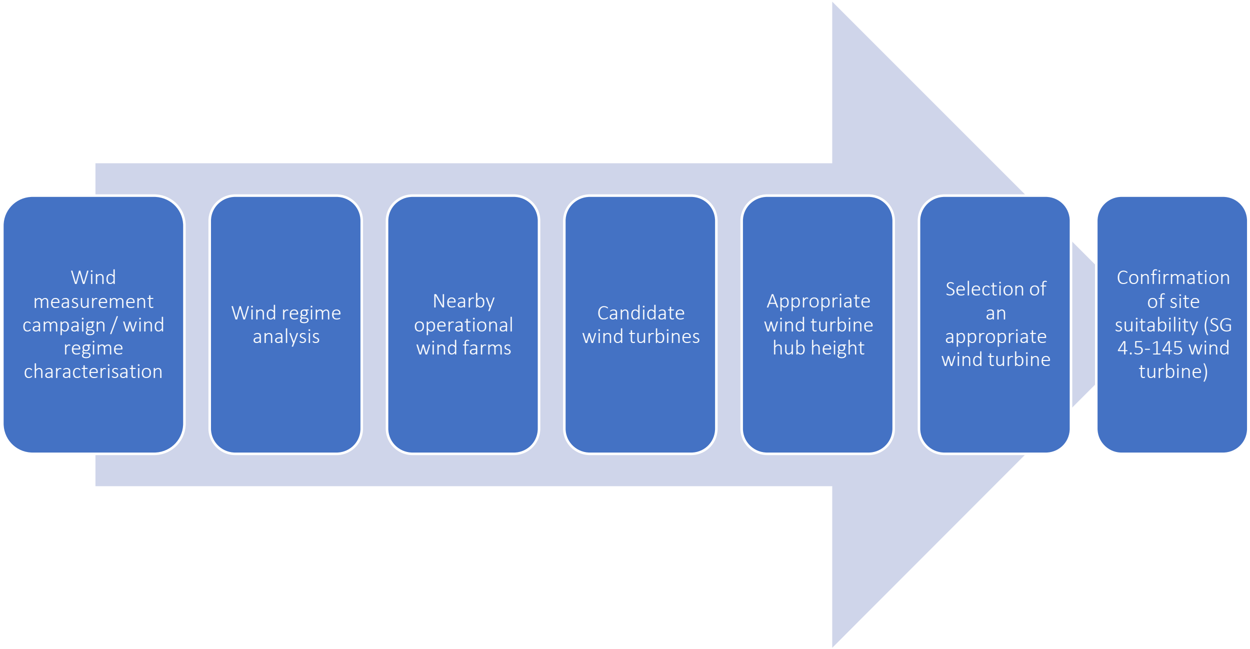


Figure A.4 - Wind Turbine Selection Process

Description: Summary of rigorous process followed to select the preferred wind turbine generator (Siemens Gamesa Model SGRE-4.5-145).

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure 6-1.

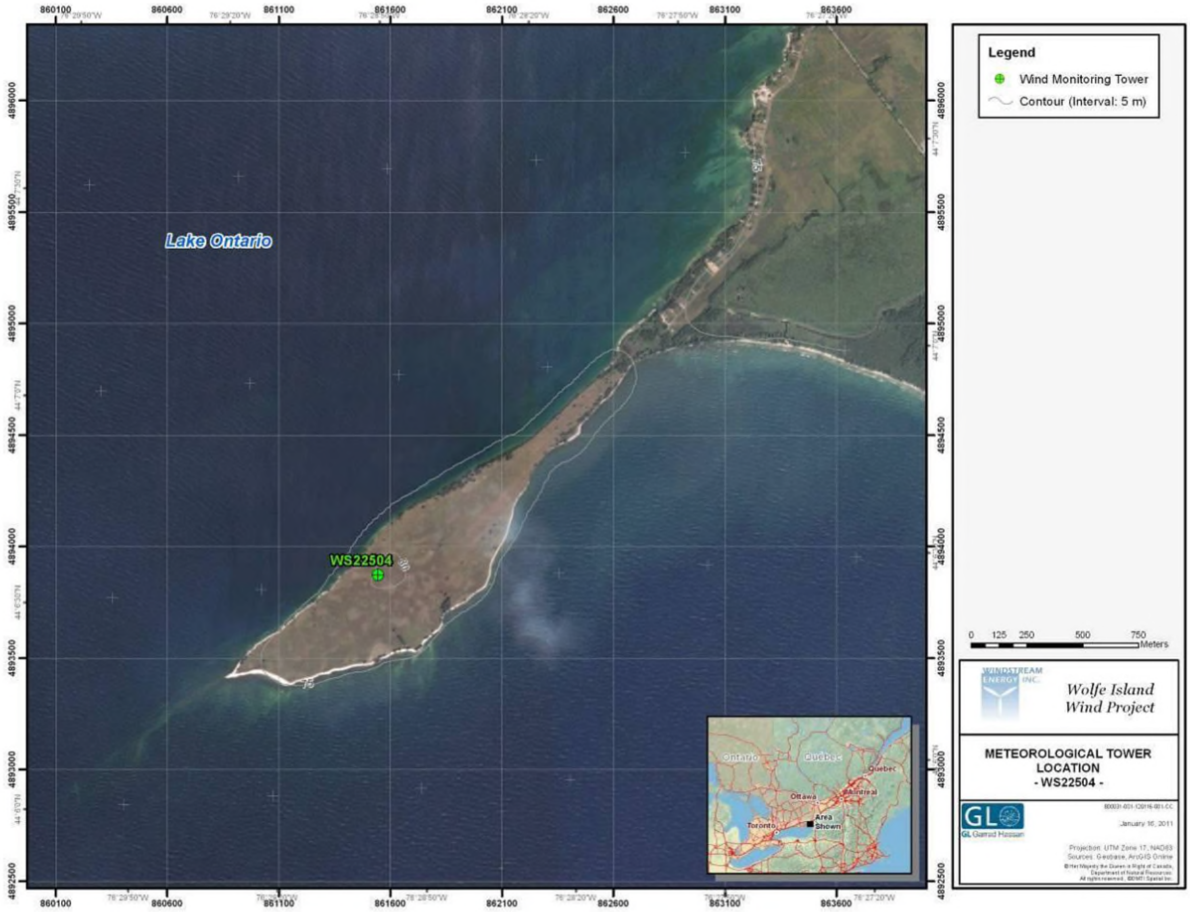


Figure A.5 - Map of Site

Description: Map showing location of meteorological tower (Mast WS2 2504) installed by Windstream at Long Point on Wolfe Island in 2011.

Reference: C-0627, ORTECH report, *Updated Wolfe Island Shoals Offshore Wind Farm Report – 2012*, dated October 24, 2012. Appendix C, Meteorological Mast Commissioning Report – Long Point Tower, Figure 2-1.

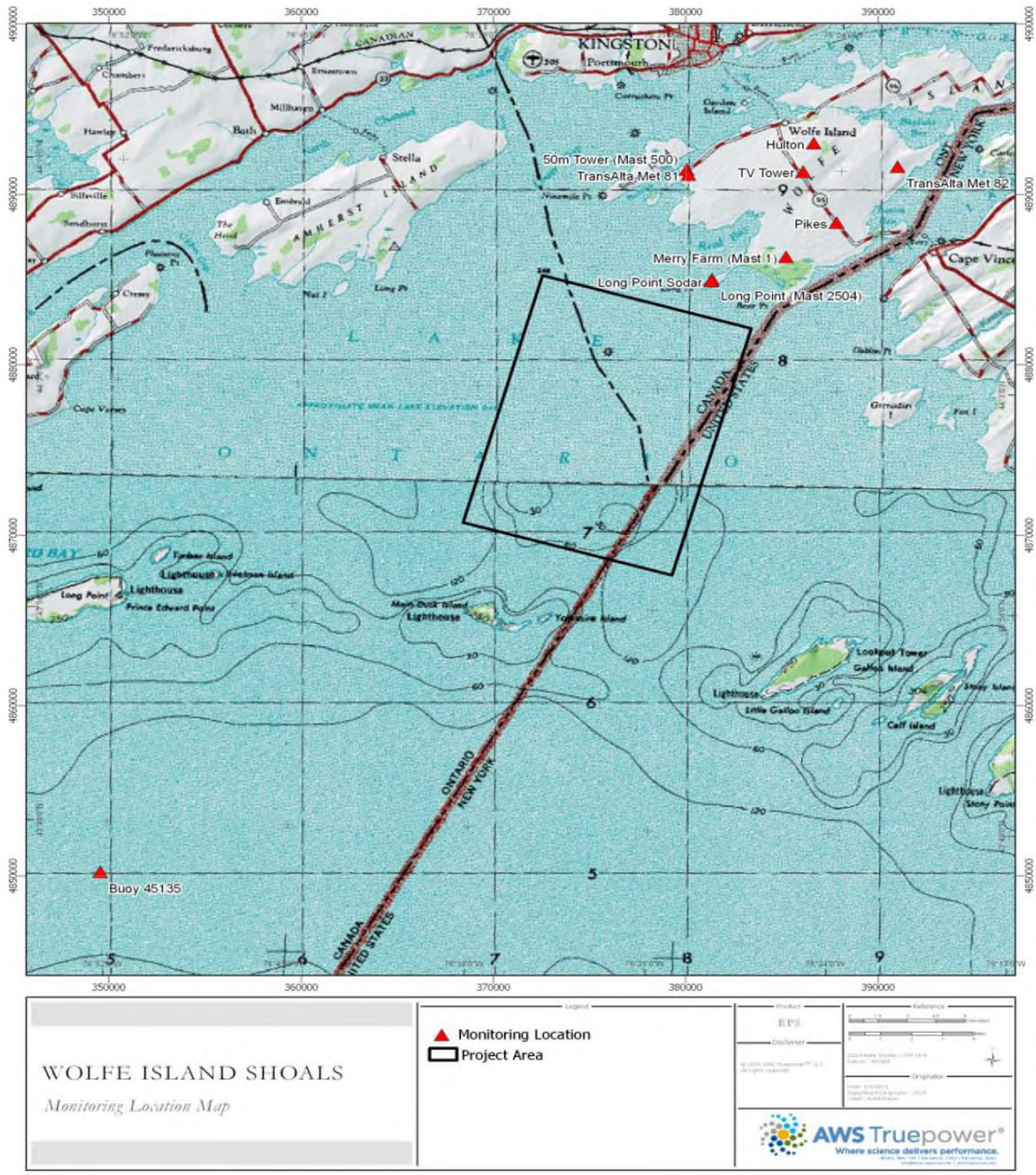


Figure A.6 - Monitoring Locations

Description: Map showing location of the meteorological tower (Mast 2504) and the Sonic Ranging And Detection (SODAR) instrument installed by Windstream at Long Point on Wolfe Island. Numerous other sources of meteorological data near the Wolfe Island Shoals Offshore Wind Farm are also shown and these sources were used to undertake preliminary assessments of the wind resource at WIS.

Reference: C-0657, AWS TruePower report, *Wind Resource and Energy Production Summary for the Wolfe Island Shoals Wind Project*, dated June 6, 2013. Figure 1.

Figure A.7 - View of Long Point Tower

Description: Photograph of meteorological tower (Mast WS2 2504) installed by Windstream at Long Point on Wolfe Island.

Reference: C-0627,ORTECH report, *Updated Wolfe Island Shoals Offshore Wind Farm Report – 2012*, dated October 24, 2012. Appendix C, Meteorological Mast Commissioning Report – Long Point Tower. Figure 4-2.

Figure A.8 - Instruments at Top Level and Levels 1 and 2

Description: Photograph of wind measurement instruments at top levels of meteorological tower (Mast WS2 2504) installed by Windstream at Long Point on Wolfe Island.

Reference: C-0627, ORTECH report, *Updated Wolfe Island Shoals Offshore Wind Farm Report – 2012*, dated October 24, 2012. Appendix C, Meteorological Mast Commissioning Report – Long Point Tower. Figure 4-3.

Figure A.9 - Instruments at Levels 6 and 7

Description: Photograph of wind measurement instruments at lowest levels of meteorological tower (Mast WS2 2504) installed by Windstream at Long Point on Wolfe Island.

Reference: C-0627, ORTECH report, *Updated Wolfe Island Shoals Offshore Wind Farm Report – 2012*, dated October 24, 2012. Appendix C, Meteorological Mast Commissioning Report – Long Point Tower. Figure 4-6.

Figure A.10 - Solar Panels, Wind Turbine, Battery Bank, Logger Enclosure, Satellite Antenna and Temperature Sensor at the Mast Base

Description: Photograph of the base of meteorological tower (Mast WS2 2504) installed by Windstream at Long Point on Wolfe Island.

Reference: C-0627, ORTECH report, *Updated Wolfe Island Shoals Offshore Wind Farm Report – 2012*, dated October 24, 2012. Appendix C, Meteorological Mast Commissioning Report – Long Point Tower. Figure 4-7.

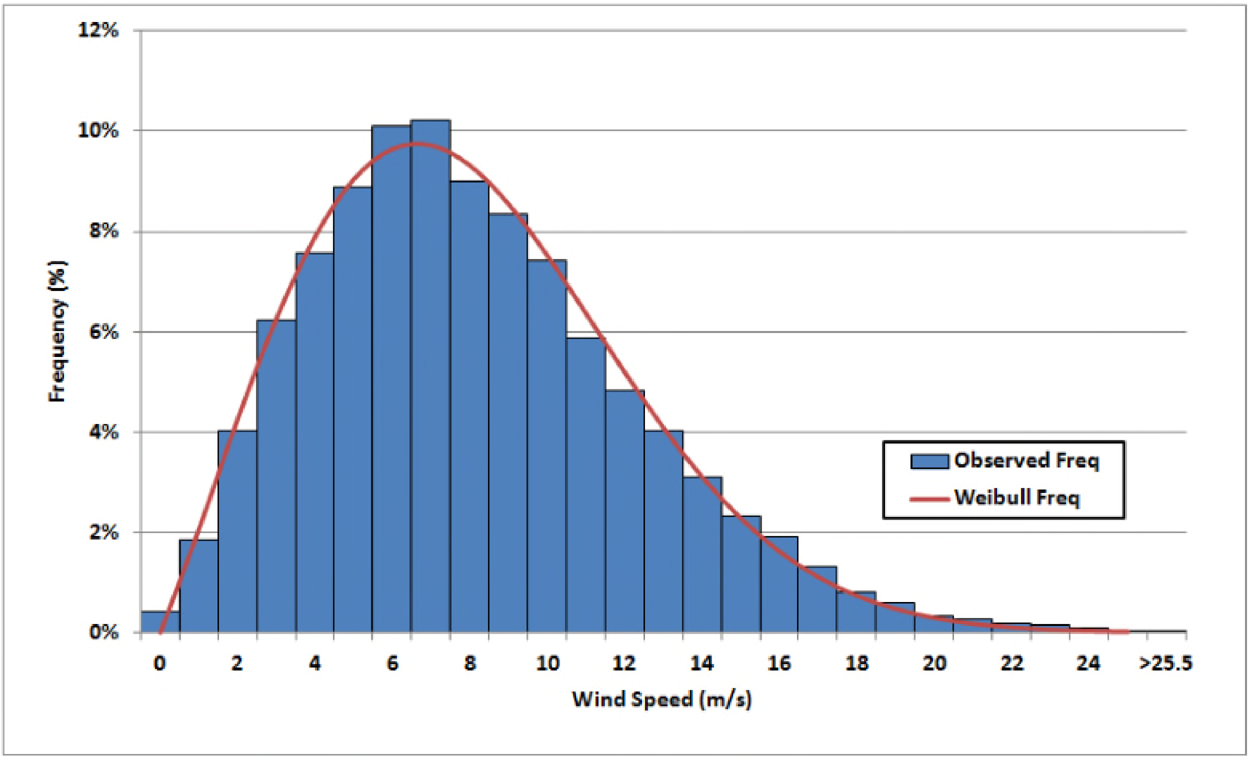


Figure A.11 - Mast 2504 Observed Wind Speed Frequency Distribution and Fitted Weibull Curve

Description: Detailed analysis of data measured at different elevations on the meteorological tower (Mast 2504) installed by Windstream at Long Point on Wolfe Island was employed to generate this wind speed distribution.

Reference: C-0657, AWS TruePower report, *Wind Resource and Energy Production Summary for the Wolfe Island Shoals Wind Project*, dated June 6, 2013. Figure 2.

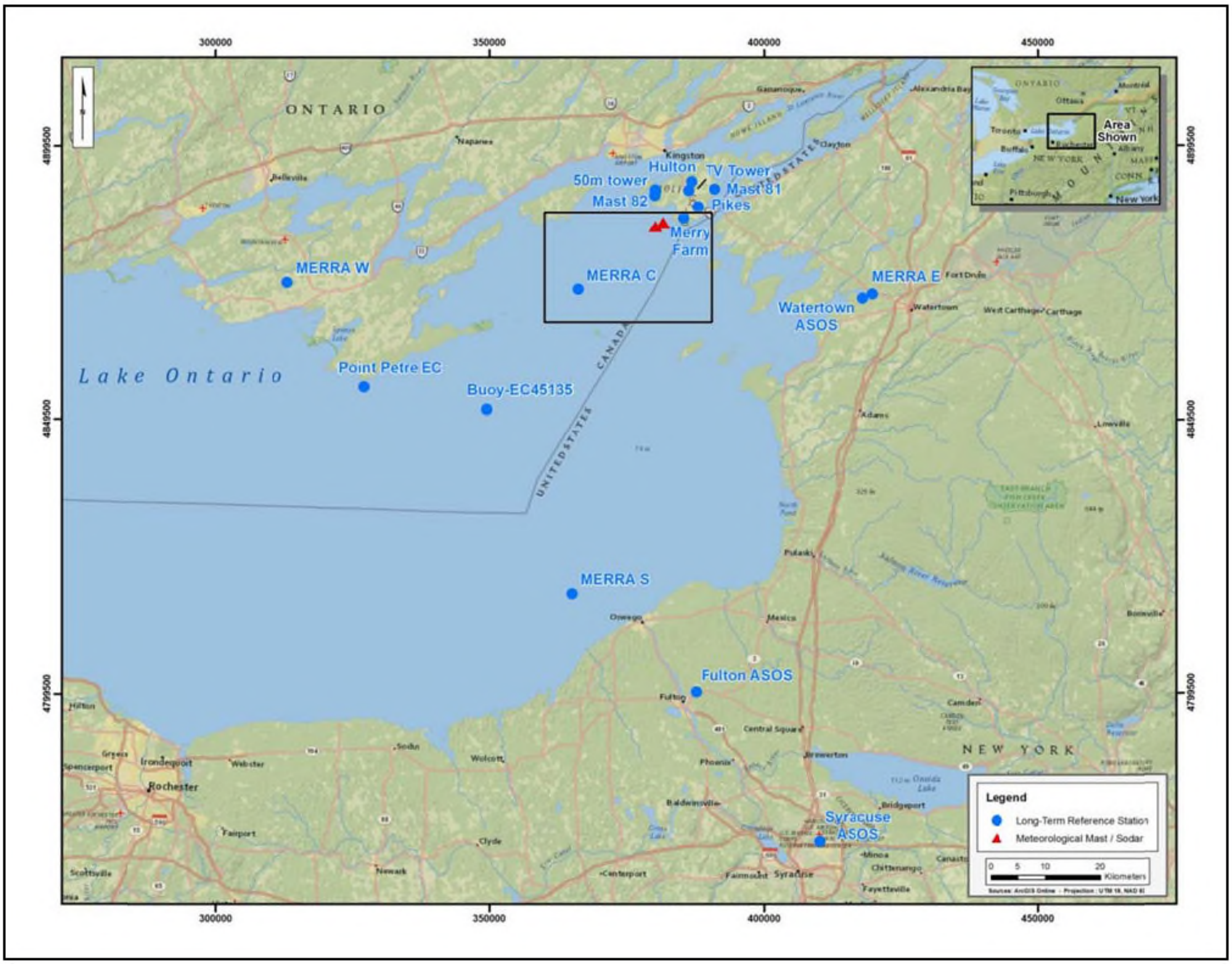


Figure A.12 - Location of the Wolfe Island Shoals Wind Farm and Reference Stations

Description: Map showing location of the meteorological tower and the Sonic Ranging And Detection (SODAR) instrument installed by Windstream at Long Point on Wolfe Island. Numerous other sources of meteorological data also near the Wolfe Island Shoals Offshore Wind Farm are shown.

Reference: C-0670, GL Garrad Hassan report, *Wolfe Island Shoals Wind Farm Preliminary Energy Assessment*, dated September 30, 2013. Figure 1.

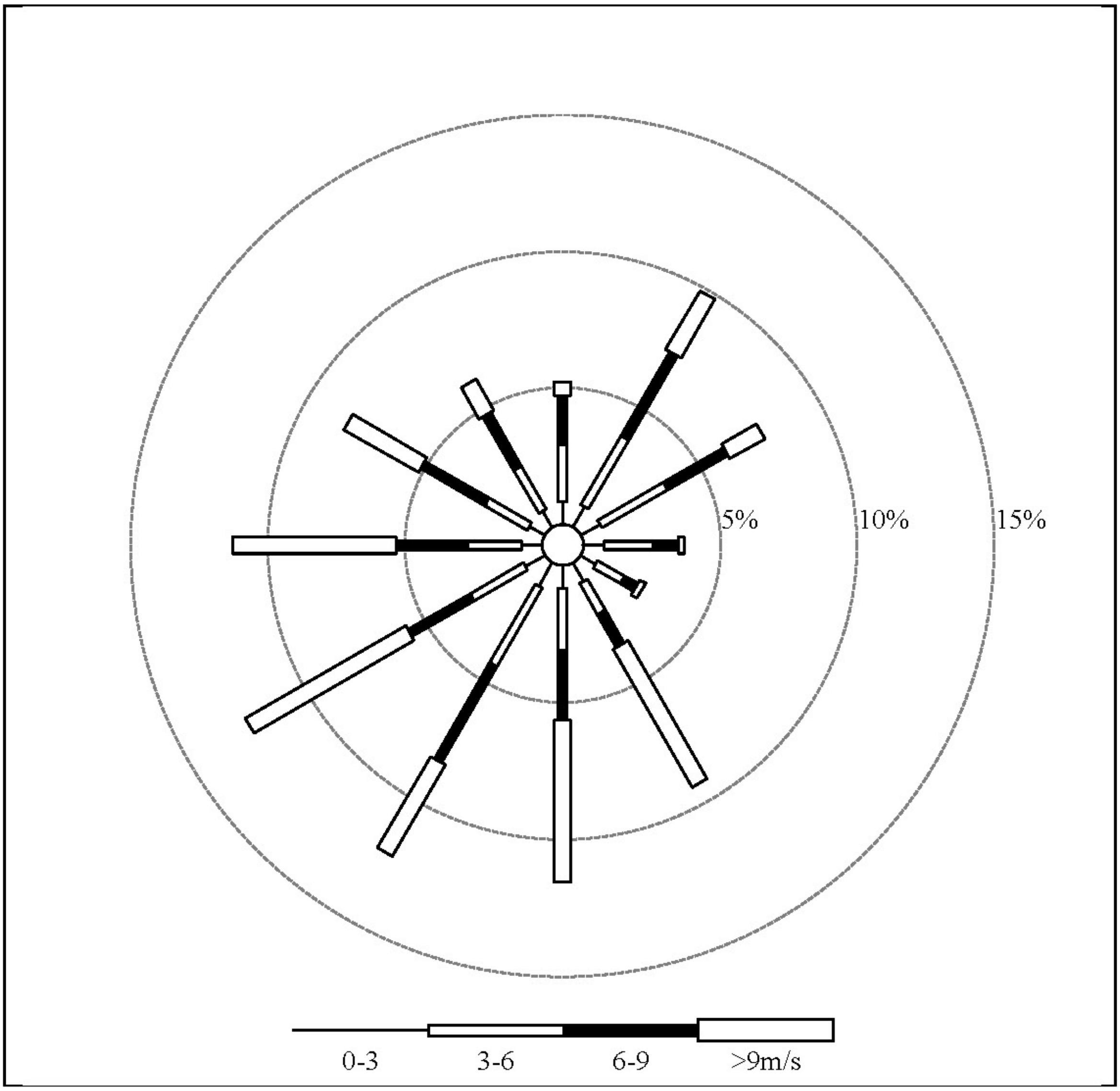


Figure A.13 - Predicted Long-term Annual Wind Rose at 90m at Mast 2504

Description: Detailed analysis of data measured at different elevations on the meteorological tower (Mast 2504) installed by Windstream at Long Point on Wolfe Island was undertaken to generate this wind rose. Winds predominantly blow from the south, south-west and west providing a strong wind resource for the Wolfe Island Shoals Offshore Wind Farm.

Reference: C-0670, GL Garrad Hassan report, *Wolfe Island Shoals Wind Farm Preliminary Energy Assessment*, dated September 30, 2013. Figure 3.

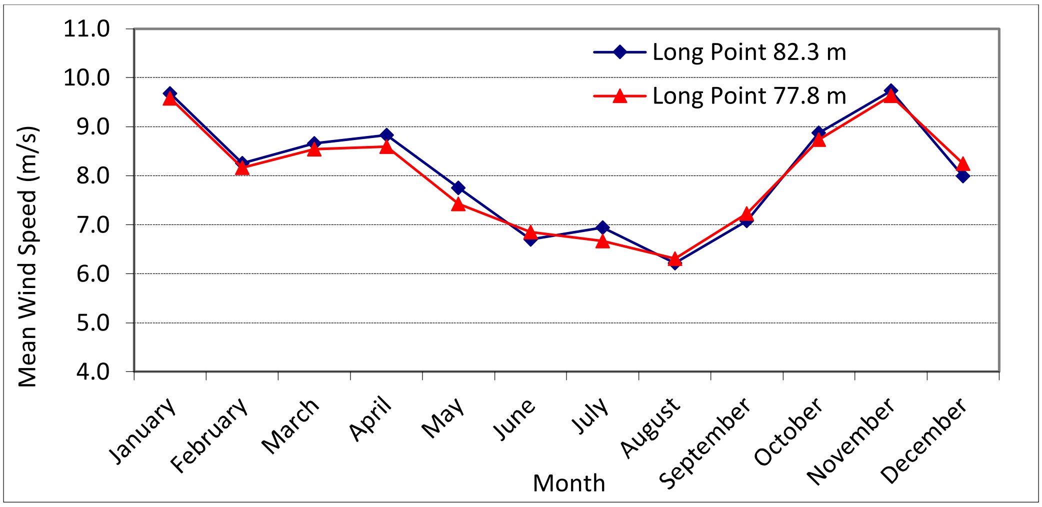


Figure A.14 - Monthly Wind Speeds at 77.8m and 82.3m Height Long Point Met Mast

Description: Detailed analysis of approximately 3.5 years of data measured at different elevations on the meteorological tower installed by Windstream at Long Point on Wolfe Island shows how wind speed varies throughout the year.

Reference: C-2099, ORTECH report, *Wind Resource Assessment for Wolfe Island Shoals Offshore Wind Project – 2017*, dated June 5, 2017. Figure 6.

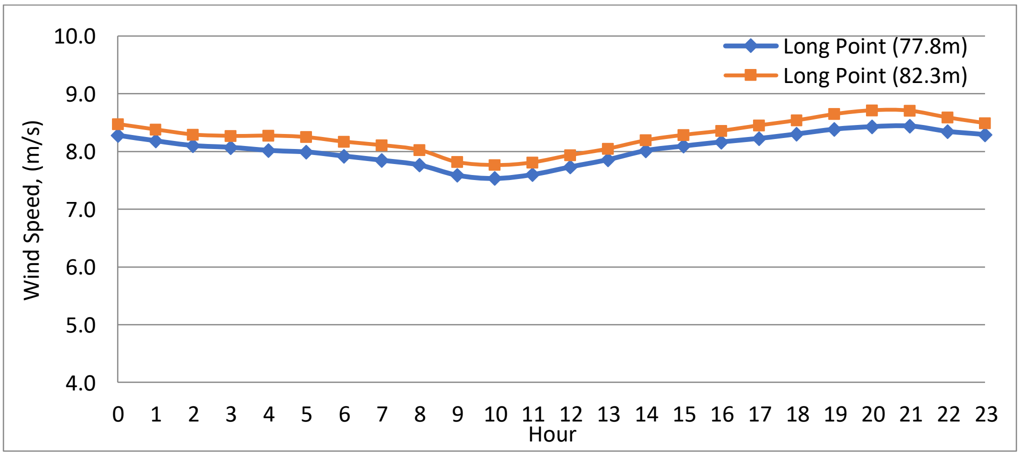


Figure A.15 - Diurnal Variation in Wind Speeds at 77.8m and 82.3m Height Long Point Met Mast

Description: Detailed analysis of approximately 3.5 years of data measured at different elevations on the meteorological tower installed by Windstream at Long Point on Wolfe Island shows how wind speed varies throughout the day.

Reference: C-2099, ORTECH report, *Wind Resource Assessment for Wolfe Island Shoals Offshore Wind Project – 2017*, dated June 5, 2017. Figure 7.

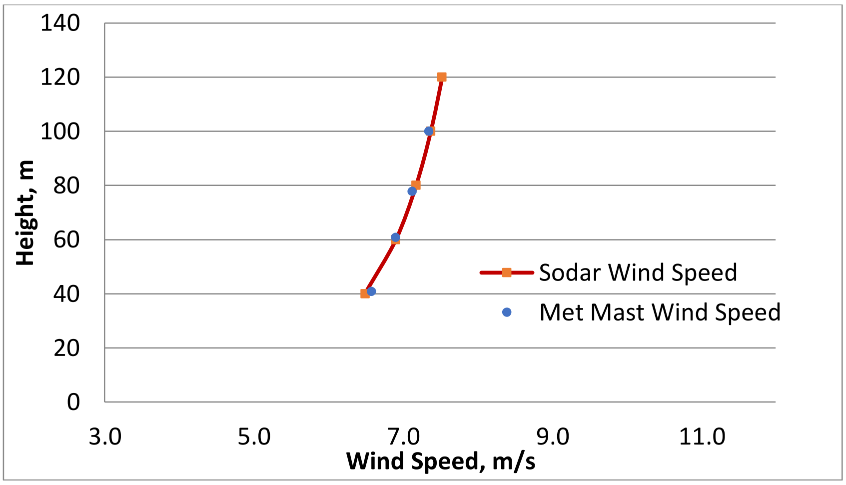


Figure A.16 - Average of Concurrent SODAR and Met Mast Wind Speeds (40m to 120m)

Description: Detailed analysis of approximately 3.5 years of data measured at different elevations on the meteorological tower and the Sonic Ranging And Detection (SODAR) instrument installed by Windstream at Long Point on Wolfe Island shows very good correlation between the wind speeds measured using these two independent measurement techniques and extends the wind assessment height to 120m.

Reference: C-2099, ORTECH report, *Wind Resource Assessment for Wolfe Island Shoals Offshore Wind Project – 2017*, dated June 5, 2017. Figure 13.

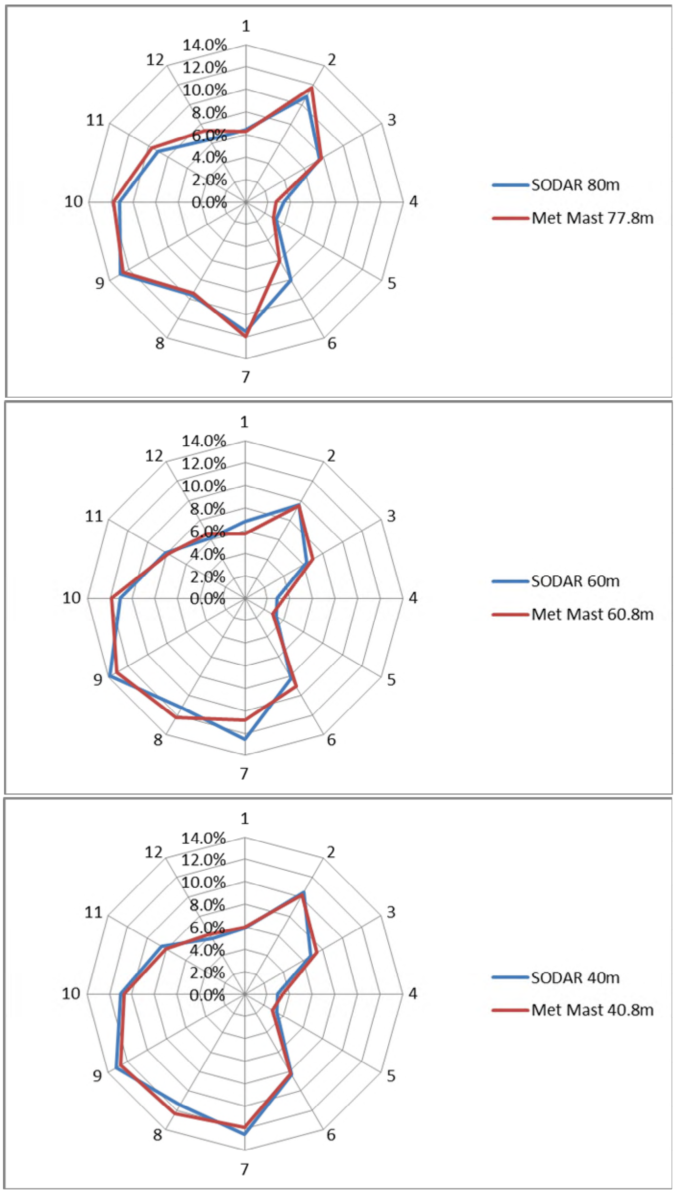


Figure A.17 - Wind Direction - Long Point Met Mast v SODAR at 77.8m, 60m, and 40m Heights

Description: Detailed analysis of approximately 3.5 years of data measured at different elevations on the meteorological tower and a Sonic Ranging And Detection (SODAR) instrument installed by Windstream at Long Point on Wolfe Island shows very good correlation between the wind direction measured using these two independent measurement techniques.

Reference: C-2099, ORTECH report, *Wind Resource Assessment for Wolfe Island Shoals Offshore Wind Project – 2017*, dated June 5, 2017. Figure 14.

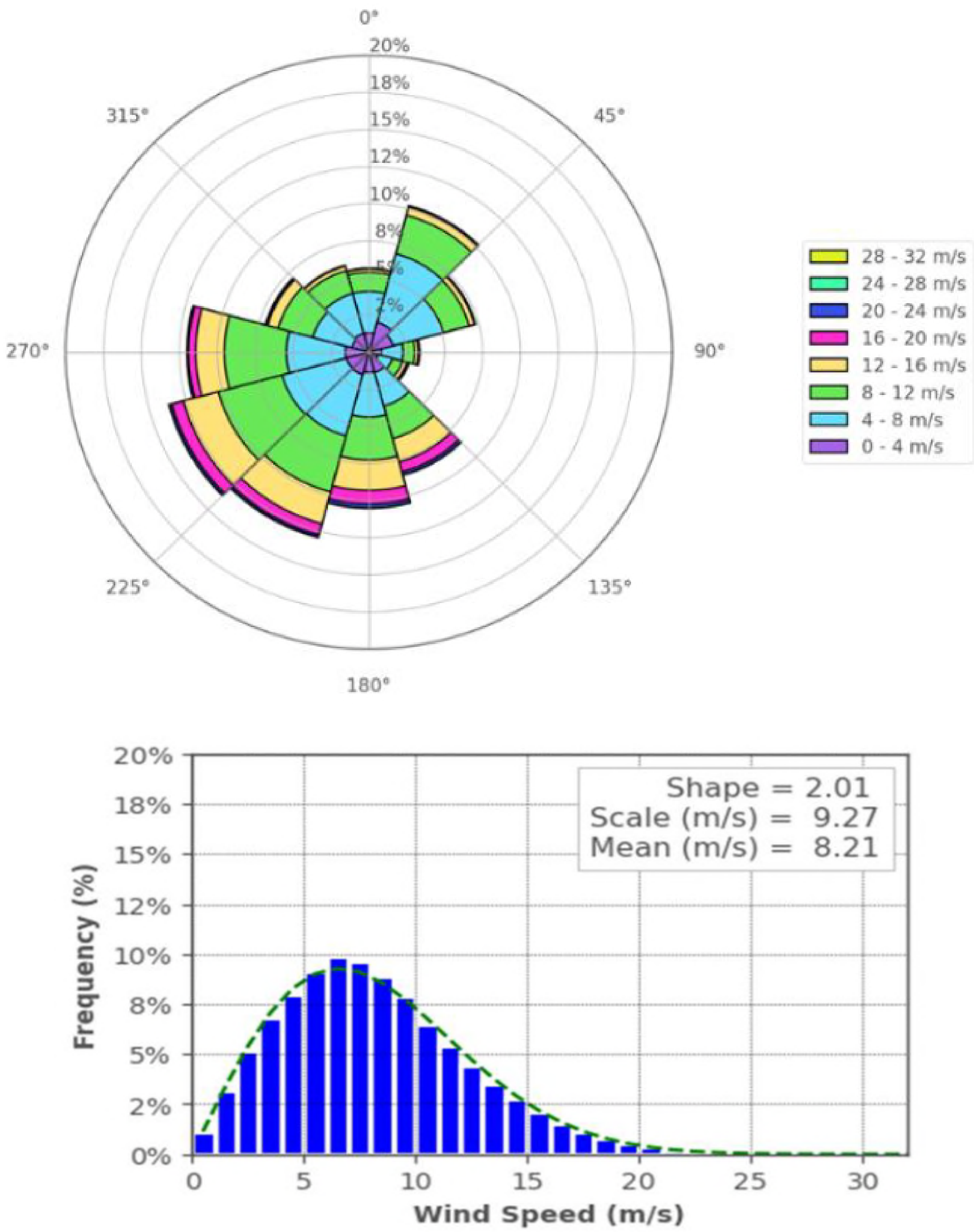


Figure A.18: Long-term Wind Rose and Wind Distribution at Mast Location at 100 m

Description: Detailed analysis of approximately 3.5 years of data measured at different elevations on the meteorological tower installed by Windstream at Long Point on Wolfe Island. Results show the wind blows predominantly from the south, south-west and west providing a strong wind resource for the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-Wood, *Wolfe Island Shoals Wind Farm Energy Yield Assessment Technical Report*, dated June 4, 2021. Appendix A, Figure A-2.

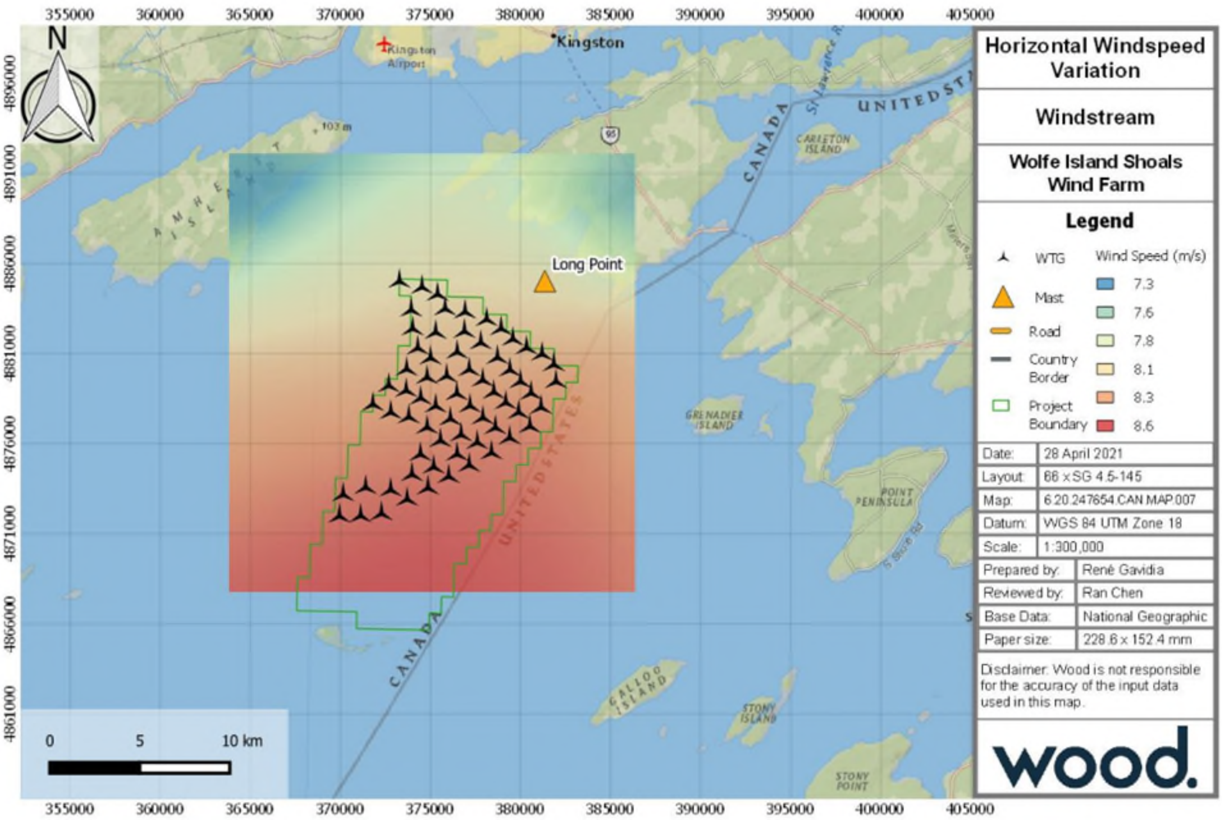


Figure A.19 - Project Map

Description: Wind speed map of WIS based on wind studies performed utilizing approximately 3.5 years of local wind data measured at nearby Long Point.

Reference: CER-Wood, *Wolfe Island Shoals Wind Farm Energy Yield Assessment Technical Report*, dated June 4, 2021. Figure 1.

Parameter / Unit	Value
P50 Energy Yield [GWh/annum]	1159.9
P50 Capacity Factor [%]	44.6
P90 Energy Yield [GWh/annum]	1069.3
P90 Capacity Factor [%]	41.1
P99 Energy Yield [GWh/annum]	995.5
P99 Capacity Factor [%]	38.3

Figure A.20 - Energy Yield Summary (20-year Probability of Exceedance)

Description: As many as ten detailed wind studies have been performed by five independent experts confirming the energy production potential of the Wolfe Island Shoals Offshore Wind Farm. The latest energy yield assessment conducted by Wood indicates annual energy production will exceed 1160GWh/year at 50% probability and will exceed 996 GWh/year at 99% probability.

Reference: CER-Wood, *Wolfe Island Shoals Wind Farm Energy Yield Assessment Technical Report*, dated June 4, 2021. Table RS-0-1.

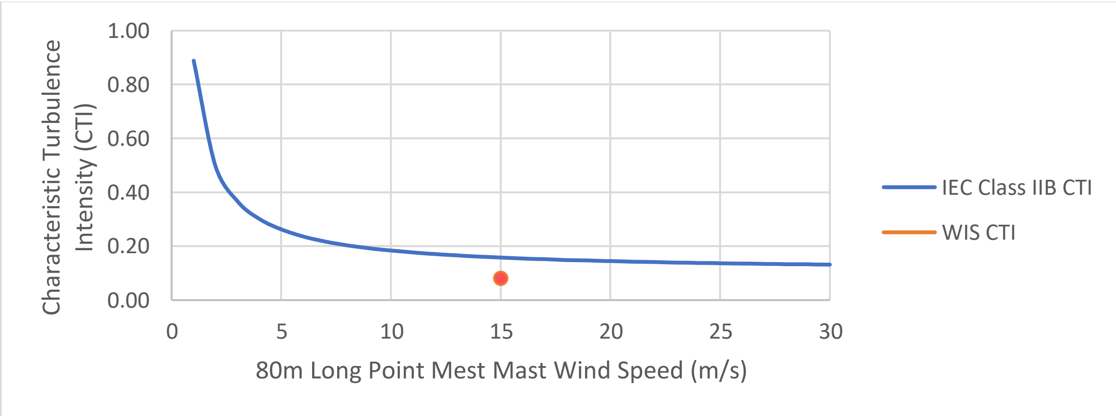


Figure A.21 - IEC Class II$_B$ CTI versus Wind Speed with Long Point Met Mast CTI at 15m/s

Description: In support of the turbine selection process, the wind characteristics (in this case turbulence intensity) were evaluated to confirm the class of the preferred wind turbine generator was suitable for the area.

Reference: CER-Two Dogs (Wind Turbine Selection Report), *Wolfe Island Shoals Offshore Wind Farm Wind Turbine Generator Selection*, dated February 18, 2022. Figure 2.

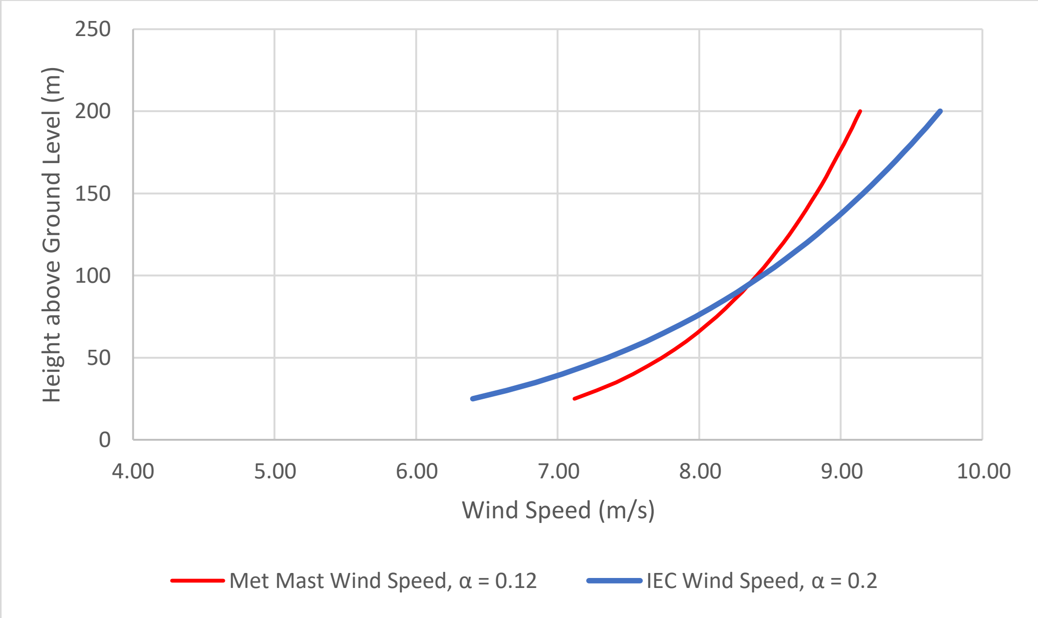


Figure A.22 - Site versus IEC Wind Shear Coefficient

Description: In support of the turbine selection process, the wind characteristics (in this case wind shear) were evaluated to confirm the class of the preferred wind turbine generator was suitable for the area.

Reference: CER-Two Dogs (Wind Turbine Selection Report), *Wolfe Island Shoals Offshore Wind Farm Wind Turbine Generator Selection*, dated February 18, 2022. Figure 3.

Figure A.23 - GBF Hub Height Analysis

Description: In support of the turbine selection process, the rotor diameter/hub height combination of the preferred wind turbine generator selected for the Wolfe Island Shoals Offshore Wind Farm was confirmed to be comparable to other worldwide offshore wind farms utilizing gravity base foundations.

Reference: CER-Two Dogs (Wind Turbine Selection Report), *Wolfe Island Shoals Offshore Wind Farm Wind Turbine Generator Selection*, dated February 18, 2022. Figure 4.

Description	Wolfe Island Shoals 2020: SG 4.5-145	Wolfe Island Shoals 2020: V136 4.2	Wolfe Island Shoals 2020: V136 3.45	Wolfe Island Shoals 2020: SG 132-3.4
Total Capex, including GBF facility & 10% Contingency ($mCAD)	1,055	1,078	1,168	1,177
Annual Opex ($mCAD)	32.40	34.34	40.06	40.88
AEP (MWh/Annum)	1,159,900	1,113,400	1,193,500	1,176,700
Cost of Energy (20 years, $CAD/MWh)	73	79	83	85

Figure A.24 - Relative Cost of Energy for WIS Layouts

Description: Following confirmation of the technical suitability, the preferred wind turbine generator (Siemens Gamesa Model SGRE-4.5-145) was selected as also provided the lowest cost of energy.

Reference: CER-Two Dogs (Wind Turbine Selection Report), *Wolfe Island Shoals Offshore Wind Farm Wind Turbine Generator Selection*, dated February 18, 2022. Table 10.

A.3 Lakebed Measurement/Analysis

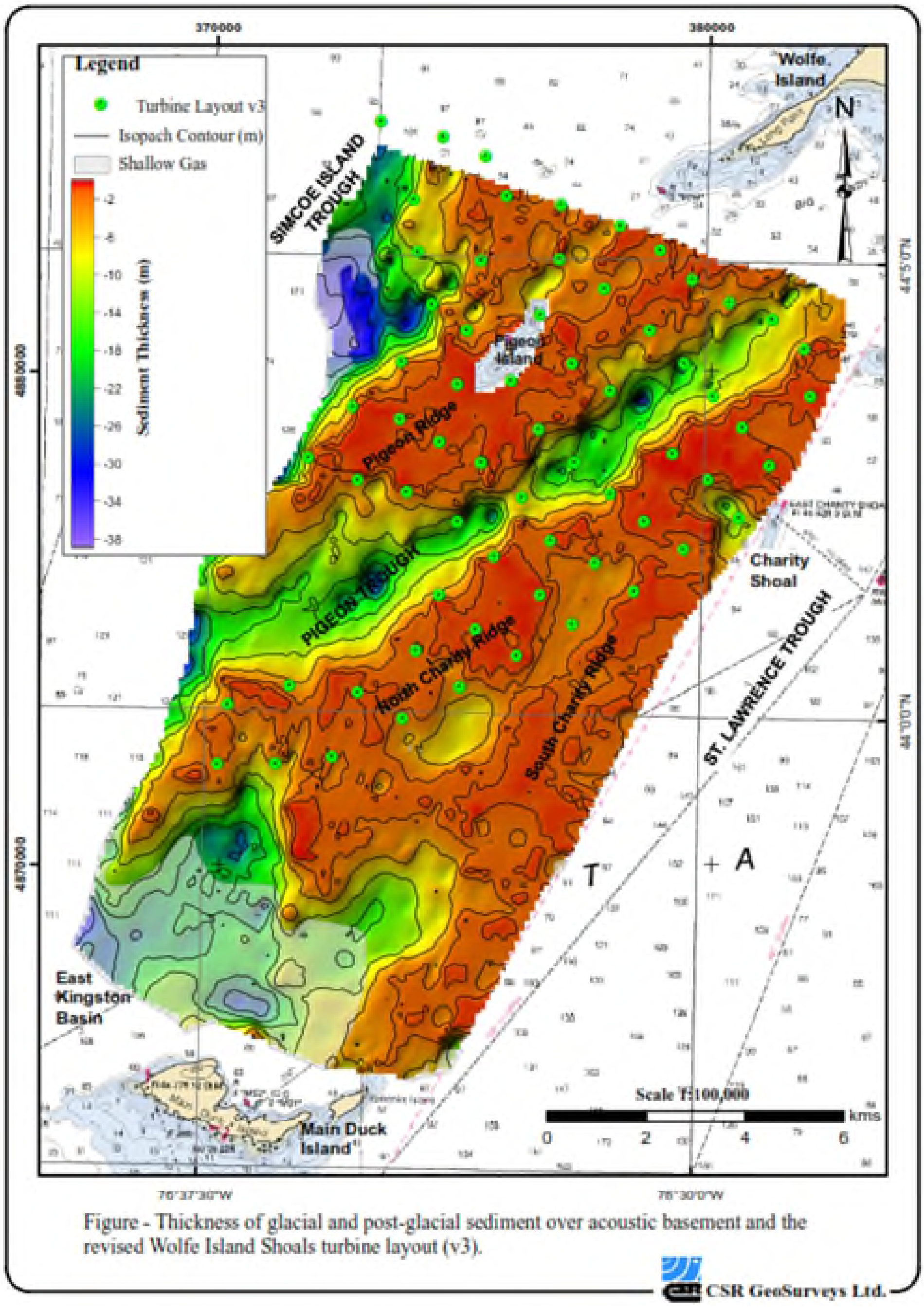


Figure A.25 - Thickness of Sediment over Acoustic Basement

Description: Study confirms the range in depth of various types of sediment across the sixty-six (66) wind turbine generator locations which were considered in support of the engineering design of the foundations used to support the wind turbine generators.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure 3-1 (Source: CSR).

A.4 Wind Turbine Foundation Selection/Design and Fabrication

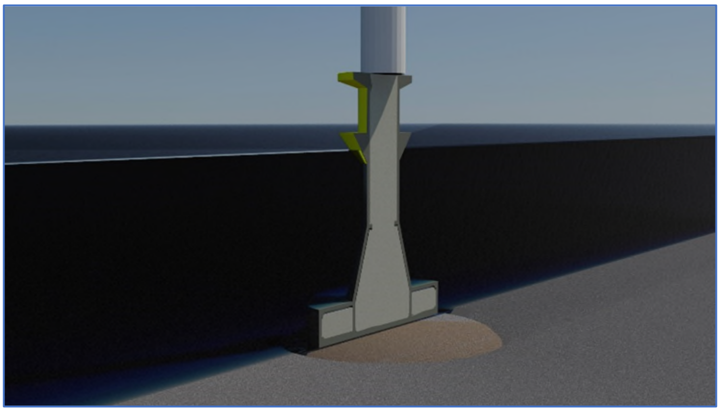



Figure A.26 - (Left) COWI Render of Fully Installed NAFTA1 Design, (Right) COWI Render of Installed GBF Section

Description: Following a detailed assessment of offshore wind turbine generator foundation options, COWI selected gravity base foundations (shown) as the preferred option for the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-COWI (Wind Turbine Gravity Base Foundation Design), *Wolfe Island Shoals NAFTA2 Wind Turbine Gravity Base Foundation Design Expert Witness Report*, dated February 18, 2022. Figure 5-1 (Left) and Figure 5-2 (Right).

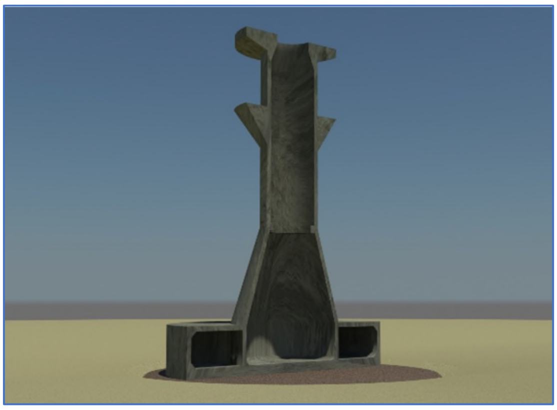
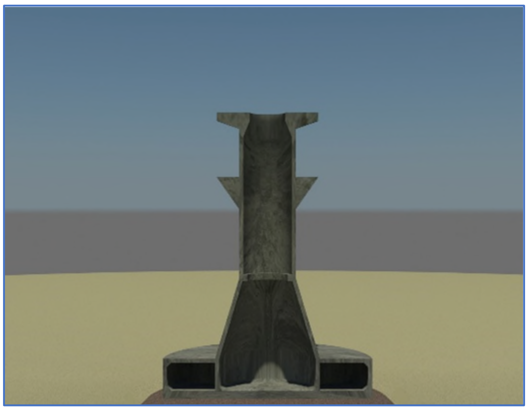



Figure A.27 - COWI Render of NAFTA1 GBF Section

Description: Cross section of gravity base foundation design proposed for the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-COWI (Wind Turbine Gravity Base Foundation Design), *Wolfe Island Shoals NAFTA2 Wind Turbine Gravity Base Foundation Design Expert Witness Report*, dated February 18, 2022. Figure 5-3 (Left) and Figure 5-4 (Right).

Figure A.28 - Thornton Bank Offshore Wind Farm GBF Under Construction, February 2008

Description: Gravity base foundations have been used for numerous offshore wind farms.

Reference: CER-COWI (Wind Turbine Gravity Base Foundation Design), *Wolfe Island Shoals NAFTA2 Wind Turbine Gravity Base Foundation Design Expert Witness Report*, dated February 18, 2022. Figure 3-3 (Left) and Figure 3-4 (Right).

Figure A.29 - Lillgrund Offshore Wind Farm with GBFs

Description: Gravity base foundations have been used for numerous offshore wind farms, such as Lillgrund, located in the Baltic Sea off the coast of Denmark.

Reference: CER-COWI (Wind Turbine Gravity Base Foundation Design), *Wolfe Island Shoals NAFTA2 Wind Turbine Gravity Base Foundation Design Expert Witness Report*, dated February 18, 2022. Figure 4-17 (Courtesy of Vattenfall).

Figure A.30 - St Mary's Cement Facility Bowmanville, Ontario

Description: Several facilities along the shore of Lake Ontario are suitable to support the construction of Gravity Base Foundations including the St Mary's Cement Facility.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure G-9.

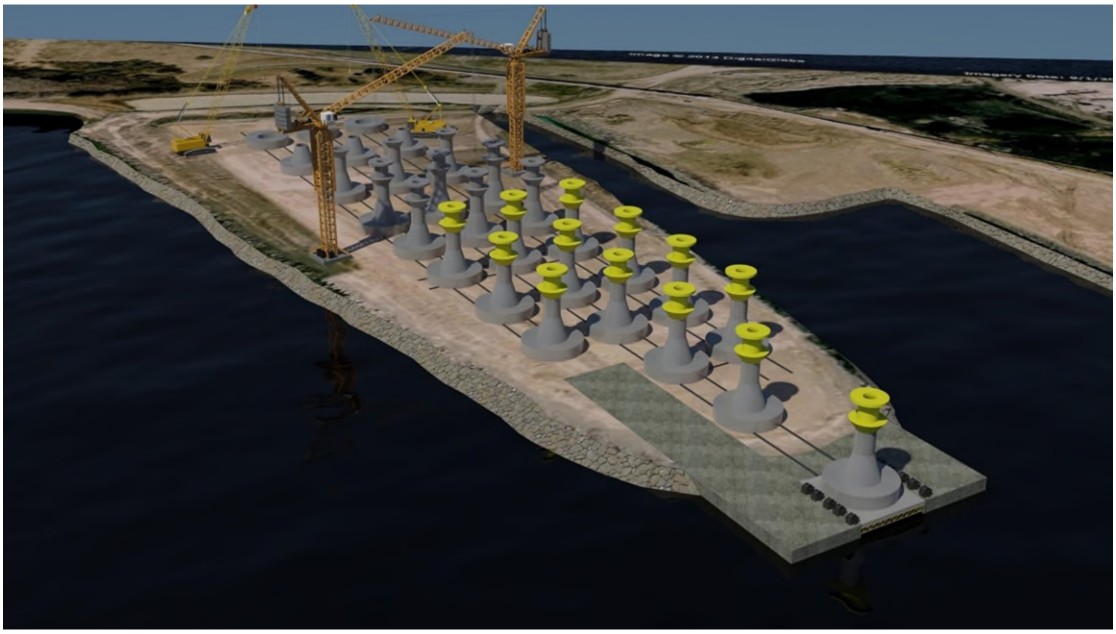


Figure A.31 - Fabrication Facility Layout with Foundation on Elevator

Description: Gravity Base Foundation Fabrication Facility production line with single completed foundation at lakeside on elevator platform (bottom-right) ready to be lowered into the lake.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure G-12.

Figure A.32 - Fabrication Facility with Foundation in Launch Position

Description: Gravity Base Foundation Fabrication Facility production line with single completed foundation lowered into lake (bottom-right) and ready for supplemental floatation and towing to final location.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure G-13.

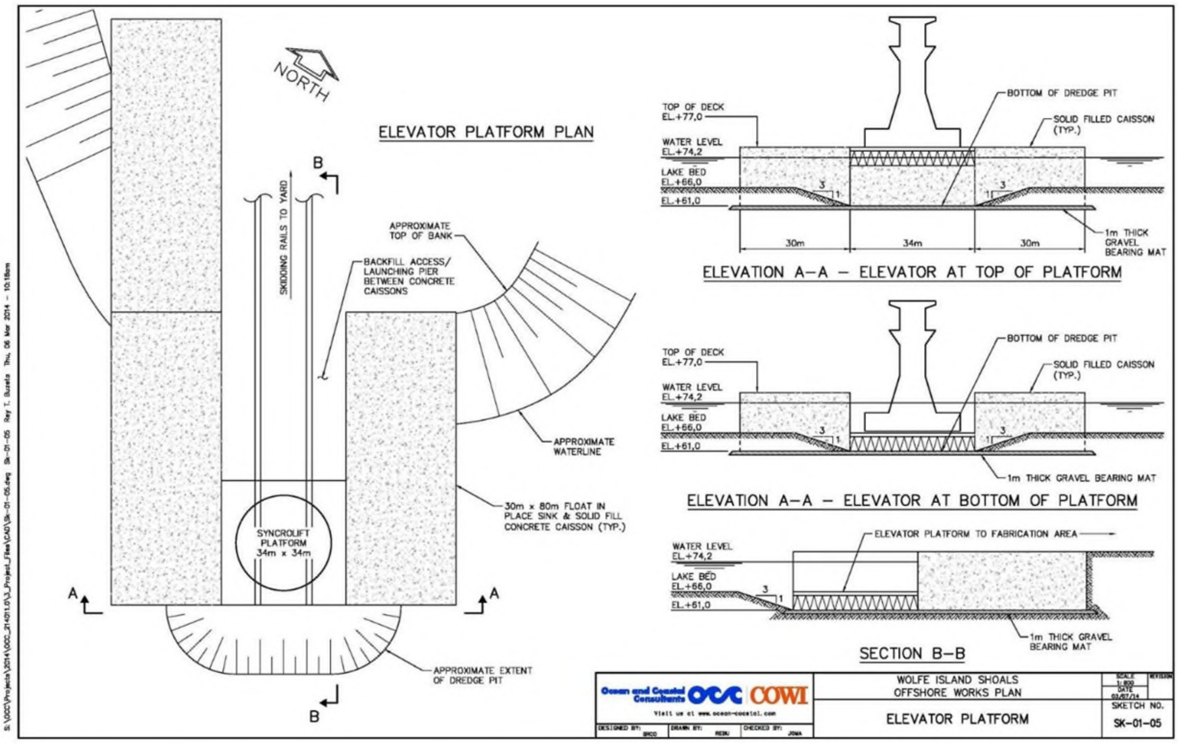


Figure A.33 - Foundation Elevator Detail

Description: Gravity Base Foundation Fabrication Facility elevator system designed by foundation experts, COWI.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure G-14.

A.5 Wind Turbine Foundation and Wind Turbine Generator Installation

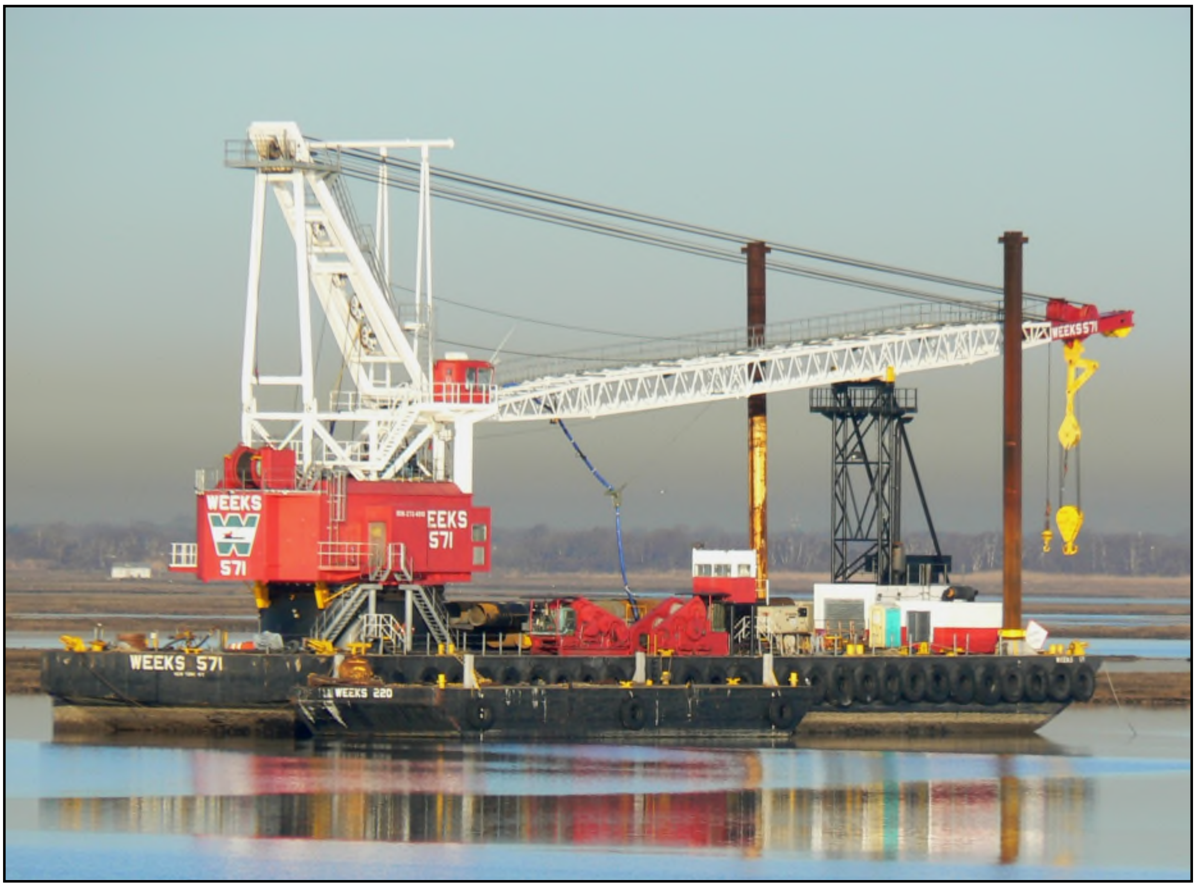


Figure A.34 - Weeks 571 Derrick Barge

Description: Weeks has the means and developed the methods for the transport and installation of gravity base foundations and wind turbine generators. The derrick barge shown is an example of the types of vessels used to support construction of the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022.

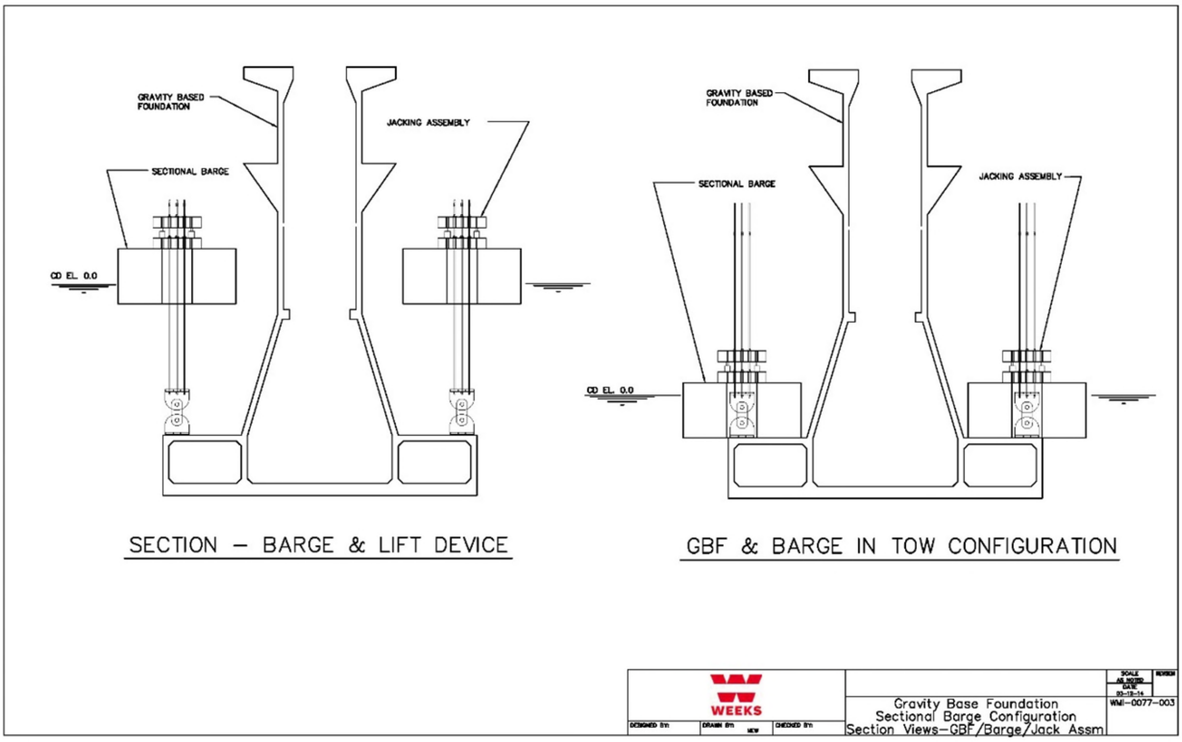


Figure A.35 - Jacking Assembly – Section Views

Description: Weeks has the means and developed the methods for the transport and installation of gravity base foundations. The system used to attach the gravity base foundation to the supplemental barge for transport to the installation location shown above.

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022. Drawing WMI-0077-003.

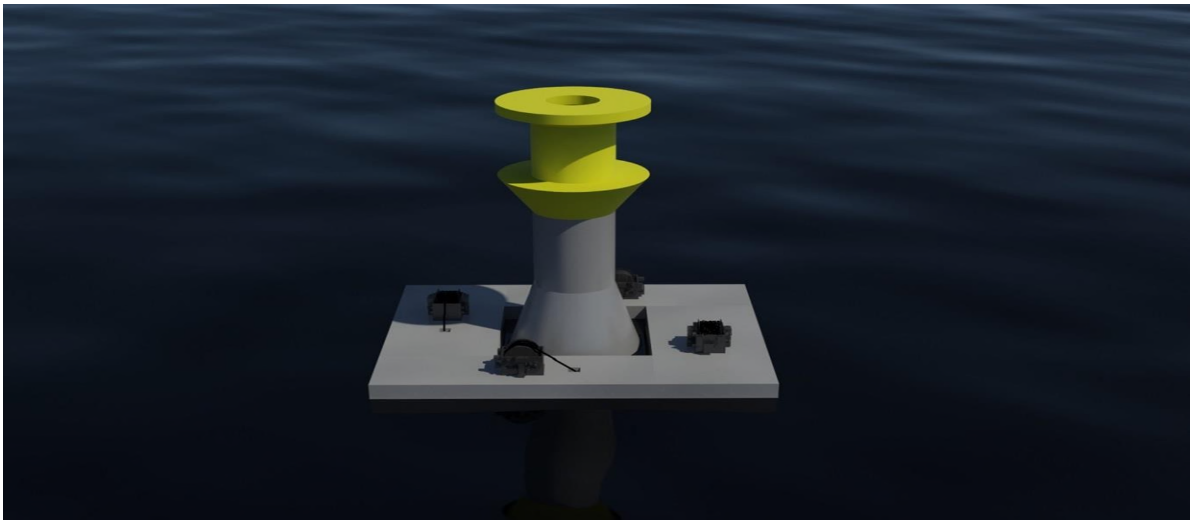


Figure A.36 - Semi Floating Gravity Foundation with Supplemental Floatation

Description: Weeks has the means and developed the methods for the transport and installation of gravity base foundations. The rendering shows the gravity base foundation attached to the supplemental barge ready for transport to the installation location.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure G-17.

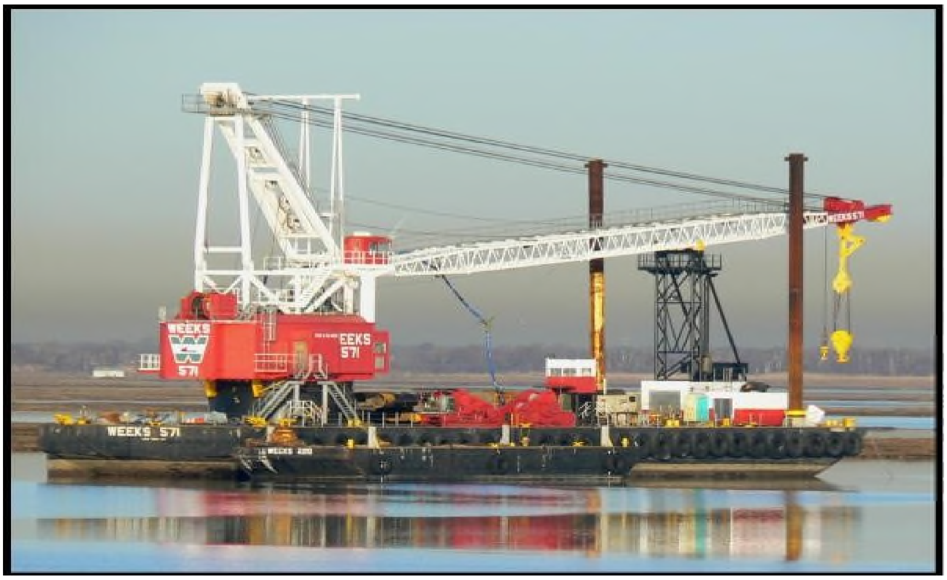


Figure A.37 - Weeks 571 Barge for Dredging and Bedding Stone Placement

Description: The lakebed is dredged (if necessary) and bedding stone laid to provide a stable level surface to place the gravity base foundation.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure G-15.

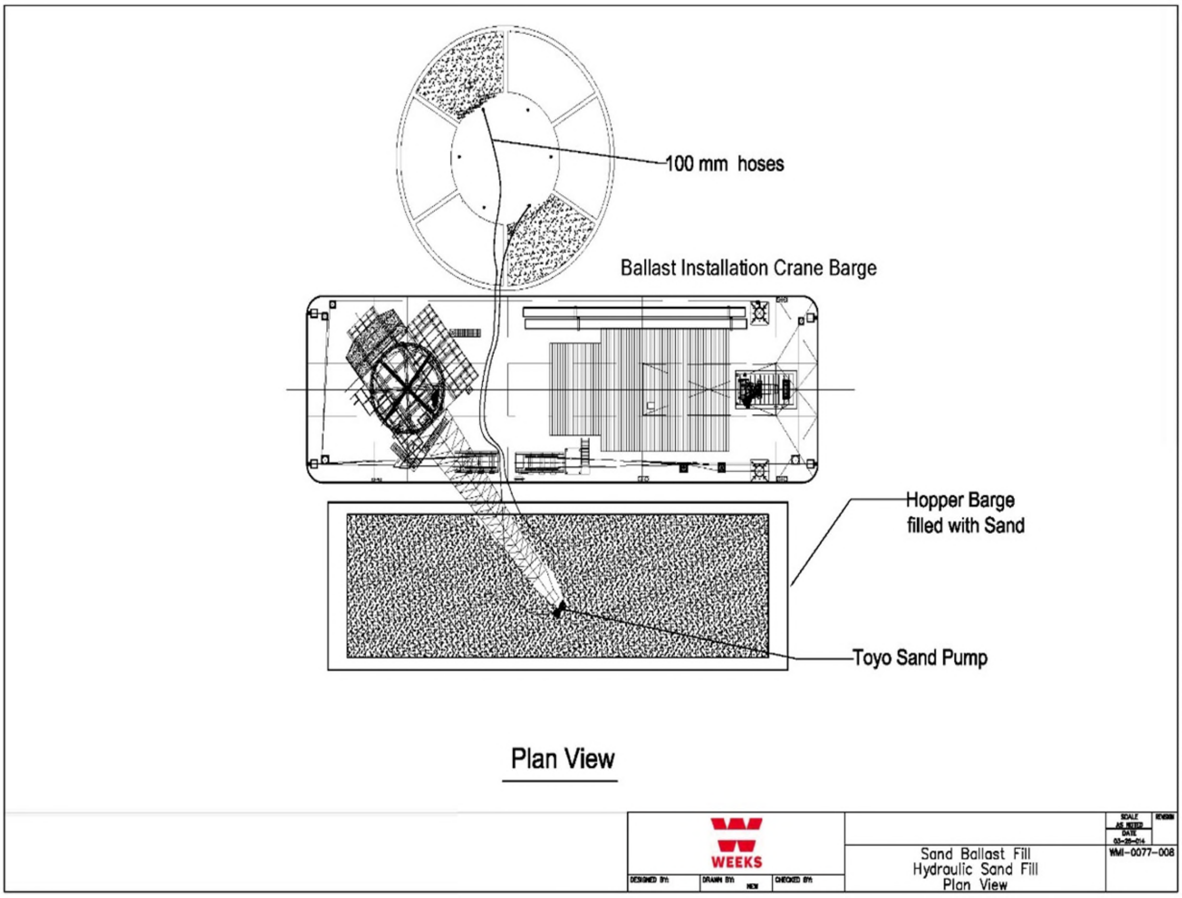


Figure A.38 - Hydraulic Sand Ballast – Plan View

Description: Weeks has the means and developed the methods for the installation of gravity base foundations (hydraulic sand ballast is pumped into hollows in the foundation once it is set in place).

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022. Drawing WMI-0077-008.

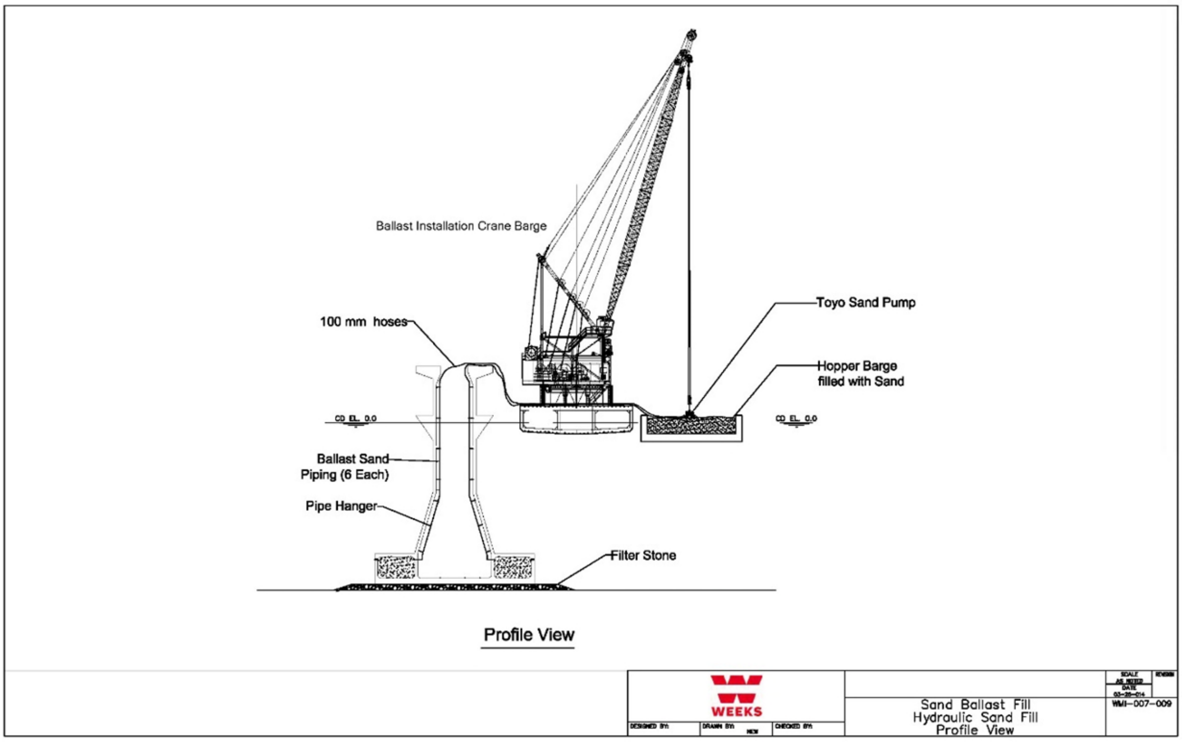


Figure A.39 - Hydraulic Sand Ballast – Profile View

Description: Weeks has the means and developed the methods for the installation of gravity base foundations (hydraulic sand ballast is pumped into hollows in the foundation once it is set in place).

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022. Drawing WMI-0077-009.

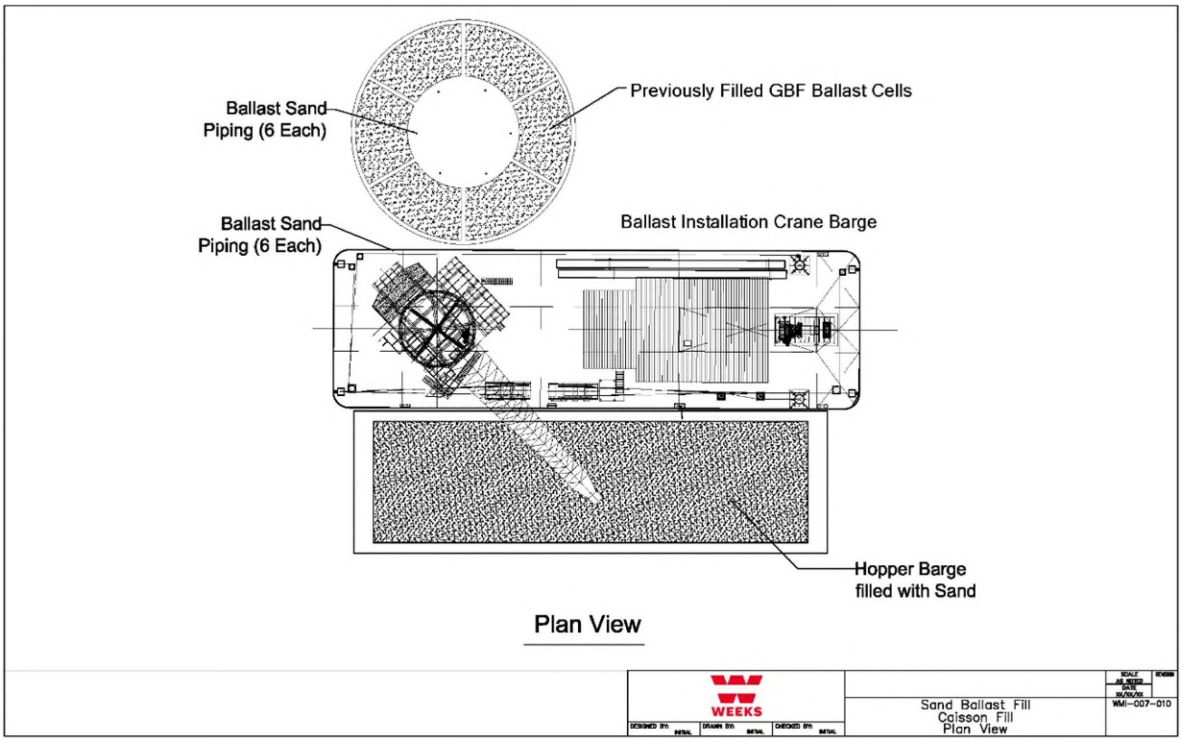


Figure A.40 - Mechanical Sand Ballast – Plan View

Description: Weeks has the means and developed the methods for the installation of gravity base foundations (mechanical sand ballast is also added to the hollows of the foundation once it is set in place).

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022. Drawing WMI-0077-010.

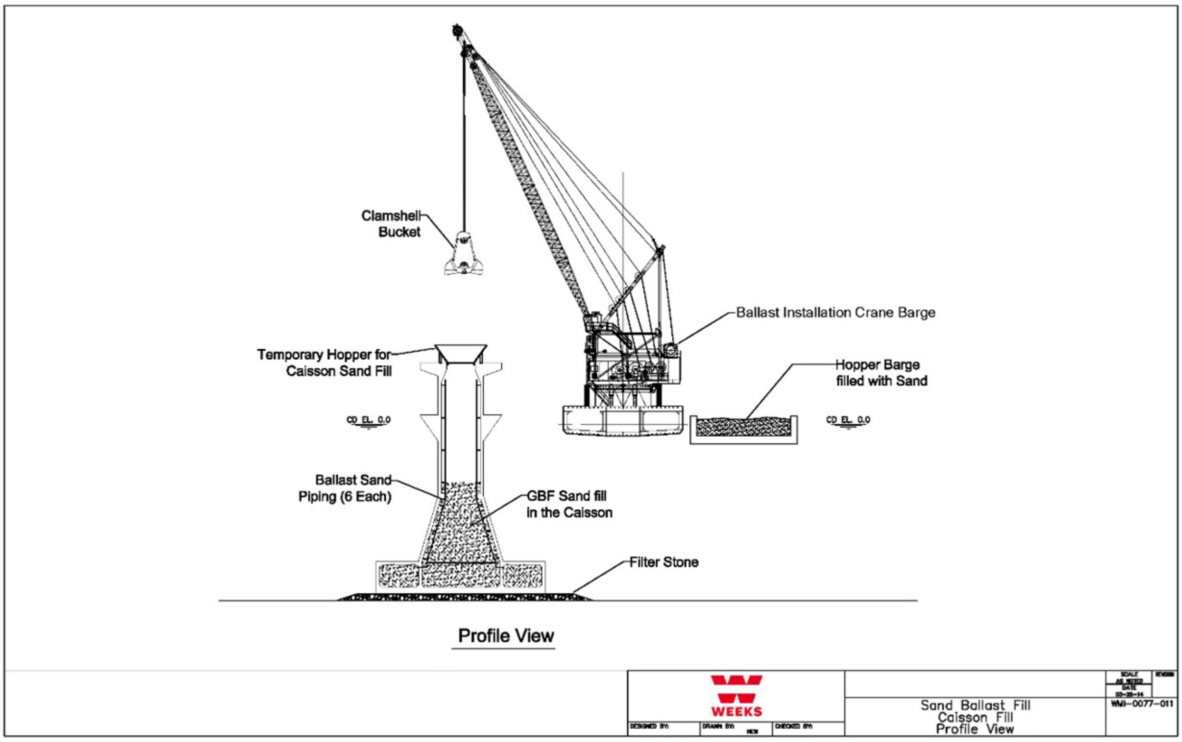


Figure A.41 - Mechanical Sand Ballast – Profile View

Description: Weeks has the means and developed the methods for the installation of gravity base foundations (mechanical sand ballast is also added to the hollows of the foundation once it is set in place).

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022. Drawing WMI-0077-011.

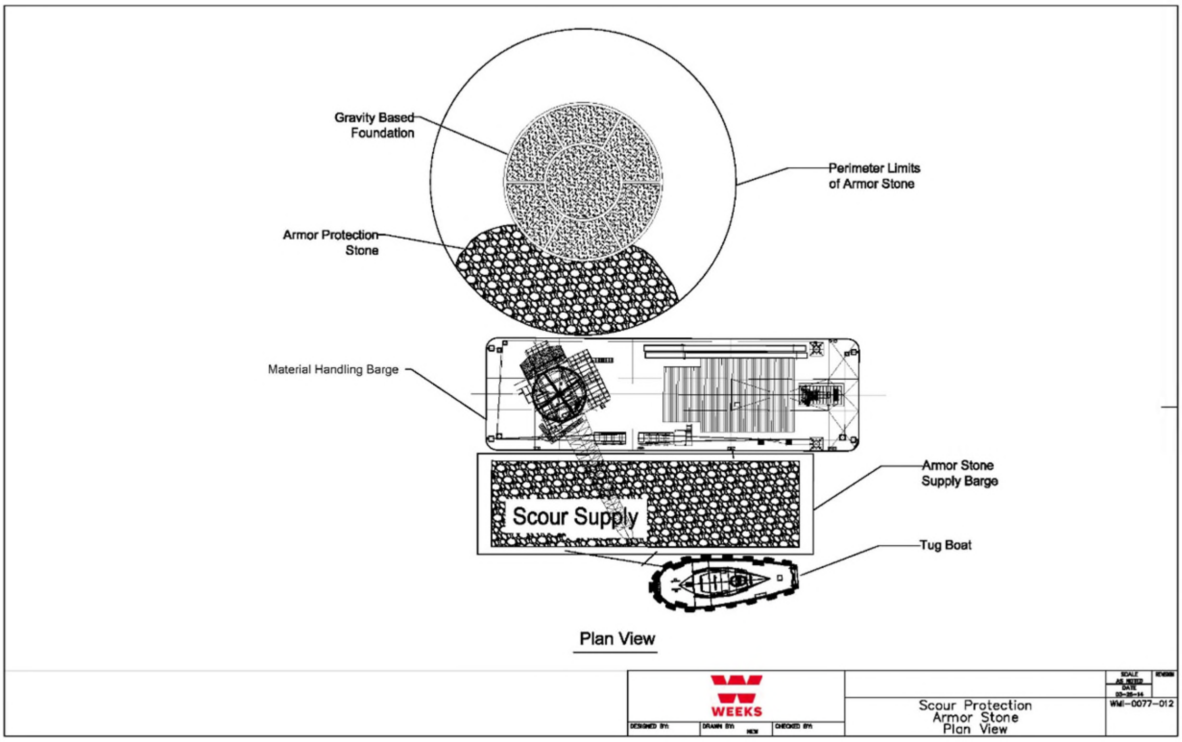


Figure A.42 - Scour Protection – Plan View

Description: Weeks has the means and developed the methods for the installation of gravity base foundations (scour protection is placed around the outer base of the foundation once it is set in place and ballast added).

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022. Drawing WMI-0077-012.

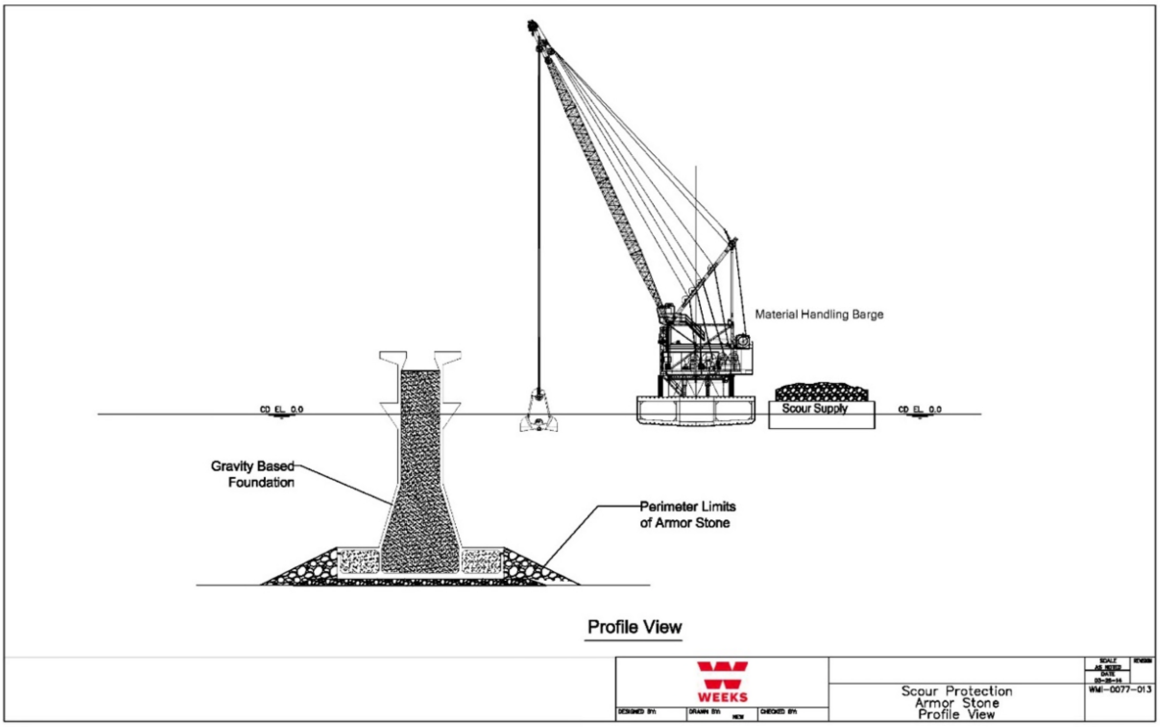


Figure A.43 - Scour Protection – Profile View

Description: Weeks has the means and developed the methods for the installation of gravity base foundations (scour protection is placed around the outer base of the foundation once it is set in place and ballast added).

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022. Drawing WMI-0077-013.

Figure A.44 – R.D. MacDonald Rendering In Tow

Description: Weeks has the means and developed the methods for the installation of the wind turbine generators (vessel option for installation of wind turbine generators with tow tug alongside).

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022.

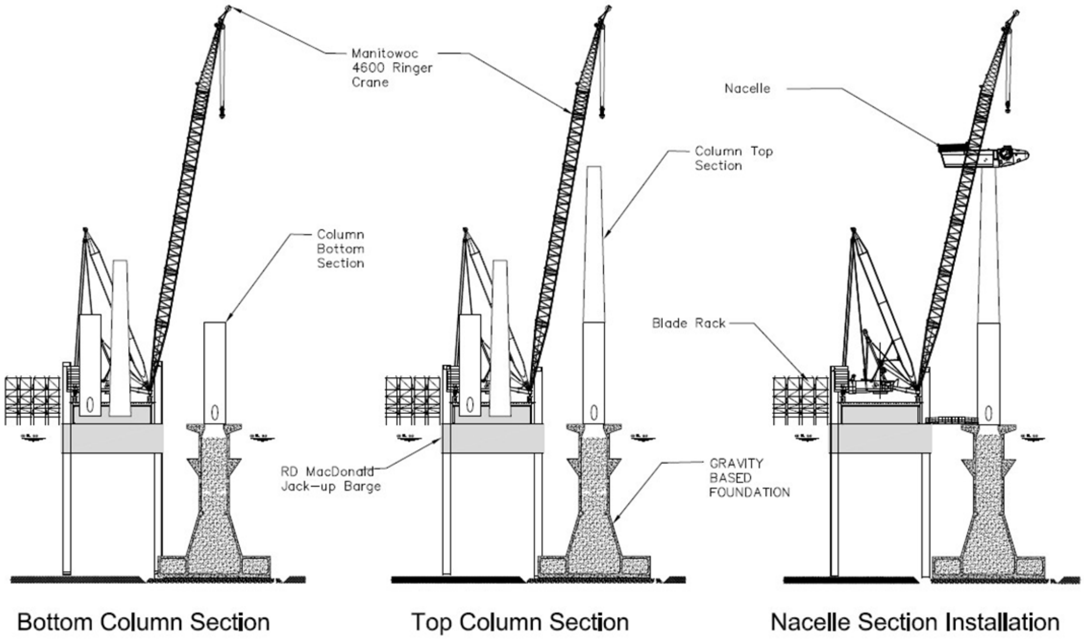


Figure A.45 - Wind Turbine Tower and Nacelle Installation

Description: Weeks has the means and developed the methods for the installation of the wind turbine generators (installation of wind turbine generators shown with vessel in jacked up position installing the wind turbine generator tower and nacelle).

Reference: CER-Wood, *Wolfe Island Shoals Offshore Windfarm Technical Expert Report*, dated February 18, 2022. Figure H-24.

Figure A.46 – R.D. MacDonald Rendering - Blade Installation

Description: Weeks has the means and developed the methods for the installation of the wind turbine generators (installation of wind turbine generators shown with vessel in jacked up position installing wind turbine generator blades).

Reference: CER-Weeks-2, *Wolfe Island Shoals Gravity Base Foundation and Wind Turbine Generator Installation Means and Methods*, dated February 18, 2022.

A.6 Electrical Design and Installation

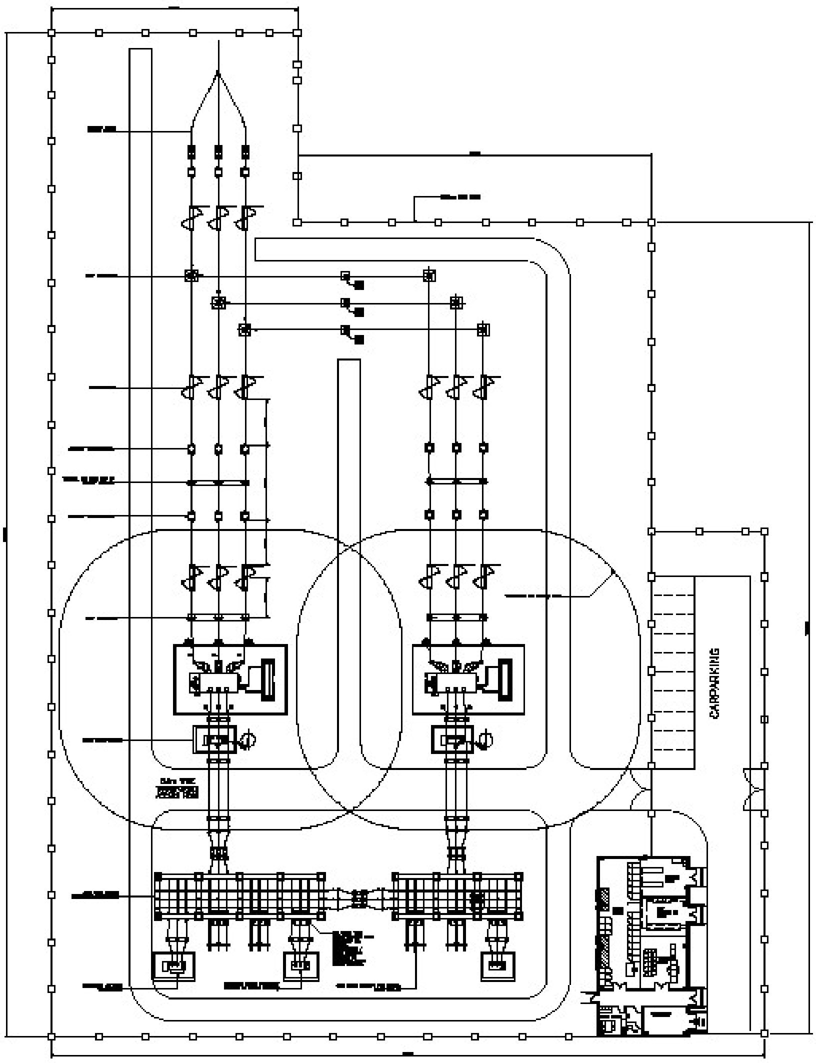


Figure A.47 - Offshore Substation General Arrangement

Description: Design of electrical substation used to consolidate the mid-voltage energy produced by the individual wind turbine generators and convert to a higher voltage which is then exported using an underwater cable to the Lennox Generating Station located on the mainland.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure I-26.

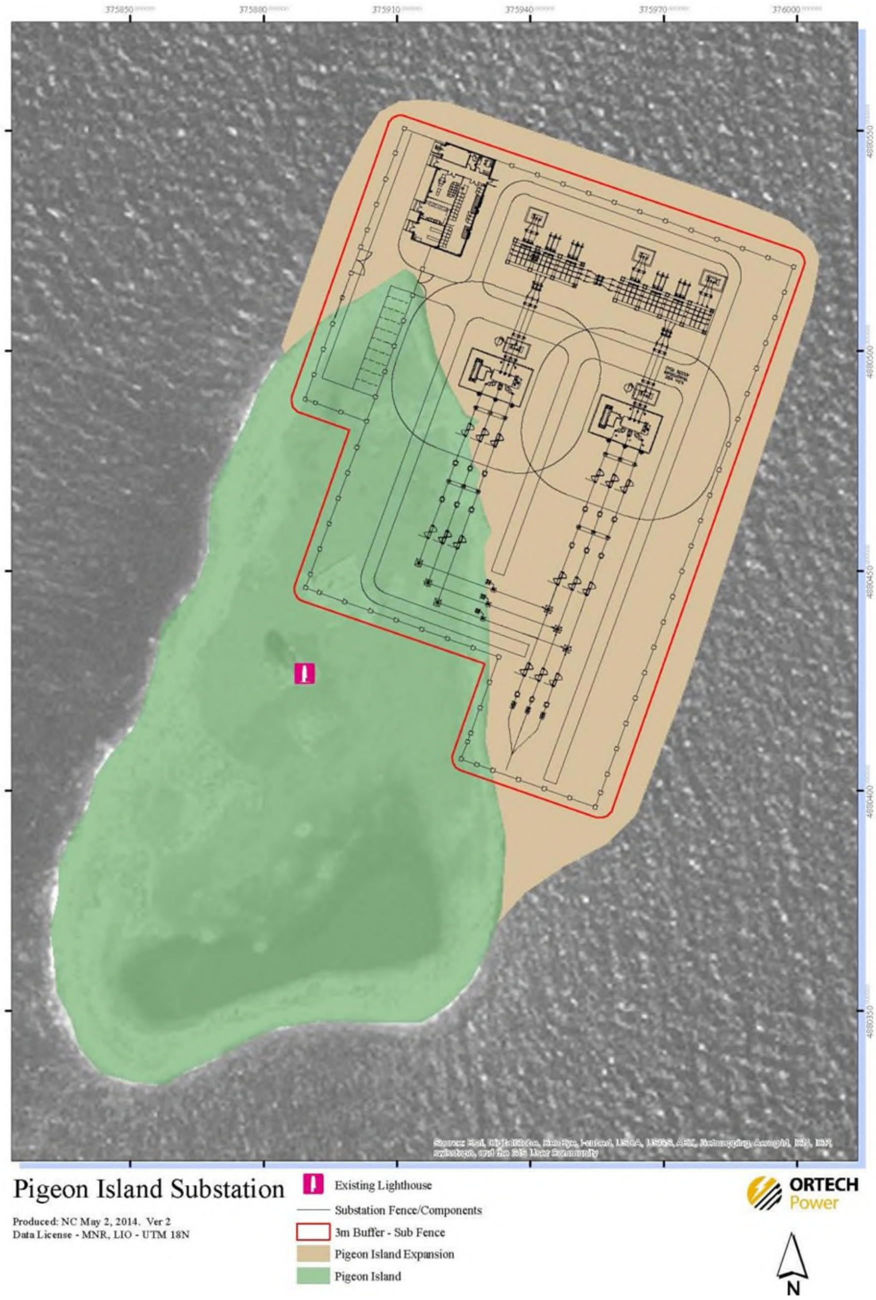


Figure A.48 - Pigeon Island Substation

Description: An electrical design option includes extending the footprint of the existing Pigeon Island to accommodate the electrical substation.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure I-27.

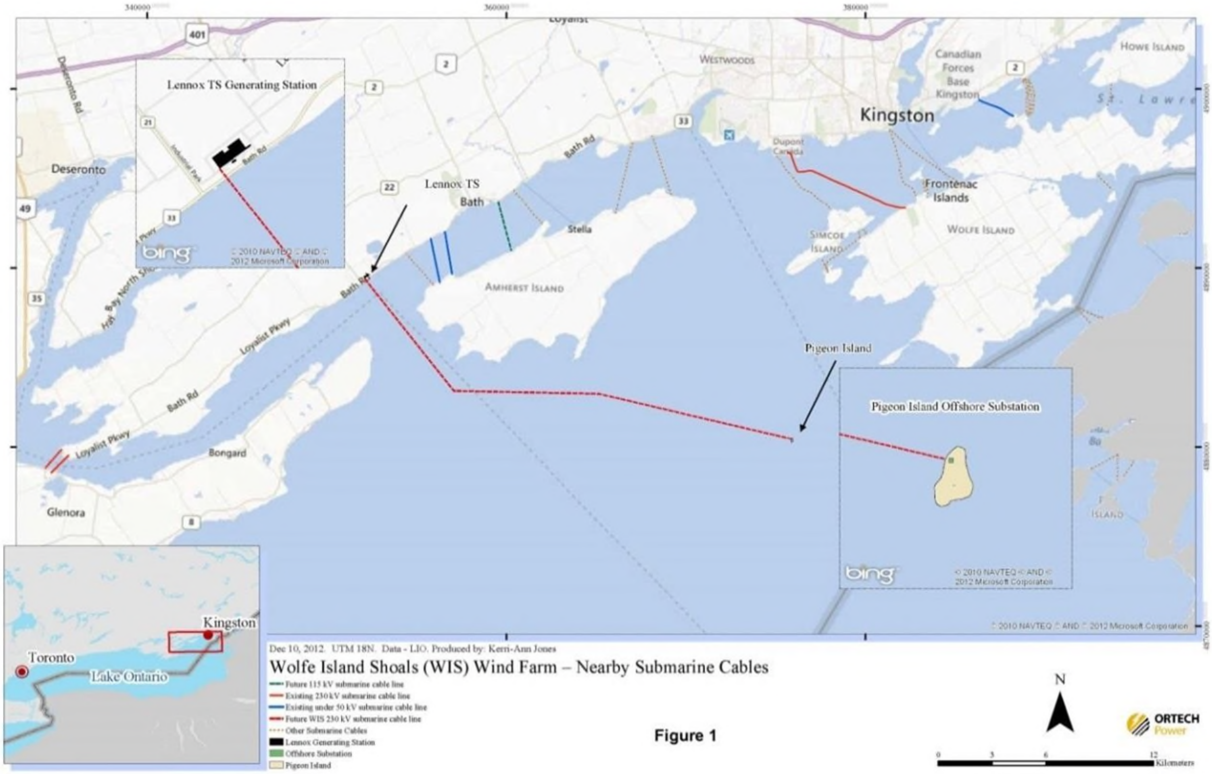


Figure A.49 - Kingston Area Submarine Cable Installations

Description: The design consists of a high voltage export cable laid on the lakebed from the electrical substation on Pigeon Island to the Lennox Generating Station located on mainland. High voltage underwater cables are common practice in the area of the Wolfe Island Shoals Offshore Wind Farm and throughout Ontario.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure I-28.

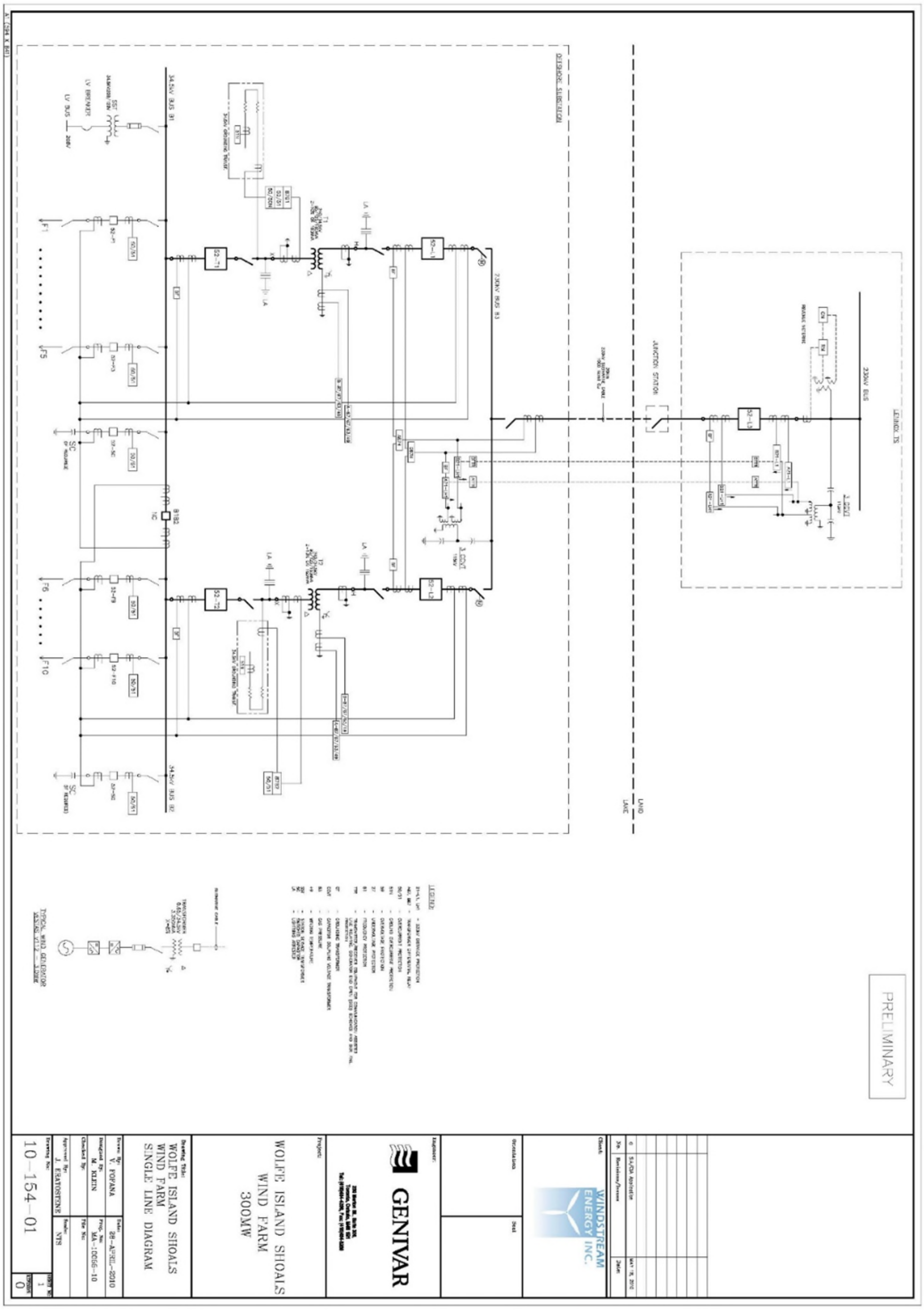


Figure A.50 - Single Line Diagram for Wolfe Island Shoals

Description: Single line drawing illustrating the electrical configuration of an early (2010) design of the Wolfe Island Shoals Offshore Wind Farm.

Reference: C-0274, Genivar drawing, *Wolfe Island Shoals Wind Farm Single Line Drawing*, dated April 28, 2010.

Figure A.51 - Approved Connection between Wolfe Island Shoals (offshore) substation and Lennox (onshore) Generating Station

Description: The Customer Impact Assessment (CIA) study completed by the government agency (HONI) concluded that: ***The new plant will provide up to 300MW of power in the Lennox area and has no negative effect on the voltage in the area***.

Reference: C-0381, Hydro One Networks Inc. report, *Customer Impact Assessment Wolfe Island Shoals GS 300 MW Wind Turbine Generator Generation Connection*, dated November 8, 2010. Map 1. Geographic location of Wolfe Island Shoal connection to Hydro One's network.

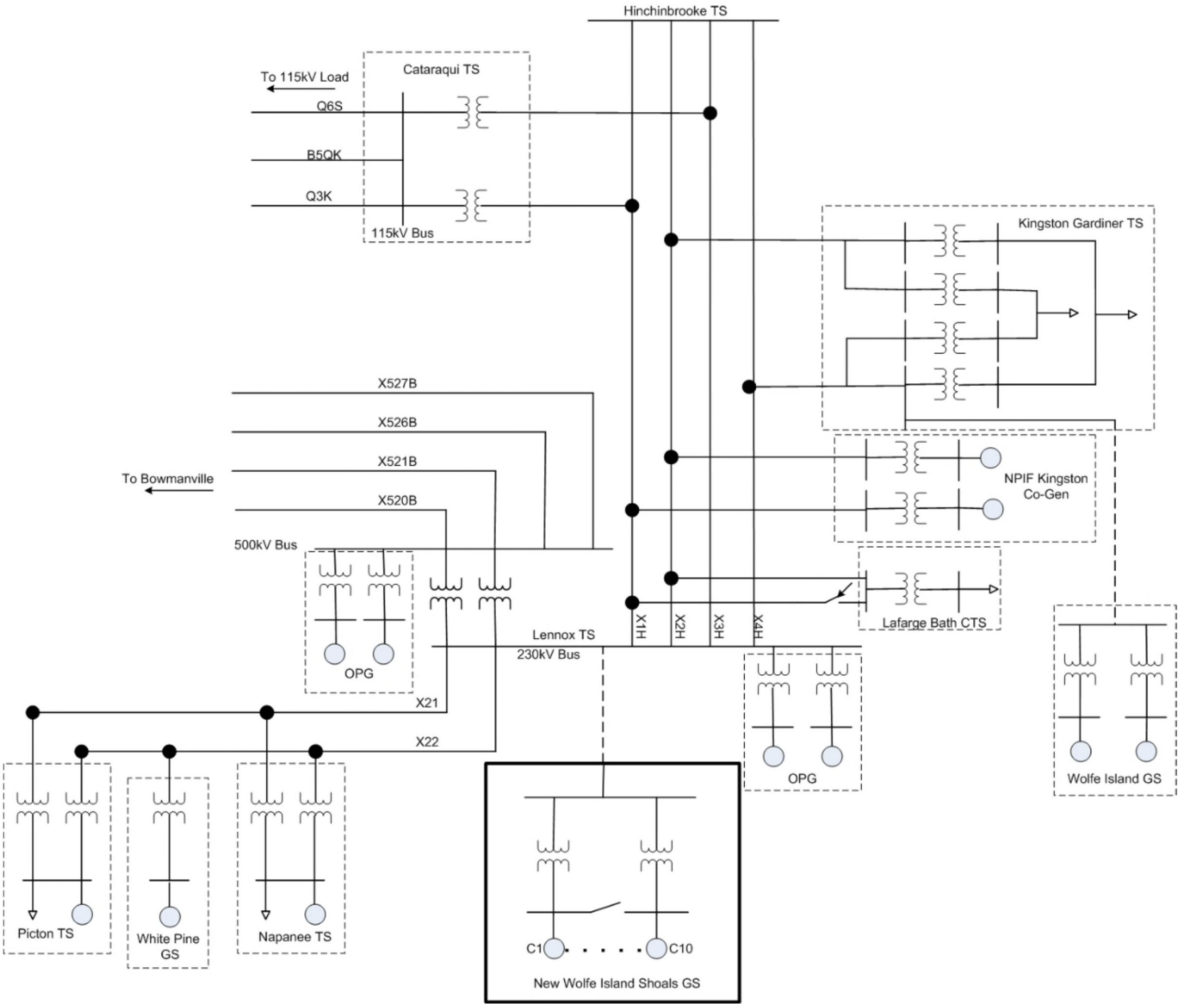


Figure A.52 - Hydro One Transmission System and Wolfe Island Shoals Electrical Connection in the Lennox Area

Description: The Customer Impact Assessment (CIA) study completed by the government agency (HONI) concluded that: ***The new plant will provide up to 300MW of power in the Lennox area and has no negative effect on the voltage in the area***.

Reference: C-0381, Hydro One Networks Inc. report, *Customer Impact Assessment Wolfe Island Shoals GS 300 MW Wind Turbine Generator Generation Connection*, dated November 8, 2010. Figure 1: The Lennox Area and the proposed Windstream Wolfe Island Shoals GS.

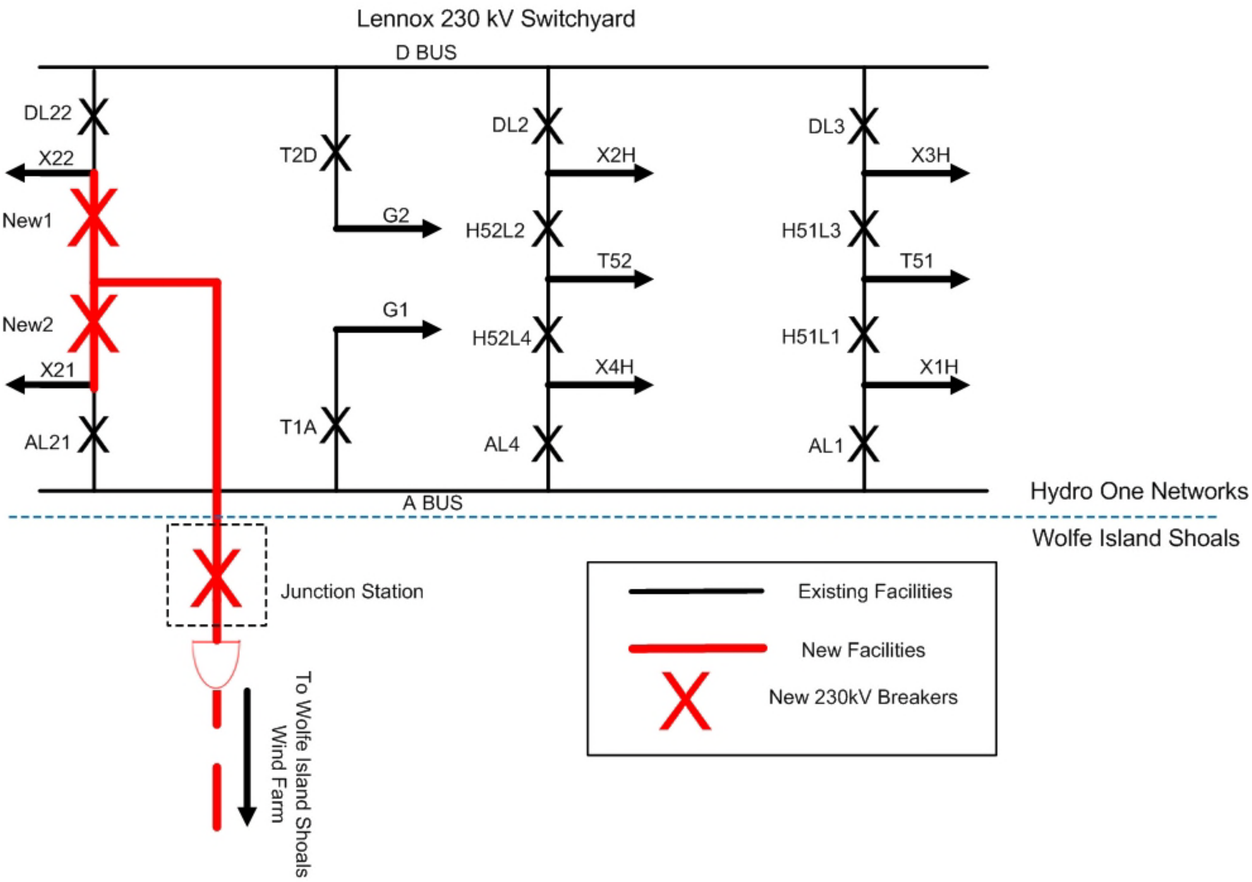


Figure A.53 - Wolfe Island Shoals Point of Connection in the Lennox 230kV Switchyard

Description: The Customer Impact Assessment (CIA) study completed by the government agency (HONI) concluded that: ***The new plant will provide up to 300MW of power in the Lennox area and has no negative effect on the voltage in the area***.

Reference: C-0381, Hydro One Networks Inc. report, *Customer Impact Assessment Wolfe Island Shoals GS 300 MW Wind Turbine Generator Generation Connection*, dated November 8, 2010. Figure 2: Connection of Wolfe Island Shoals to Lennox 230kV Bus.

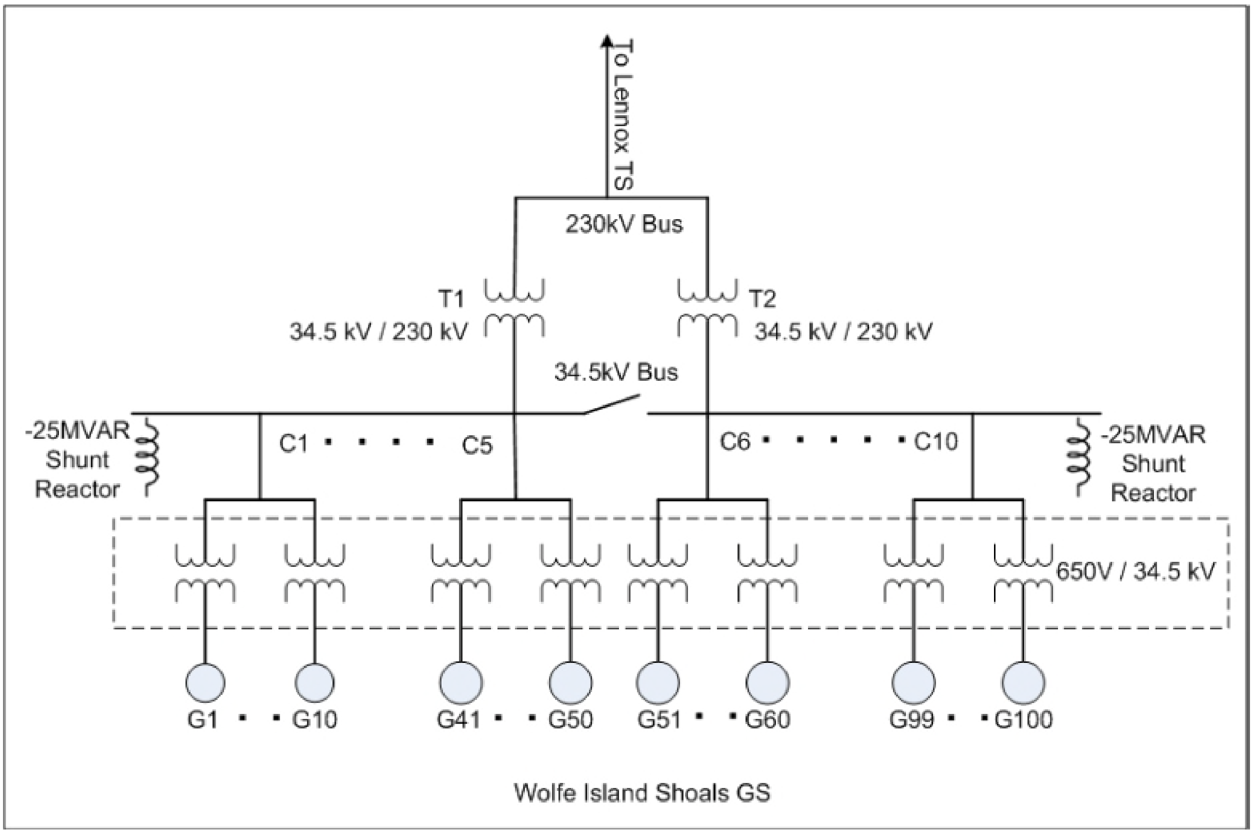


Figure A.54 - Single Line Diagram for Wolfe Island Shoals

Description: The Customer Impact Assessment (CIA) study completed by the government agency (HONI) concluded that: ***The new plant will provide up to 300MW of power in the Lennox area and has no negative effect on the voltage in the area***.

Reference: C-0381, Hydro One Networks Inc. report, *Customer Impact Assessment Wolfe Island Shoals GS 300 MW Wind Turbine Generator Generation Connection*, dated November 8, 2010. Figure 3.

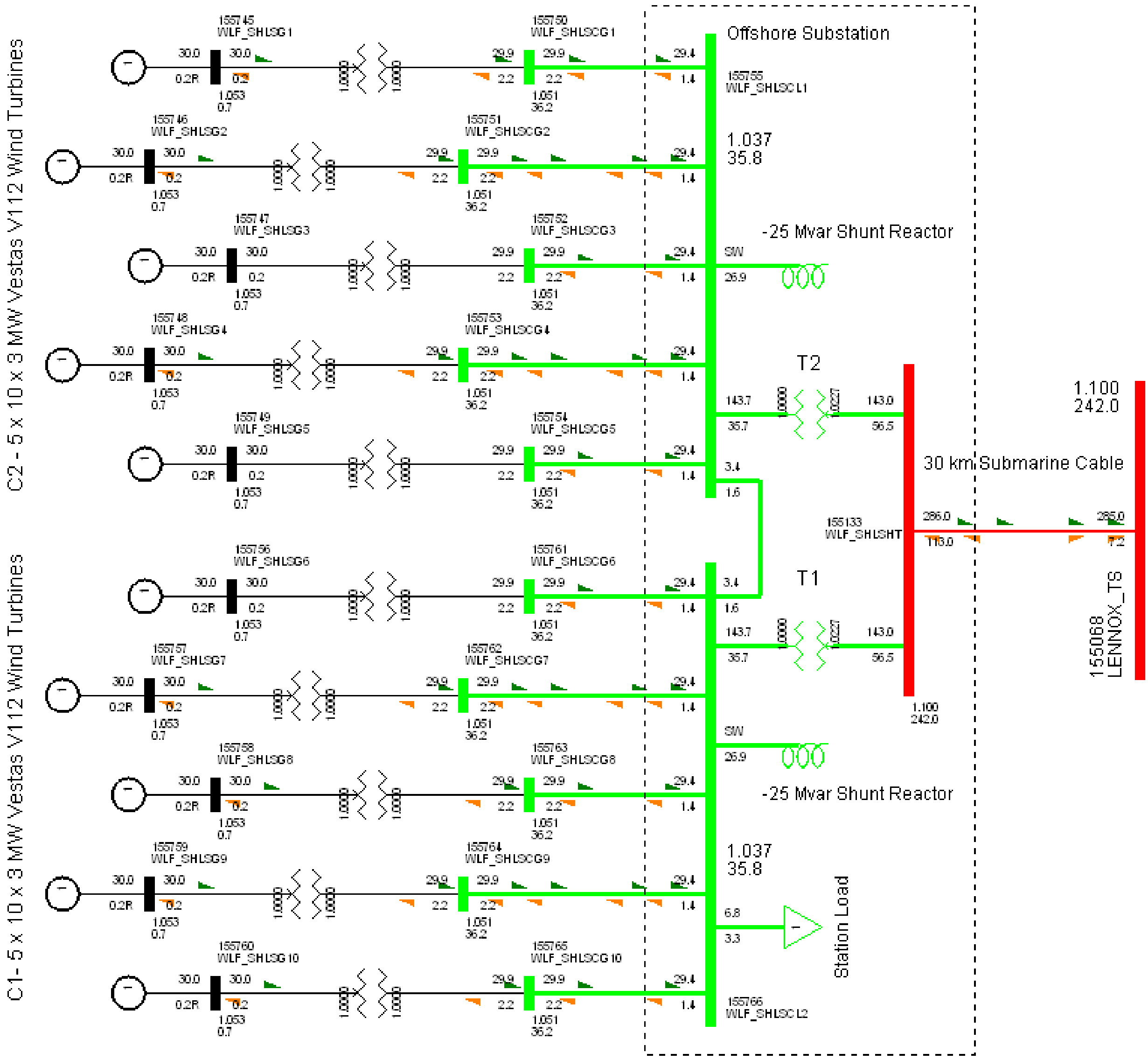


Figure A.55 - Connection Arrangement for Wolfe Island Shoals

Description: The System Impact Assessment (SIA) Report completed by the government agency (IESO) provides conditional approval for the Wolfe Island Shoals Offshore Wind Farm (i.e., the Project). Some of the key conclusions of the SIA include:

- ***The proposed connection arrangement and equipment for the Project are acceptable to the IESO***
- ***The proposed Project will not cause new violations of existing circuit breaker interrupting capabilities on the IESO-controlled grid***

Reference: C-0381, Independent Electricity System Operator (IESO) report, *System Impact Assessment Report Wolfe Island Shoals Wind Generation Station (Connection Assessment and Approvals Process)*, dated November 8, 2010. Figure 1.

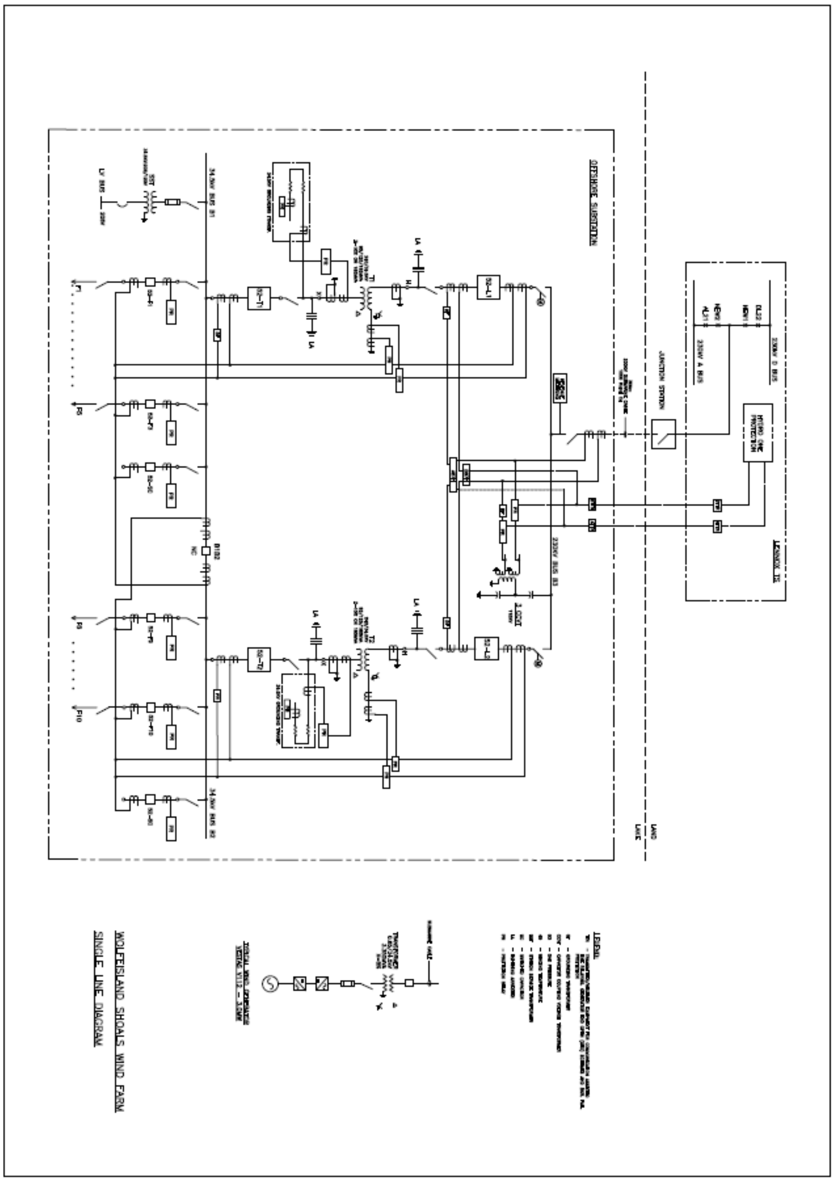


Figure A.56 - Single Line Diagram for Wolfe Island Shoals

Description: The System Impact Assessment (SIA) report completed by the government agency (IESO) provides conditional approval for the Wolfe Island Shoals Offshore Wind Farm (i.e., the Project). Some of the key conclusions of the SIA include:

- ***The proposed connection arrangement and equipment for the Project are acceptable to the IESO***
- ***The proposed Project will not cause new violations of existing circuit breaker interrupting capabilities on the IESO-controlled grid***

Reference: C-0381, Independent Electricity System Operator (IESO) report, *System Impact Assessment Report Wolfe Island Shoals Wind Generation Station (Connection Assessment and Approvals Process)*, dated November 8, 2010. Appendix A.

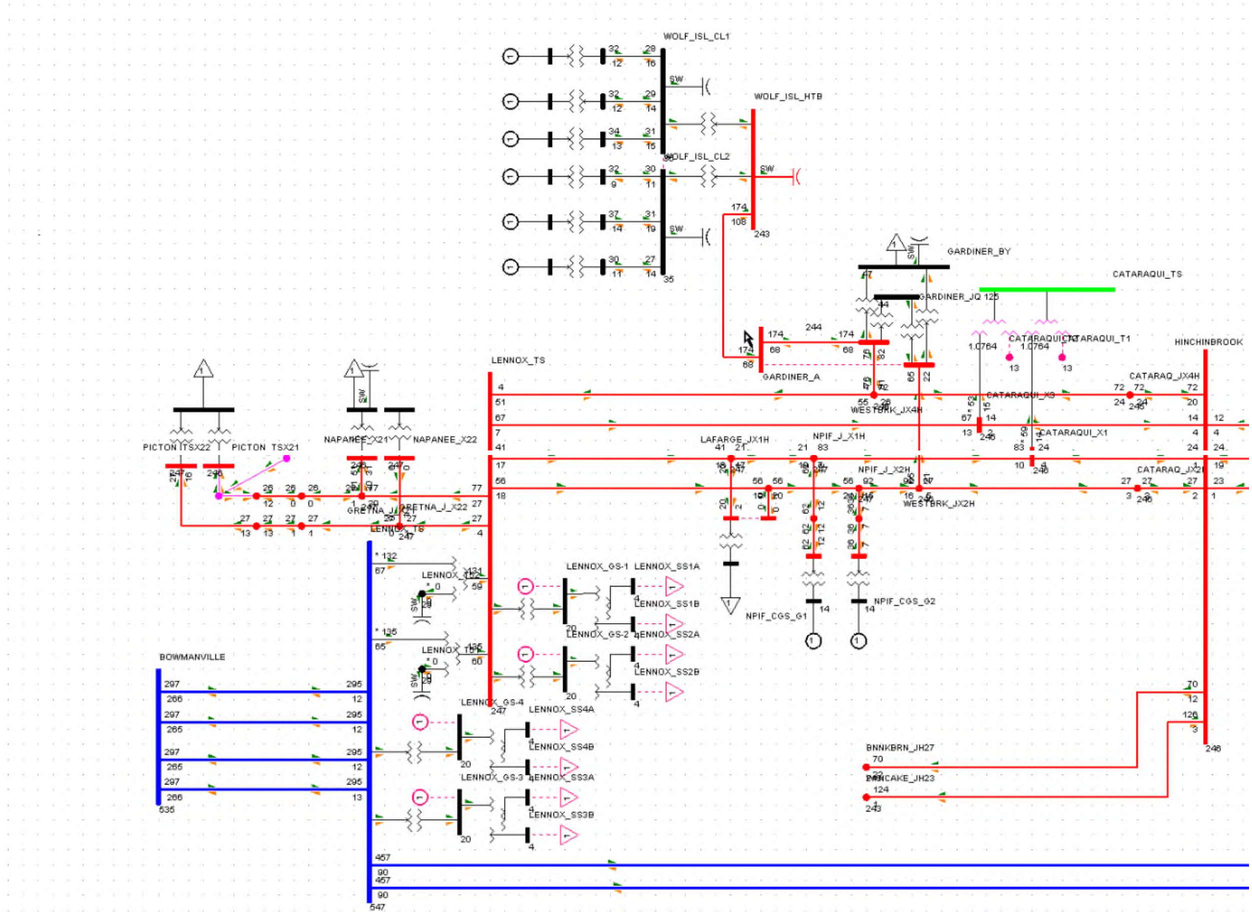


Figure A.57 - Eastern (Ontario) Transmission system without Wolfe Island Shoals

Description: The System Impact Assessment (SIA) Report completed by the government agency (IESO) provides conditional approval for the Wolfe Island Shoals Offshore Wind Farm (i.e., the Project). Some of the key conclusions of the SIA include:

- ***The proposed connection arrangement and equipment for the Project are acceptable to the IESO***
- ***The proposed Project will not cause new violations of existing circuit breaker interrupting capabilities on the IESO-controlled grid***

Reference: C-0381, Independent Electricity System Operator (IESO) report, *System Impact Assessment Report Wolfe Island Shoals Wind Generation Station (Connection Assessment and Approvals Process)*, dated November 8, 2010. Figure 25.

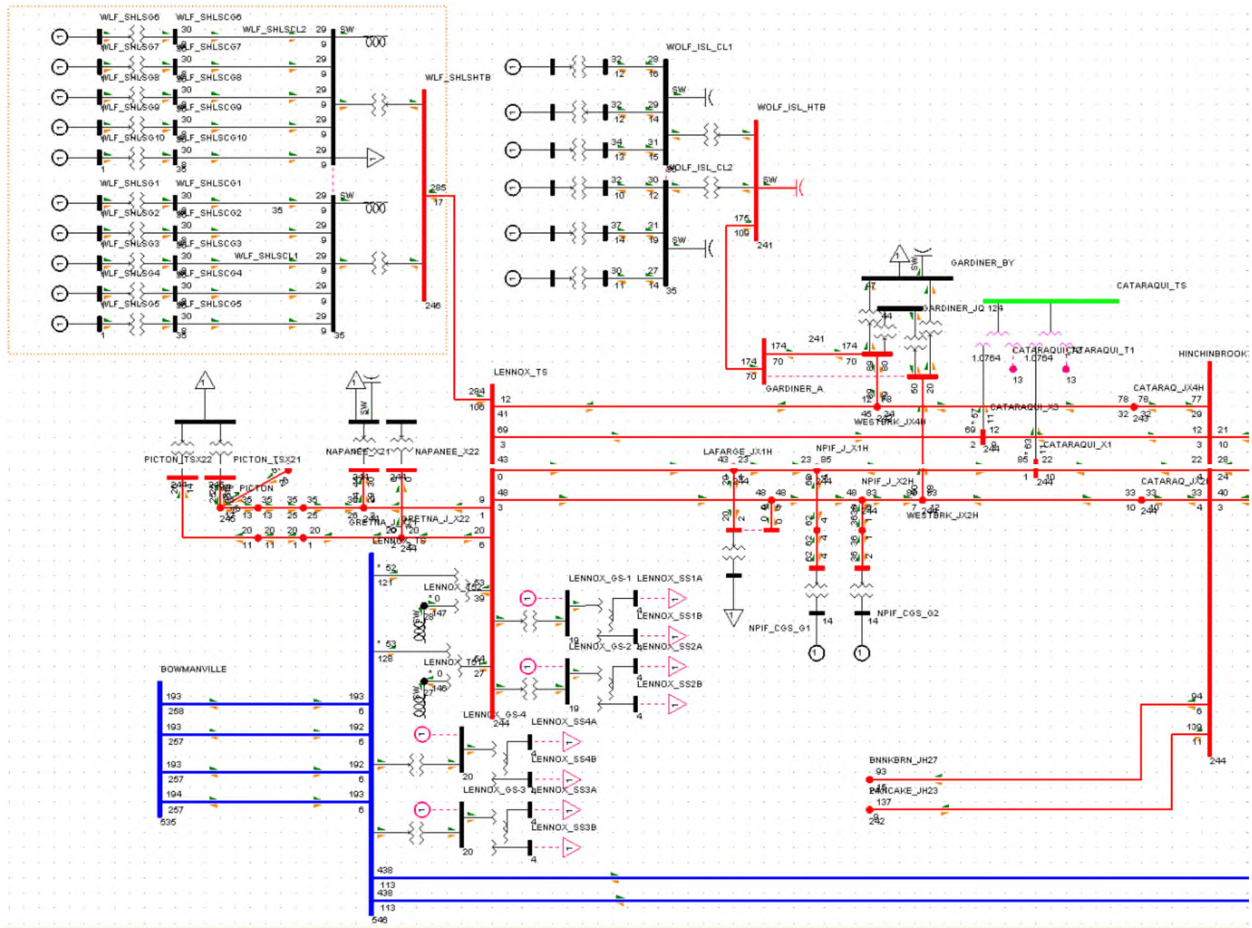


Figure A.58 - Eastern (Ontario) Transmission System with Wolfe Island Shoals

Description: The System Impact Assessment (SIA) Report completed by the government agency (IESO) provides conditional approval for the Wolfe Island Shoals Offshore Wind Farm (i.e., the Project). Some of the key conclusions of the SIA include:

- ***The proposed connection arrangement and equipment for the Project are acceptable to the IESO***
- ***The proposed Project will not cause new violations of existing circuit breaker interrupting capabilities on the IESO-controlled grid***

Reference: C-0381, Independent Electricity System Operator (IESO) report, *System Impact Assessment Report Wolfe Island Shoals Wind Generation Station (Connection Assessment and Approvals Process)*, dated November 8, 2010. Figure 26.

Figure A.59 - Cable Installation Barge Shore Landing

Description: Example of an underwater cable installation vessel.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure I-30 (Courtesy of ITB Subsea Equipment).

A.7 Logistics

Figure A.60 - Pier 26 Hamilton Ontario

Description: Numerous port facilities are available throughout Lake Ontario and the St Lawrence Seaway system to support logistic activities.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure J-33.

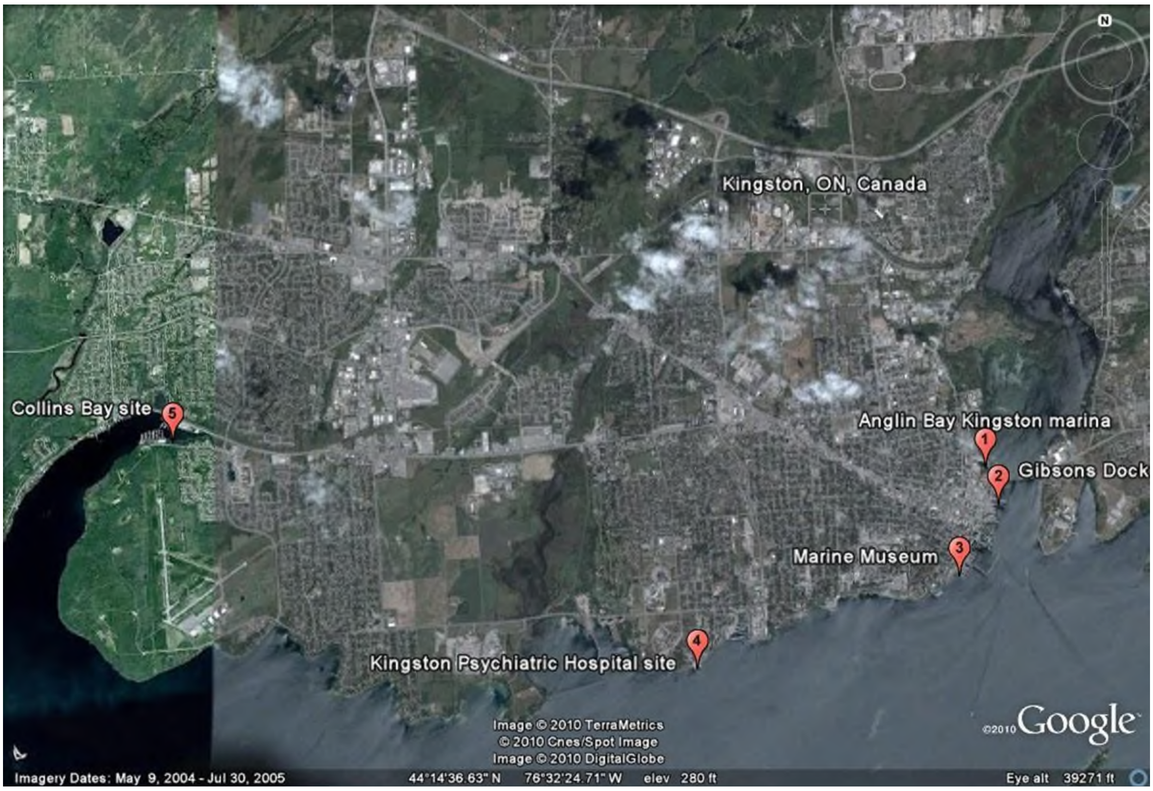


Figure A.61 - Potential Locations for Project Operation and Control Centre

Description: Numerous locations have been identified for an operation and control centre used to support operation and maintenance activities.

Reference: CER-Wood, *Wolfe Island Shoals Offshore Wind Farm Technical Expert Report*, dated February 18, 2022. Figure J-34.

A.8 Environmental and Other Supporting Studies

Location	Project	Size MW	WTG Details	COD	Phase
Lake IJssel (NL)	Windpark Lely	2	4x NedWind 500	1994	Decommissioned
Lake IJssel (NL)	Irene Vorrink	16.8	28x NTK 600	1997	Operational
Lake IJssel (NL)	Westermeerwind	144	48x SGRE 3.0-108	2016	Operational
Lake IJssel (NL)	Windpark Fryslân	383	89x SGRE 4.3-130	2021	Construction
Lake IJssel (NL)	Windplan Blauw	TBD	24x max tip 213 m	TBD	Development
Vänern (SE)	Vindpark Vänern	30	10x WinWinD 3	2010	Operational
Vänern (SE)	Rewind Vänern	100	TBD	2024	Development
Lake Erie (US)	Icebreaker Wind	20.7	6x V126-3.45	2023	Development

Figure A.62 - Overview of Freshwater Wind Projects in the World

Description: Multiple offshore wind farms are either in development or operational in freshwater worldwide.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Table 3.1 (Wagner and Slooff, 2021).

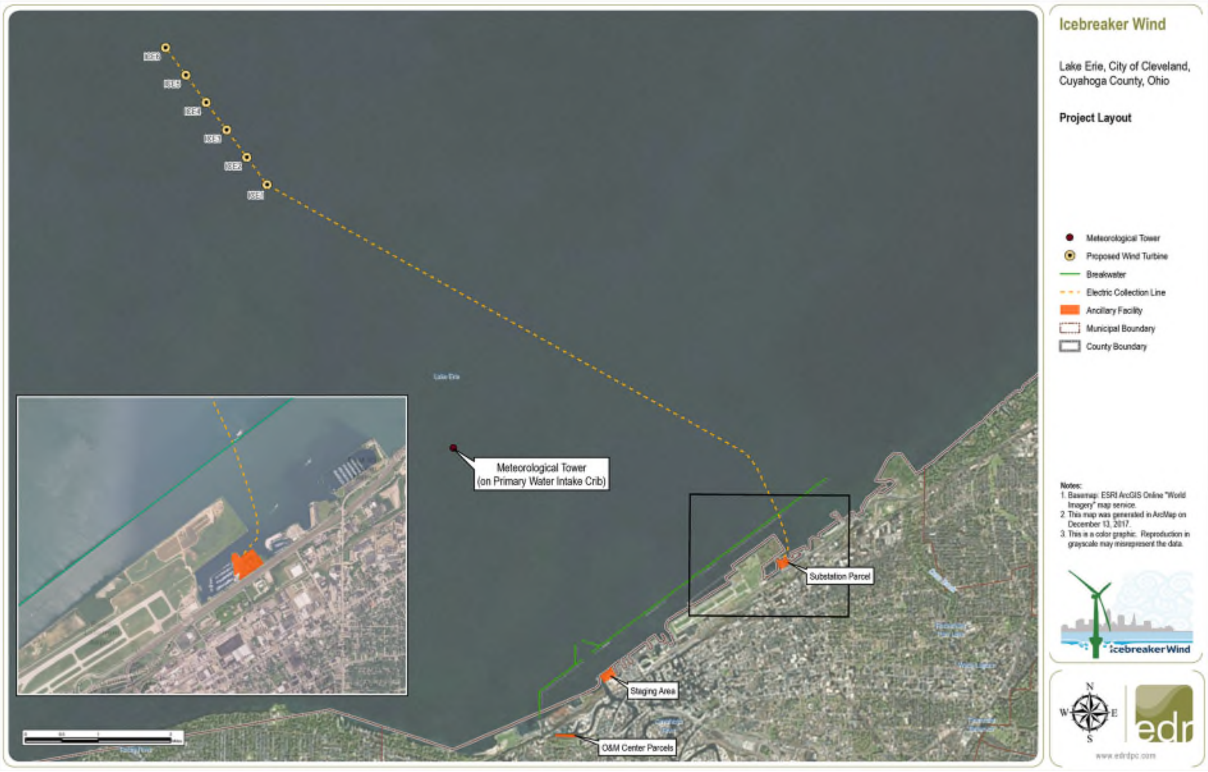


Figure A.63 - Approved LEEDCo Icebreaker offshore wind project plan, Lake Erie

Description: The Icebreaker offshore wind farm is under development in Lake Erie.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 3.5.

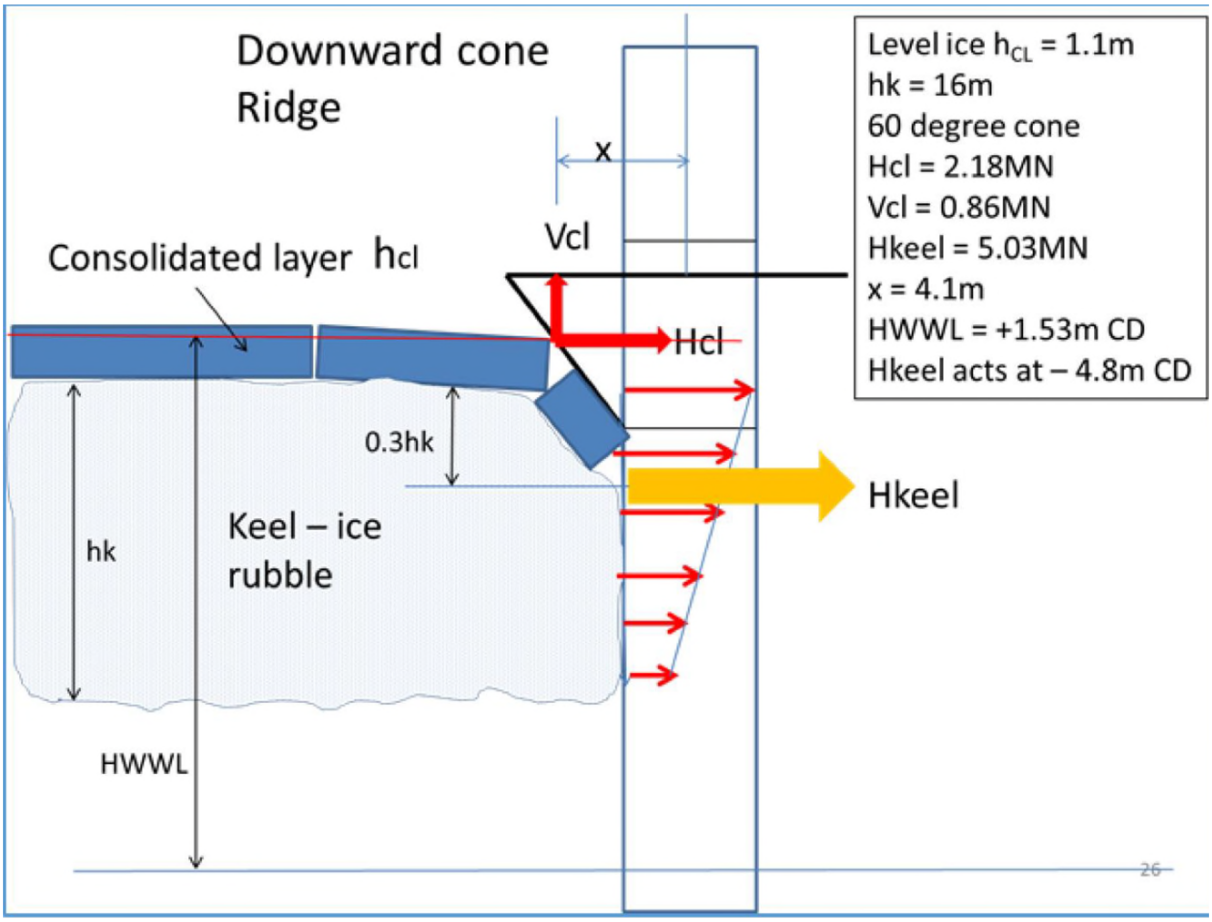


Figure A.64 - LEEDCo Icebreaker Ice Loading on Turbine Foundation, Lake Erie

Description: There is a deep understanding of the impacts of ice on structures including offshore wind farm foundations. Ice impacts were evaluated in the design of the gravity base foundations selected for the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 3.7 (Wagner and Slooff, 2021).

Figure A.65 - Confederation Bridge, Northumberland Strait, New Brunswick-PEI, Canada Showing Ice Action on Piers

Description: There is a deep understanding of the impacts of ice on structures including offshore wind farm foundations. Ice impacts were evaluated in the design of the gravity base foundations selected for the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 3.9.

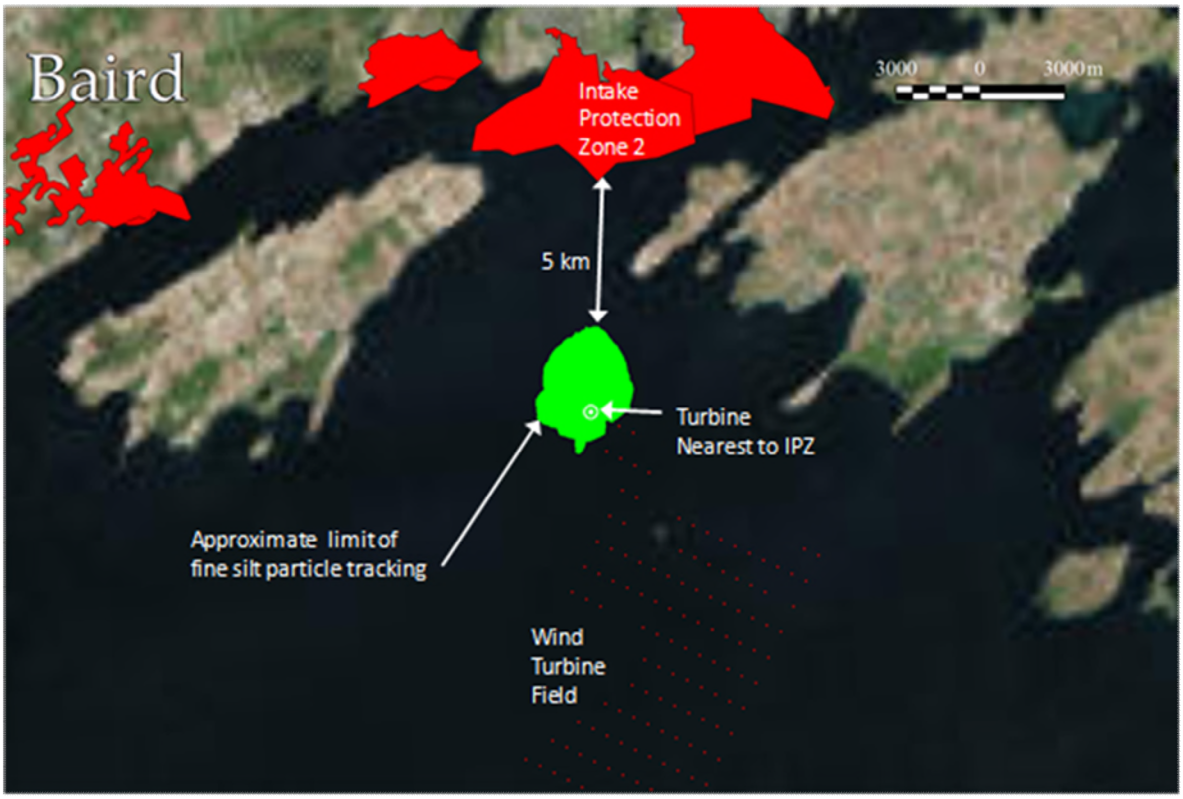


Figure A.66 - Limit of Movement of Disturbed Sediment Modelled by Particle Tracking and Proximity to Drinking Water Intake Protection Zone (IPZ)

Description: Study confirms that any sediment disturbed during construction activities is far from the nearest drinking water protection zones with no predicted impact on drinking water quality.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 4.1 (Baird, 2015).

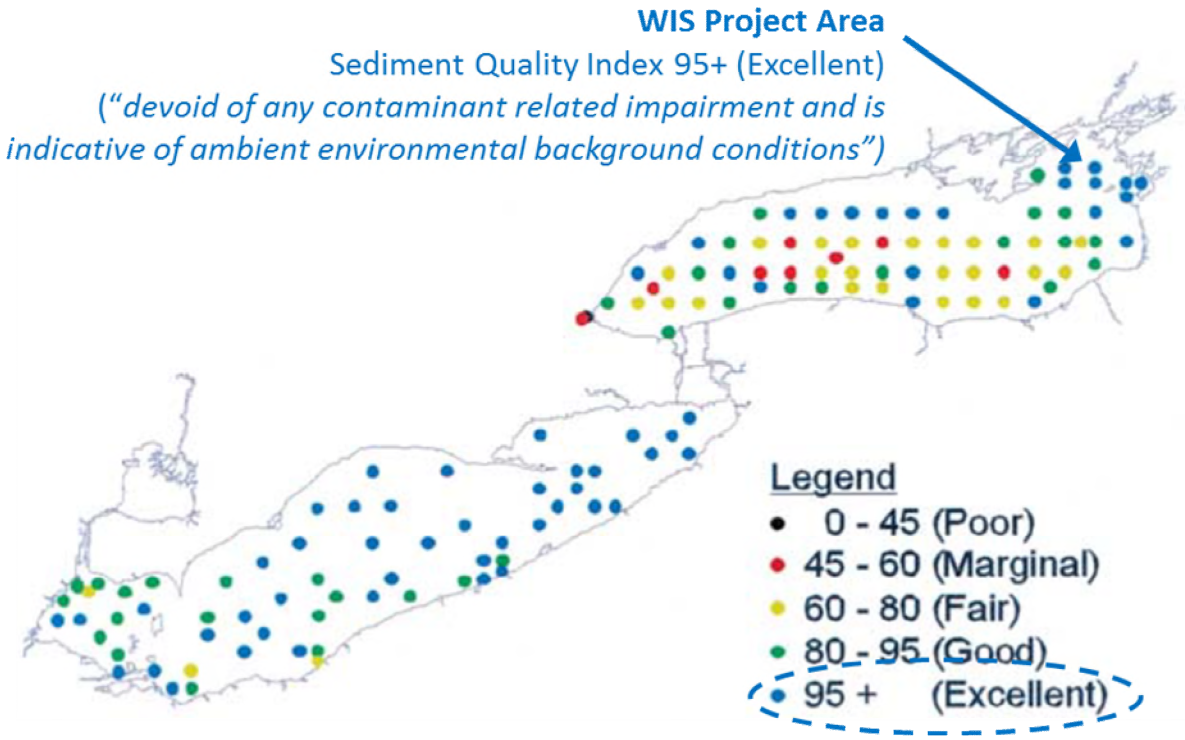


Figure A.67 - Distribution of Individual Lake Basin Sediment Quality Index Values for Lake Erie and Lake Ontario

Description: Study confirms that sediment in the area is of excellent quality, 95+ = Excellent. This Combined with the fact that any disturbed sediment during construction activities is far from the nearest drinking water protection zones with no predicted impact on drinking water quality.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 4.2 (Marvin, C., Grapentine, L, and Painter, S., 2004).

Figure A.68 - Marine Construction of In-lake Risers for Ashbridge's Bay Treatment Plant Outfall Project, Lake Ontario

Description: Marine construction is common practice in Lake Ontario.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 3.12.

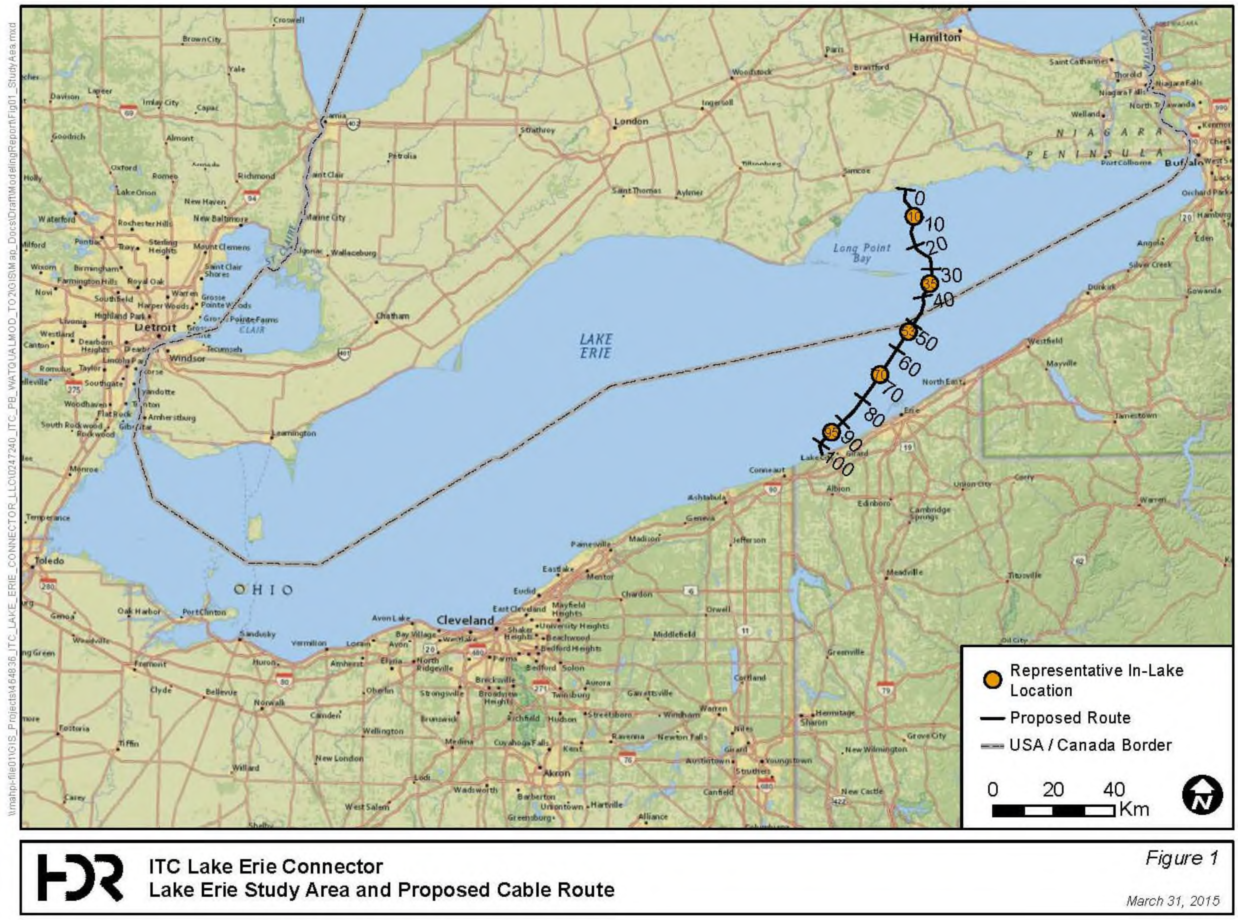


Figure A.69 - ITC Connector Project, Lake Erie (HDR, 2015) - Cross-lake Electricity Transmission Cable Installed by Ploughing a Cable Trench through the Existing Lakebed Sediments

Description: Marine construction is common practice in Lake Ontario.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 4.4.

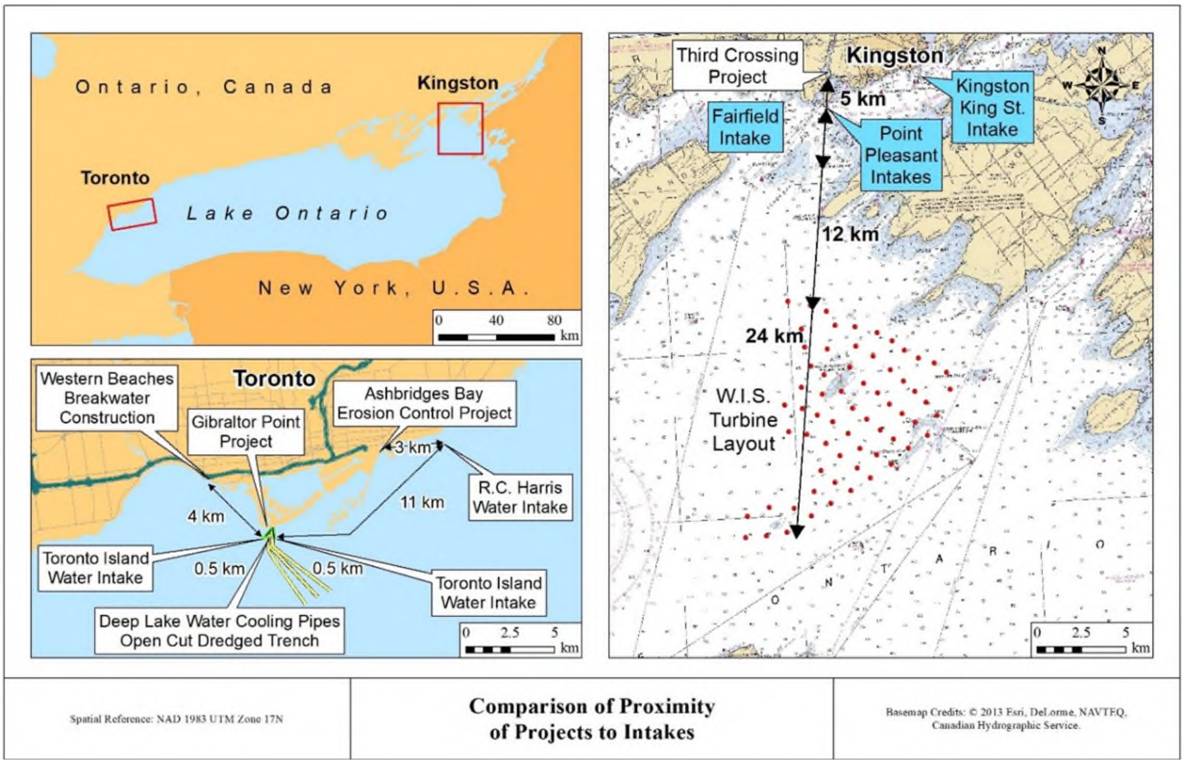


Figure A.70 - Comparison of Proximity of the WIS Project and Various other In-water Lake Ontario Projects to Drinking Water Intakes

Description: Marine construction is common practice in Lake Ontario including many much closer to drinking water intakes than the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 4.7.

Figure A.71 - Third Crossing Construction Using a Temporary Causeway Across the Cataraqui River, Involves Dumping Fill Material in Provincially Significant Wetland, 5km Directly Upstream of Water Intake

Description: Marine construction has been approved and has taken place in the eastern end of Lake Ontario much closer to drinking water intakes than the Wolfe Island Shoals Offshore Wind Farm

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 4.8.

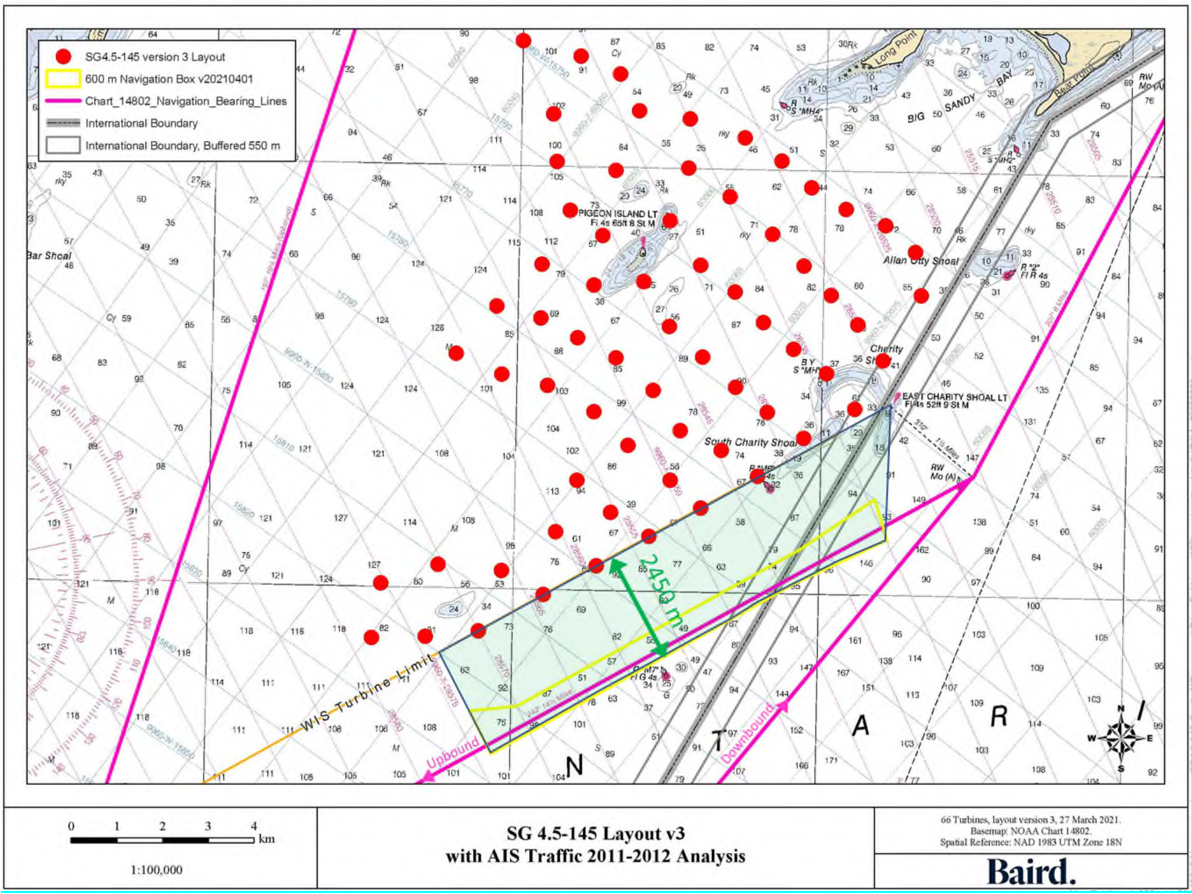


Figure A.72 - 2450m Wide Navigation Allowance for One-way Vessel Traffic Adjacent to WIS Project, Including 600m Wide Upbound Channel and Additional 1850m Separation Allowance

Description: Study confirms the Wolfe Island Shoals Offshore Wind Farm can be designed with sufficient shipping navigation allowance.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 5.1.

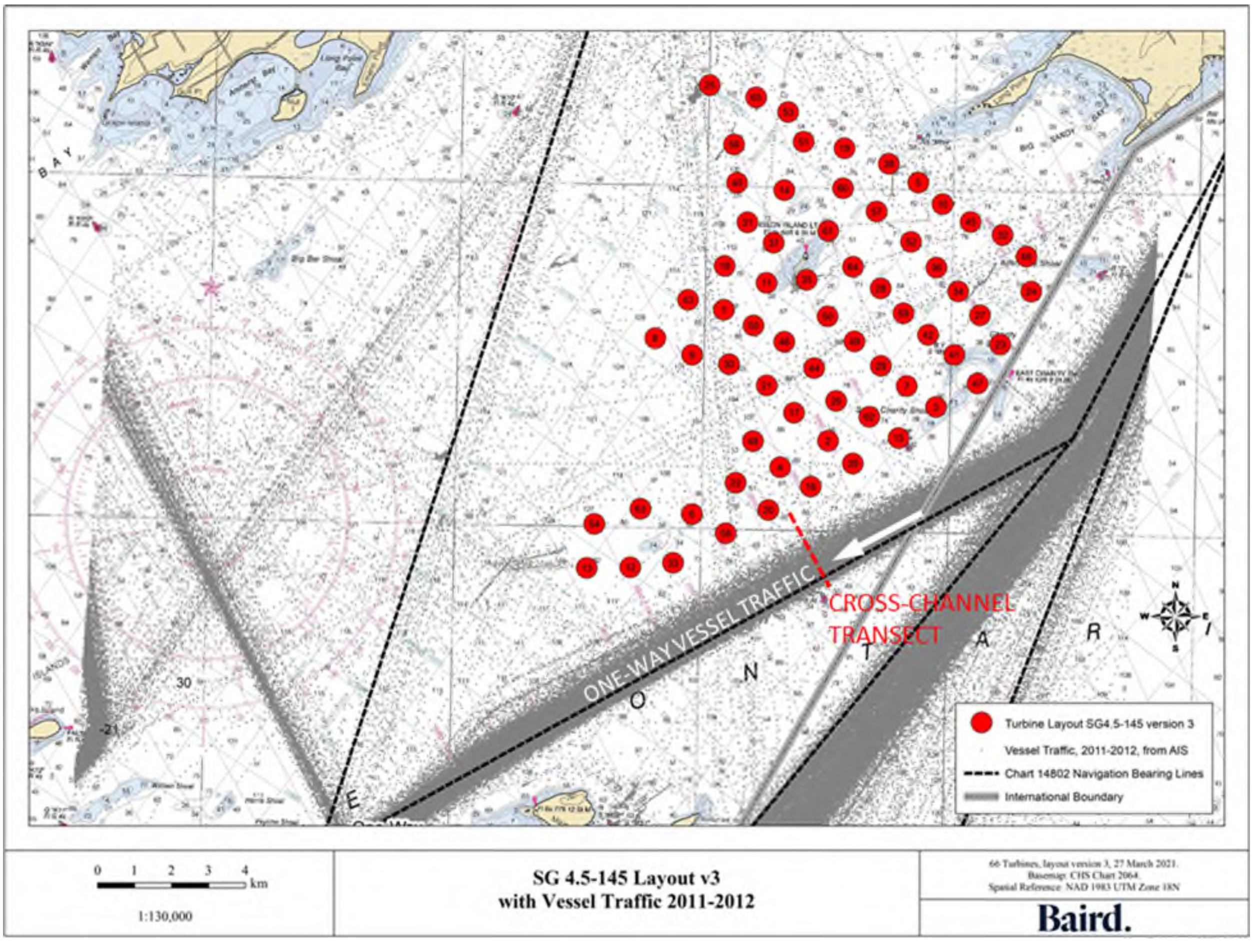


Figure A.73 - AIS Vessel Traffic Tracking (2011-2012) at WIS Project Area

Description: Study confirms the Wolfe Island Shoals Offshore Wind Farm can be designed with sufficient buffer from routes commonly used as shown by actual vessel traffic data.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 5.3.

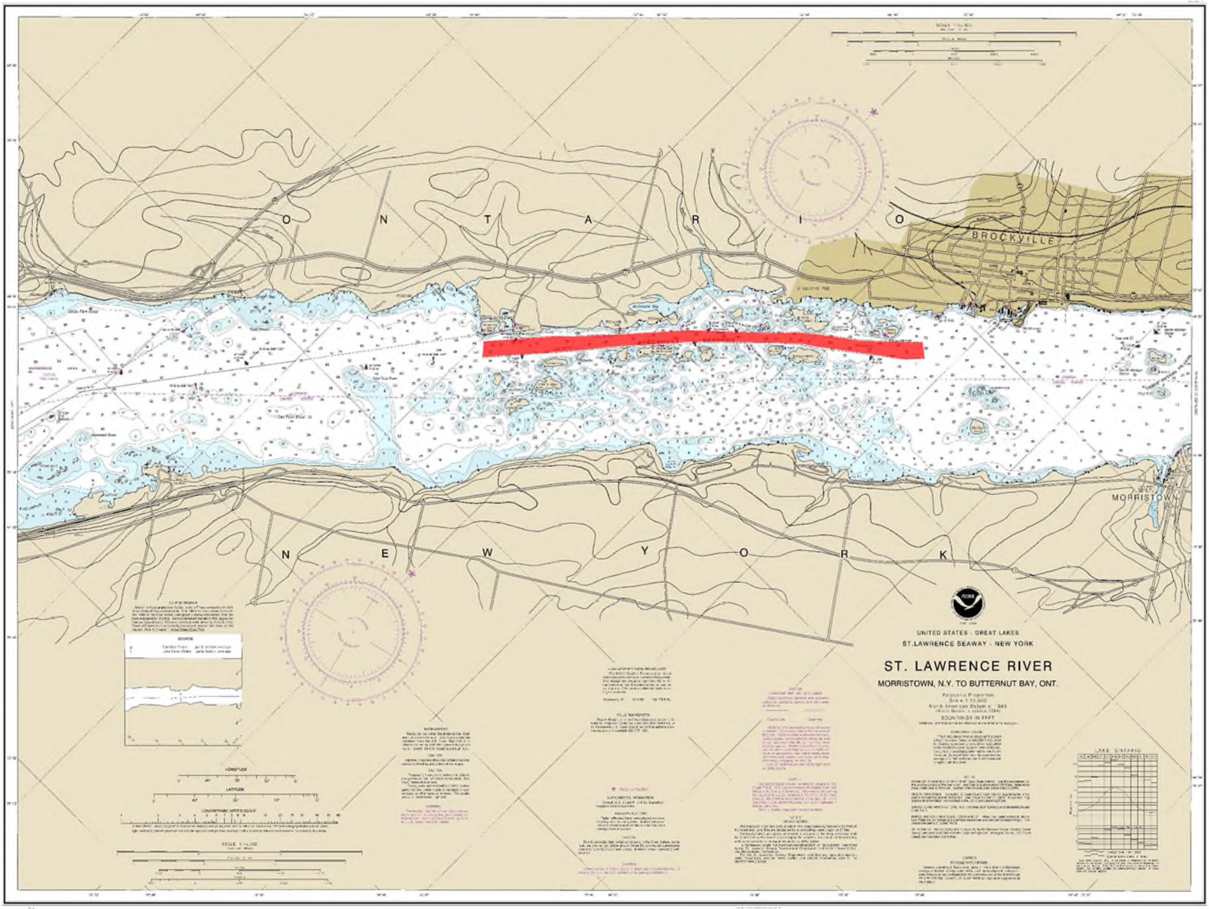


Figure A.74 - Brockville Narrows (from NOAA Chart 14770) Consists of 140m Wide Channel (Red Shading) for Two-way Vessel Traffic

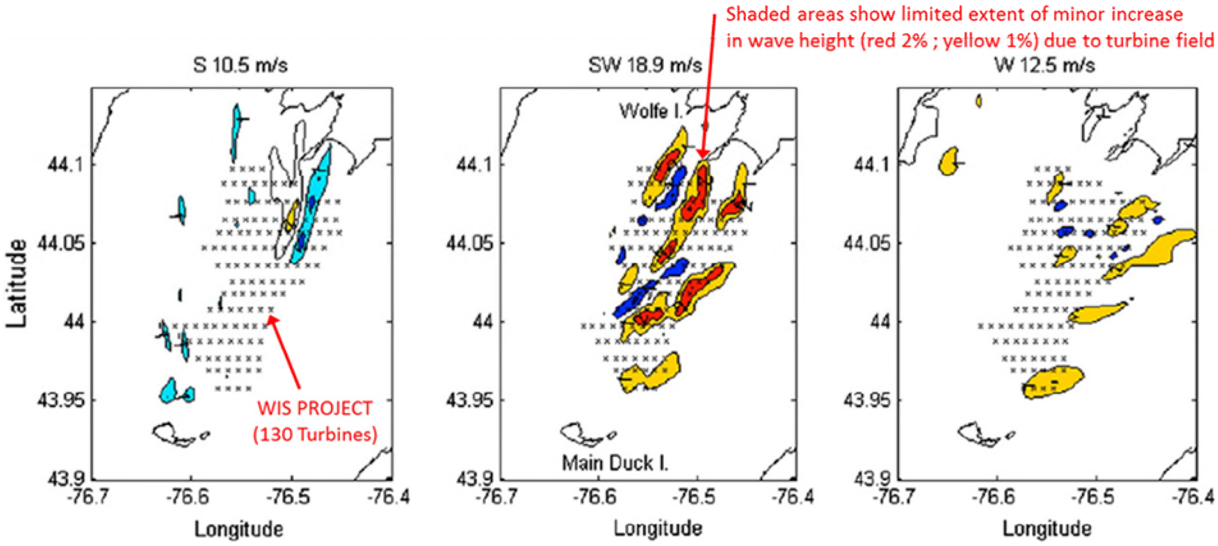
Description: The existing shipping navigation allowance in numerous other areas of the St Lawrence Seaway system are much less than provided for in the design of the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 5.5.

Figure A.75 - Vessel Carrying Wind Turbine Blades Passing Through Existing American Narrows Channel for Two-way Traffic

Description: The existing shipping navigation allowance in numerous other areas of the St Lawrence Seaway system are much less than provided for in the design of the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 5.8.



Each contour line unit is in %. Increase in significant wave height: yellow, +1%; red, +2%. Decrease in significant wave height: light blue, −1%; dark blue, −2%. Wind direction & speed for each plot are indicated.

McCombs, M. P., Mulligan, R. P., & Boegman, L. (2014). Offshore wind farm impacts on surface waves and circulation in Eastern Lake Ontario. Coastal Engineering, 93, 32–39. https://doi.org/10.1016/j.coastaleng.2014.08.001

Figure A-76 - Minor Impact of Wind Farm on Wave Height for Three Wind Directions

Description: Study confirms the Wolfe Island Shoals Offshore Wind Farm will have negligible impact on surface waves and circulation in the area.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 6.2.

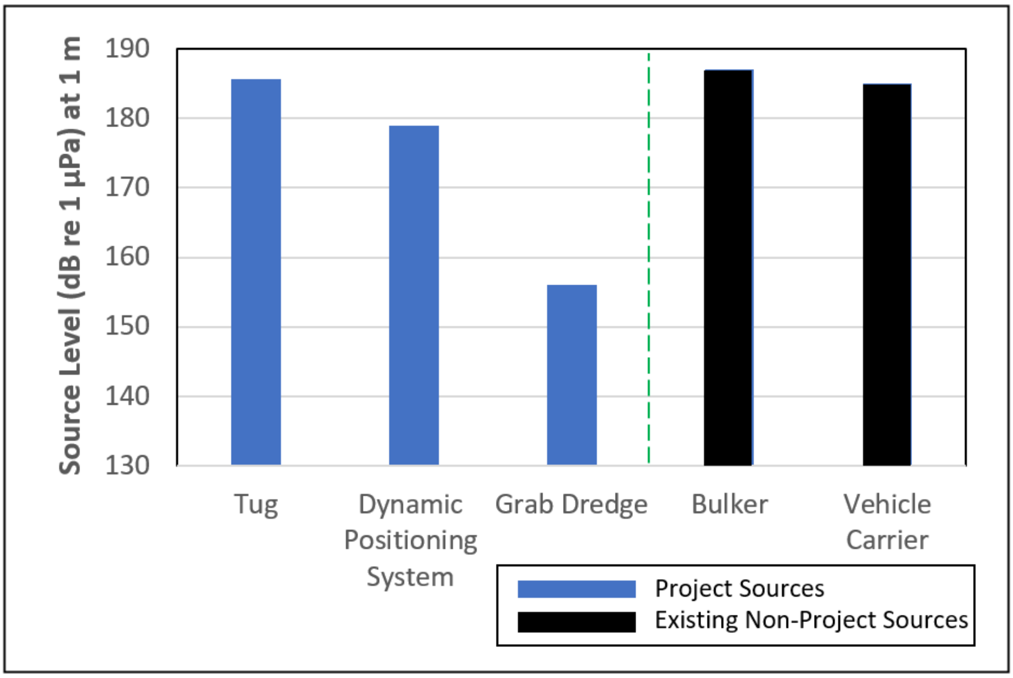


Figure A.77 - Noise Emissions of the Various Project Noise Sources Relative to Existing Non-Project Noise Sources in the Vicinity

Description: Study confirms that the level of underwater noise associated with construction of the Wolfe Island Shoals Offshore Wind Farm is less than existing sources of underwater noise such as bulk and vehicle carriers.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 8.1 (SLR, 2021).

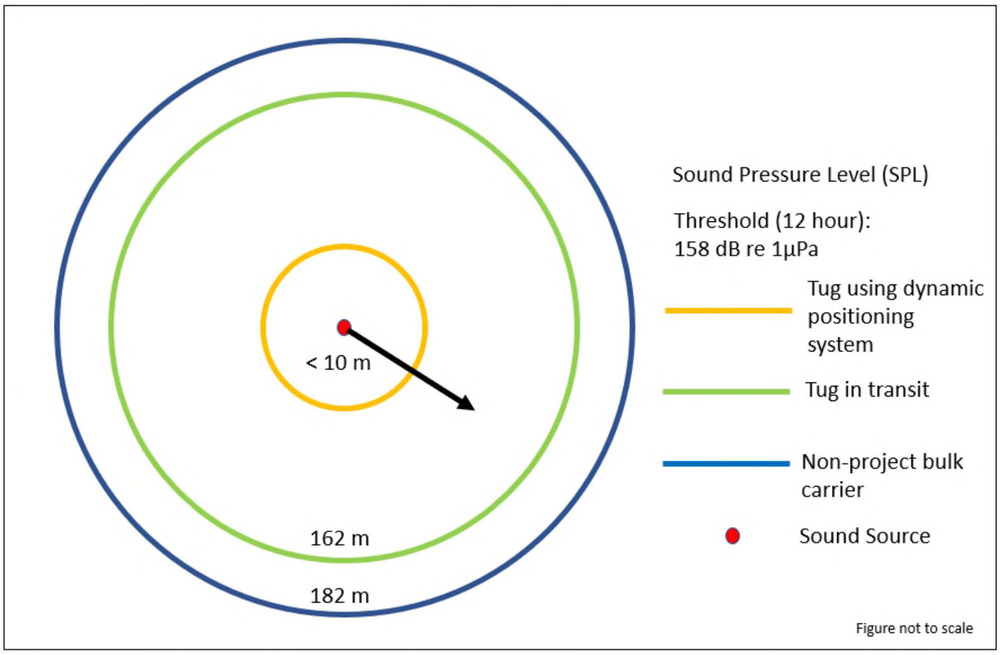


Figure A.78: Relative Distances to Fish Temporary Hearing Impairment Threshold (Temporary Threshold Shift or TTS) for Various Noise Sources

Description: Study confirms that the level of underwater noise associated with construction of the Wolfe Island Shoals Offshore Wind Farm is predicted to have negligible impact on fish and is less than existing sources of underwater noise.

Reference: CER-Baird-3, *Windstream Wolfe Island Shoals Offshore Wind Energy Project NAFTA2 Lake Ontario Context*, dated February 18, 2022. Figure 8.2 (SLR, 2021).

Figure A.79 – Permits, Licences, Approvals and Agreements Process

Description: Summary of the strategic process followed in securing permits, licences, approvals and agreements (PLAA) for the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-WSP-2, *Windstream Energy LLC and Government of Canada Renewable Energy Approval and Permitting*, dated February 18, 2022. Figure 3-1.

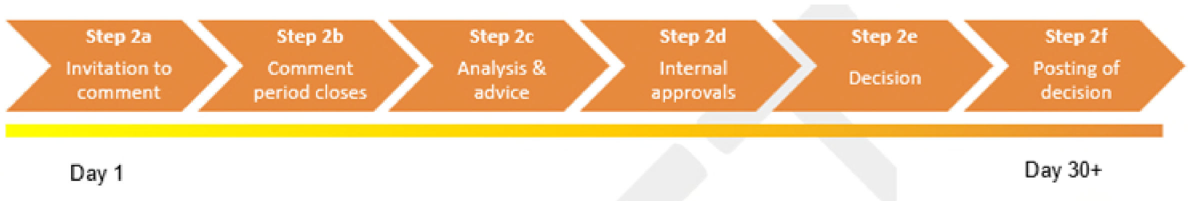


Figure A.80 - Impact Assessment Act (IAA) Public Participation Timeline

Description: Summary of the minimum process followed to invite and secure public participation in the permits, licences, approvals and agreements process for the Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-WSP-2, *Windstream Energy LLC and Government of Canada Renewable Energy Approval and Permitting*, dated February 18, 2022. Figure 3-2.

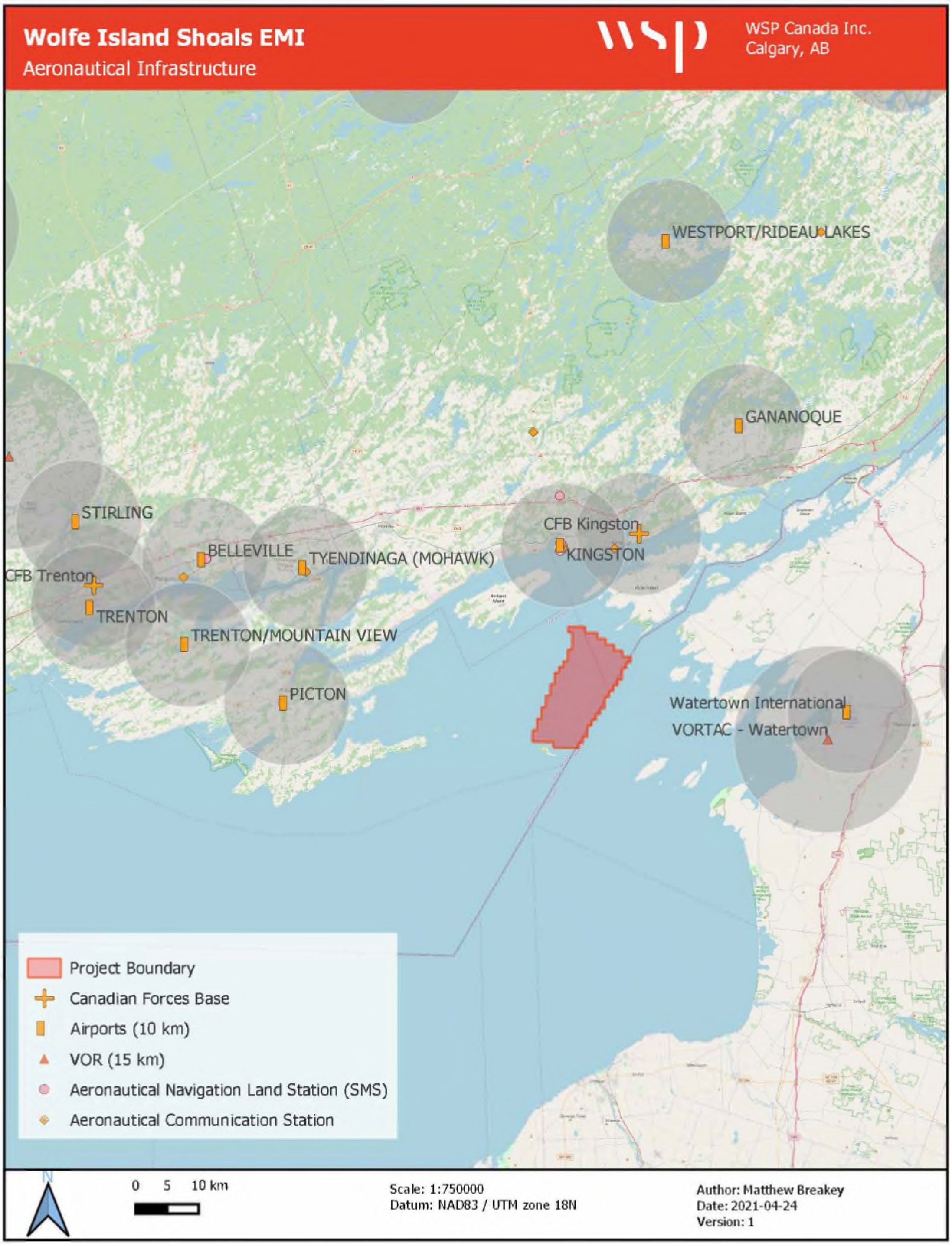


Figure A.81 - Aeronautical Infrastructure

Description: Study confirms that the Wolfe Island Shoals Offshore Wind Farm is not within zones that would require consultation with Canadian Forces Bases, airports, VOR radio navigation beacons or aeronautical navigation land/communication stations in the area.

Reference: CER-WSP-2, *Windstream Energy LLC and Government of Canada Renewable Energy Approval and Permitting*, dated February 18, 2022. Figure 3-3.

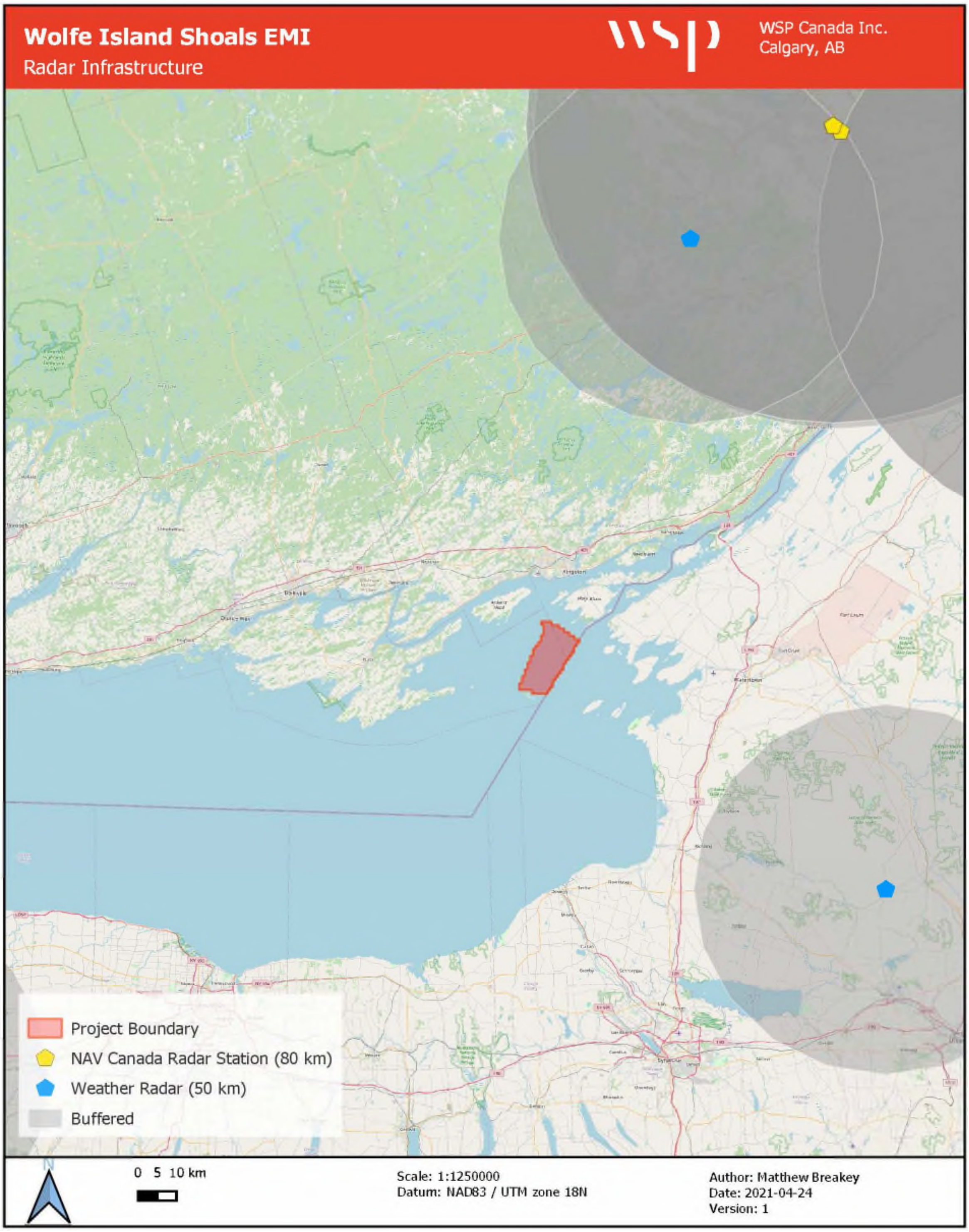


Figure A.82 - Radar Infrastructure

Description: Study confirms that the Wolfe Island Shoals Offshore Wind Farm is not within zones that would require consultation with Navigation Canada radar stations or weather radar stations in the area.

Reference: CER-WSP-2, *Windstream Energy LLC and Government of Canada Renewable Energy Approval and Permitting*, dated February 18, 2022. Figure 3-4.

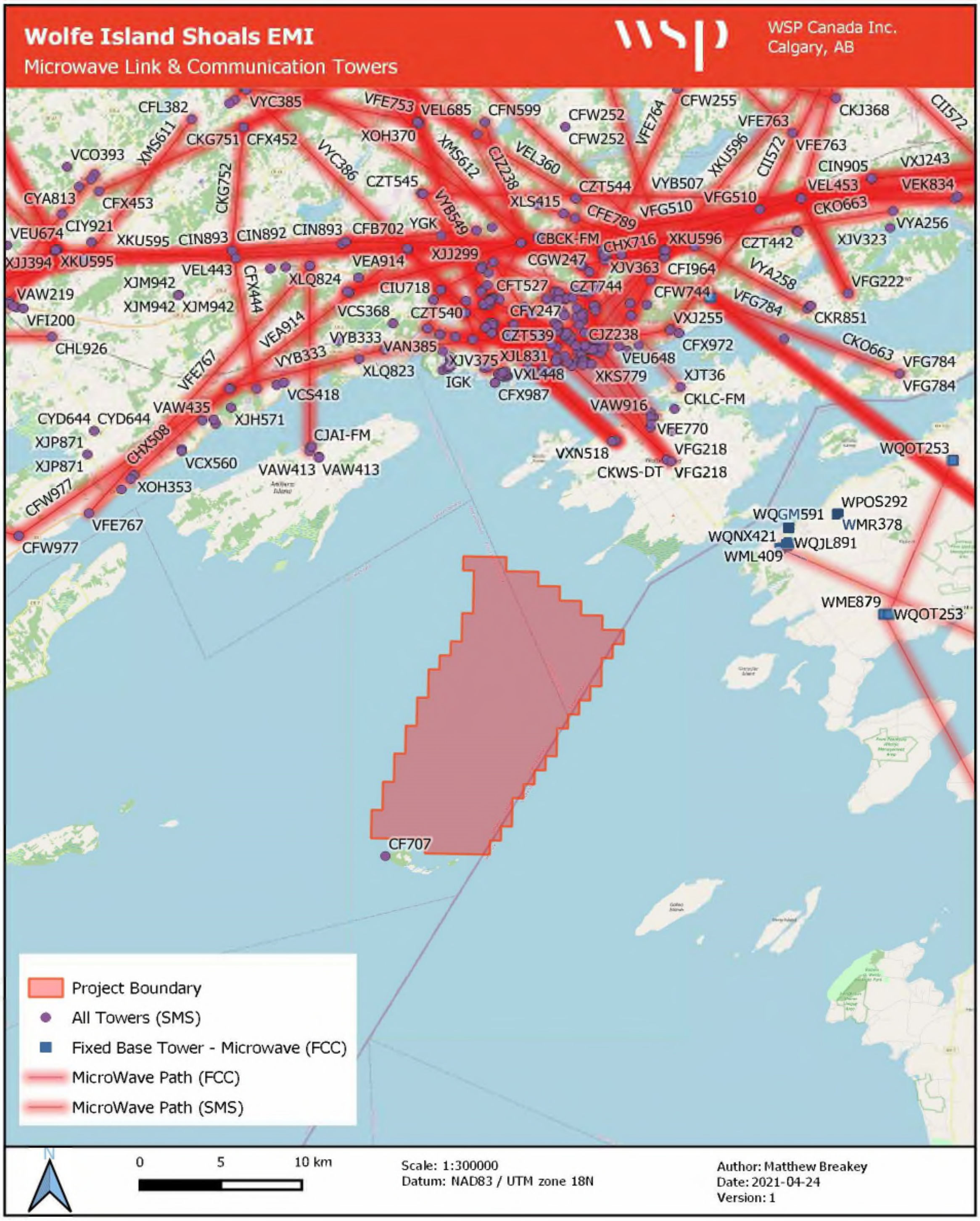


Figure A.83 - Microwave Links and Communications Towers

Description: Study confirms that the Wolfe Island Shoals Offshore Wind Farm does not conflict with microwave links and communications towers in the area and is not expected to cause interference with the SMS tower located near the south end of the project.

Reference: CER-WSP-2, *Windstream Energy LLC and Government of Canada Renewable Energy Approval and Permitting*, dated February 18, 2022. Figure 3-5.

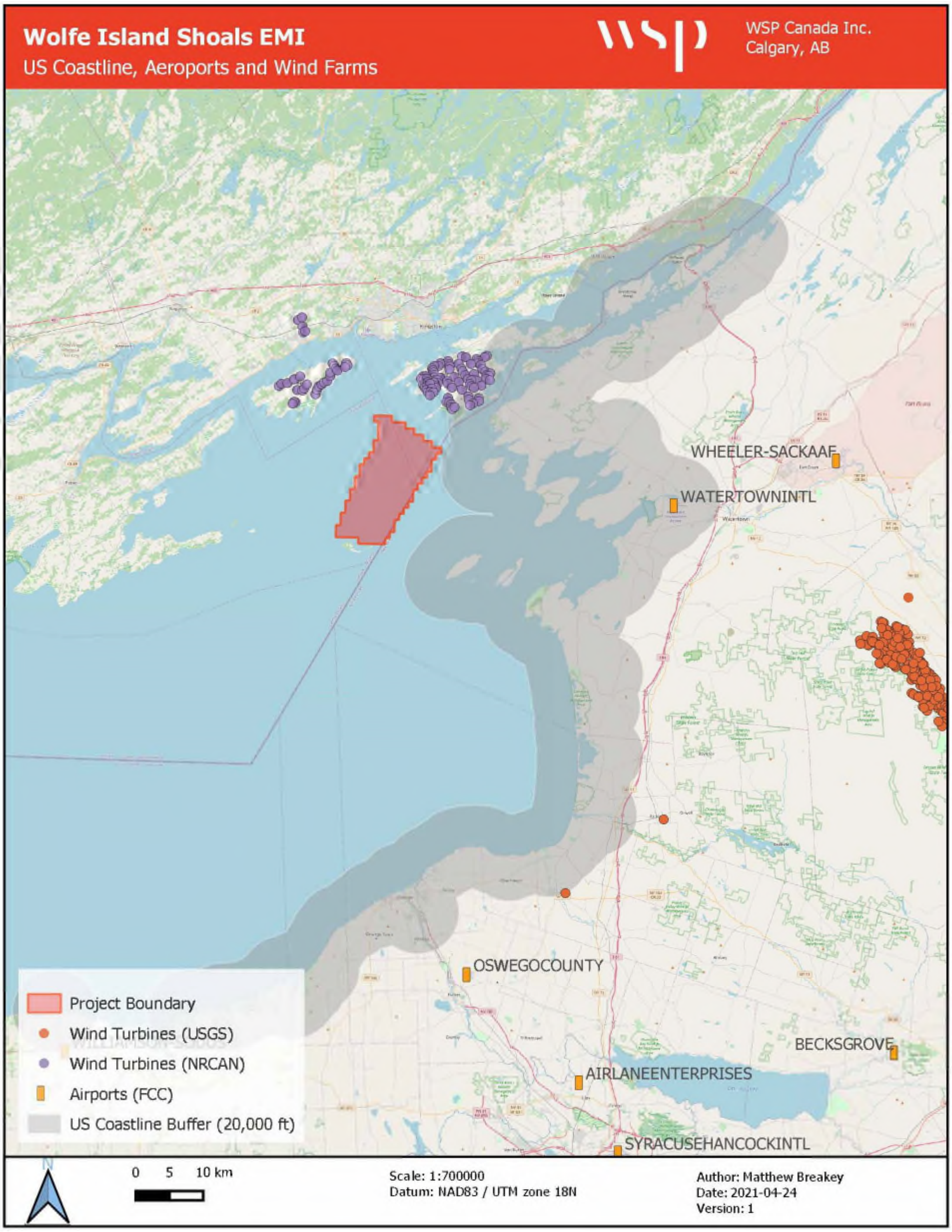


Figure A.84 - US Airports, Windfarms and Coastal Consultation Zone

Description: Study confirms that the Wolfe Island Shoals Offshore Wind Farm is not within zones that would require consultation with US based public use or military airports, public use heliport or other consultation with US authorities due to distance from the US shoreline.

Reference: CER-WSP-2, *Windstream Energy LLC and Government of Canada Renewable Energy Approval and Permitting*, dated February 18, 2022. Figure 3-6.

Figure A.85 - Kingston Third Crossing Under Construction April 2021

Description: Marine construction has been approved and has taken place in the eastern end of Lake Ontario much closer to drinking water intakes than the proposed Wolfe Island Shoals Offshore Wind Farm.

Reference: CER-WSP-2, *Windstream Energy LLC and Government of Canada Renewable Energy Approval and Permitting*, dated February 18, 2022. Figure 4-1.

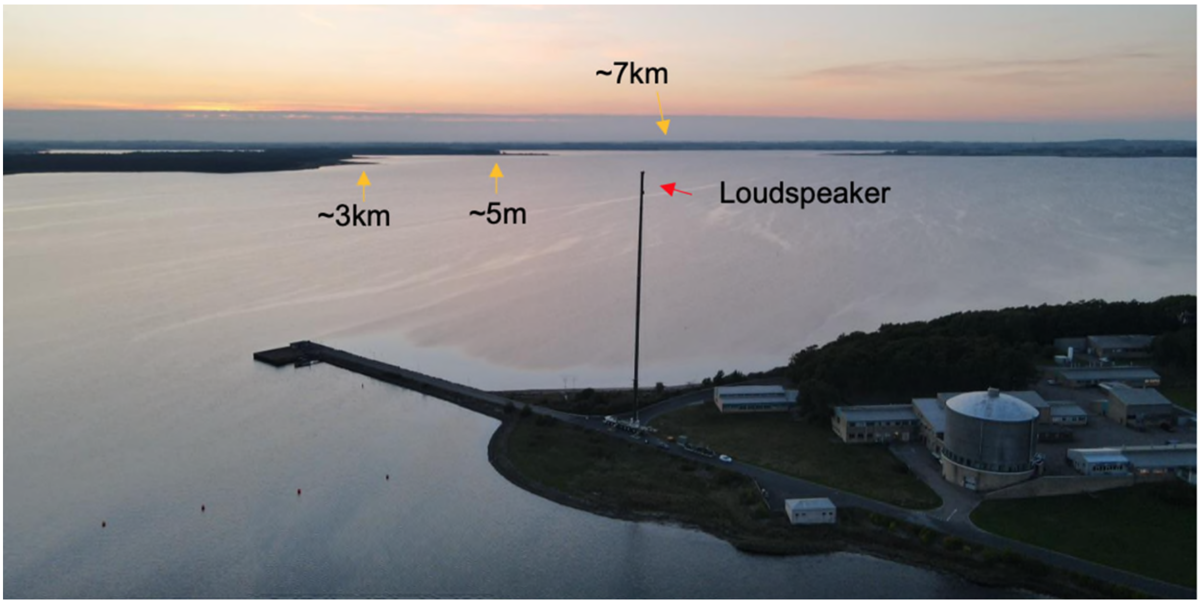


Figure A.86 - Drone Photograph Showing the Area of the Noise Measurement Campaign

Description: To better understand the transmission of noise over water and ice, a study was conducted placing a source of noise (loudspeaker) on the shore of Wolfe Island with noise measurement devices located approximately 3km to 5km offshore, to approximate the distance to the nearest WTGs.

Reference: CER-Aercoustics-2, *Wolfe Island Shoals Sound Study*, dated February 18, 2022. Figure 1.

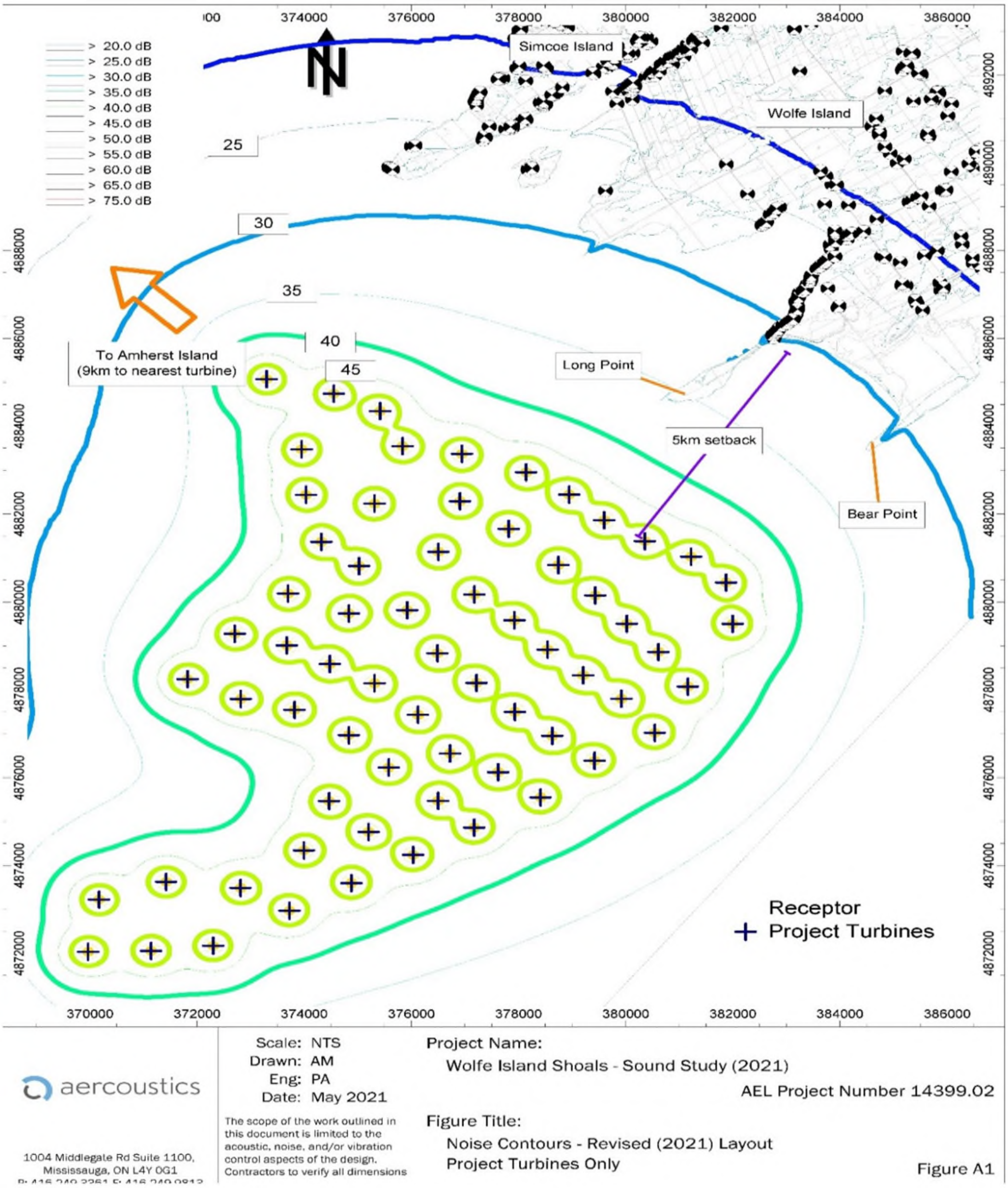


Figure A.87 - Noise Contours

Description: Noise modelling, informed by the site-specific measurements of the transmission of noise over water and ice, confirm that noise from the Wolfe Island Shoals Offshore Wind Farm is expected to have very little noise impact at any land-based noise receptors. The noise results are far below the Ministry of Environment, Conservation and Parks (MECP) sound level limit of 40 dBA.

Reference: CER-Aercoustics-2, *Wolfe Island Shoals Sound Study*, dated February 18, 2022. Appendix 2.