

Foundation for a Sustainable Northern Future

REPORT OF THE JOINT REVIEW PANEL FOR THE MACKENZIE GAS PROJECT

VOLUME I — CHAPTERS 1 TO 10

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for the Mackenzie Gas Project

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impact predictions, especially about mitigation initiatives, and to make adjustments in Project implementation as needed. This approach to adaptive management requires monitoring focused on particular predicted impacts, identification of discrepancies between predicted and actual impacts, and use of this information in determining needs for additional or adjusted mitigation efforts. For this, advocates underline the importance of specific initial predictions (against which actual impacts can be compared) and early determination of impact thresholds for determining when unexpected impact findings must trigger adaptive response. The underlying model here is that of a scientific test, though the monitoring might engage community as well as specialist monitors.

For this kind of adaptive management, the key preparatory steps include ensuring that impact predictions are specific enough to be testable (hypotheses), establishing clearly defined impact thresholds to clarify where and when adaptive responses will be necessary, and preparing contingency plans, resources and capacities for responsive action especially in areas where impact predictions may be uncertain and where predictive errors may have serious consequences.

ADAPTIVE MANAGEMENT IN RESPONSE TO ILL-DEFINED POSSIBILITIES AND SURPRISE

Some discussion of adaptive management focused on broader uncertainties and surprises arising from the complexity of ecological and socio-economic systems, changes in the regional context (especially due to the expansion capacity design inherent in the Project) and changes in the global context (e.g. due to climate change). The consequence is the possibility of unexpected impacts or impacts of unexpected significance or in unexpected locations. Because the associated concerns here are unanticipated, they may not be noticed in ordinary monitoring of predicted impacts and planned mitigation and enhancement initiatives. Broader and more comprehensive monitoring is needed to identify such emerging problems and opportunities. This monitoring could be concentrated on areas of pre-identified importance — valued ecosystem and community components — and informed by pre-identified impacts thresholds. But the significance of identified changes and the nature of the responses needed would be tested against broader objectives and progress towards desired ends. Delineating such ends could involve efforts to describe plausible and desirable future scenarios. The underlying model here is closer to iterative planning than to scientific experiment.

For adaptive management focused on broader uncertainties and surprise, the key preparatory steps centre on adaptive design and adaptive governance capacity. The Project, associated undertakings and induced development initiatives, and the planning and regulatory regime governing these activities would all need to be designed in ways that provide options for adaptive adjustment (e.g. design with an emphasis on flexibility, reversibility, fall-back options). But the desirable preparations also involve establishing and strengthening the capacity of all

stakeholders — responsible government authorities and affected communities, as well as implementing companies and their contractors — to identify unexpected changes, to collaborate in analysis of their significance and to determine appropriate responses.

The Panel accepts that appropriate adaptive management preparations and plans for the MGP must be capable of addressing both of these forms of adaptive management — one focusing on predicted impacts and the other focusing on broader uncertainties — and the methodologies suitable to them. This means that adaptive management cannot be a consideration only for the Project as Filed or expanded, and it cannot be a responsibility only for the Proponents. Inevitably, the major concerns in this case are the cumulative impacts, positive and negative. These involve, in various ways, all of the participants in the review, most notably, the Proponents, the territorial and federal governments, Aboriginal authorities and organizations, and wildlife management bodies and regulators.

These matters are discussed further in Chapter 18, “Monitoring, Follow-up and Management Plans.”

The Panel notes that the definition of “impact on the environment” in the Panel’s Mandate includes not just the impact the Project could have on the environment but also “any change to the project that may be caused by the environment.” The Proponents’ prediction of changes the environment might cause on the Project as well as their proposed measures to avoid or mitigate such changes are addressed in Chapter 6, “Project Design, Construction and Operations.”

5.4.5 CUMULATIVE IMPACT ASSESSMENT

Two central concerns raised by participants during the Panel hearings were the temporal and spatial scope of the Proponents’ cumulative impact assessment (especially with respect to future developments that may be induced by the Project) and the application of cumulative impacts significance criteria.

In their cumulative impact assessment, the Proponents focused on identifying Project-specific cumulative impacts. This approach examined how specific types of Project impacts could combine spatially and temporally with similar impacts caused by other projects to create a cumulative effect (e.g. cumulative impacts on direct mortality, cumulative impacts on habitat). The analysis was conducted and reported at the level of direct Project effects on valued ecosystem components; estimates of such direct cumulative effects were not integrated into an overall assessment of valued component sustainability.

The Proponents considered the impacts of possible future expansion of the Project. Their expansion case considered the likely effects of increasing the throughput of gas by adding more compressor stations and other gas sources. They stated that:

Future gas projects in the Mackenzie Delta region that might be induced by the project are also included in the cumulative effects assessment. A gas project is considered induced if its development is contingent on the development of the Mackenzie Gas Project. **A project is included in the cumulative effects assessment if a precedent agreement exists for that project to ship gas on Mackenzie Gas Project pipelines.** [emphasis added] (EIS, V1, Section 2, p. 35)

This qualifier, emphasized above, is important. The Proponents identified only the following developments as reasonably foreseeable in preparing their cumulative impacts assessment:

- the Devon Canada Corporation's Beaufort Sea exploration drilling program;
- the Deh Cho Corporation Mackenzie River bridge at Fort Providence;
- the De Beers Snap Lake diamond mine; and
- the GNWT Mackenzie River winter bridges.

In response to a Panel request, the Proponents described a future scenario of induced development which they considered hypothetical. The Proponents concluded that including the induced development in the cumulative impact assessment would not result in a Class I significance designation (i.e. potentially threatened sustainability of a valued component) for any of the cumulative effects assessed.

The Proponents stated that the list of reasonably foreseeable projects was complete and appropriate at the time. They stated that an assessment of hypothetical land uses had been performed that included the seismic and drilling activity associated with potential future exploration activity. They also noted that a conservative precautionary approach was used in conducting the assessment of the potential impacts of reasonably foreseeable projects. The Proponents therefore disagreed with statements by INAC and Environment Canada that the predicted cumulative effects had been underestimated in the assessment.

Many participants were of the view that potential cumulative effects of the MGP are of great concern and that the cumulative impact assessment done by the Proponents was insufficient. The SCC argued that by not including potential future induced development in their analysis, the Proponents had failed to meet the EIS Terms of Reference provisions, which required that they employ best practices.

Participants advocated that the Panel should recommend that a scenario-based cumulative impact assessment be done to gain insight into the implications for impacts of future induced development on the sustainability of valued components. This issue is addressed in Chapter 18, "Monitoring, Follow-up and Management Plans."

Environment Canada asserted that the Proponents had not used best practices in the cumulative impact assessment. The view of the department was that there were some likely projects that were not addressed in the cumulative impact assessment and should have been, and that the cumulative impact assessment analysis did not address all valued components that should have been included, specifically the Kendall Island Bird Sanctuary.

The Panel notes that the Proponents' focus on Project-specific cumulative effects resulted in a narrow scoping in regard to the spatial extent of the analysis and the identification of reasonably foreseeable future developments. The spatial extent of the cumulative impact assessment is the same as that employed for the EIS. An approach that focused on the conditions of valued components and the impact of the Project on those conditions would have resulted in spatial boundaries broader than those considered by the Proponents. The Proponents' criteria for identifying "reasonably foreseeable" developments likewise served to limit the scope of its cumulative impact assessment.

The Panel accepts that the Proponents' approach to considering induced developments in the cumulative impact assessment was consistent with the 1994 *Reference Guide for the Canadian Environmental Assessment Act — Addressing Cumulative Environmental Effects*, which states that in most cases induced development will not be considered as part of a cumulative impact assessment.

However, the Panel also notes that other, more recent guidance advocates the consideration of induced developments in a cumulative impact assessment, specifically the 1999 *Operational Policy Statement — Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*, the 1999 *Cumulative Effects Assessment Practitioners Guide*, and the guidance prepared for assessments conducted under the requirements of the *Alberta Environmental Protection and Enhancement Act* and that for the *Mackenzie Valley Resource Management Act* (MVRMA).

The 2004 *Environmental Impact Assessment Guidelines* issued by the MVEIRB for preparation of environmental impact assessments under the MVRMA indicates that "[i]dentifying reasonably foreseeable future developments involves a broad prediction for which less detail is expected than when identifying present or past human activities."

The 2004 Guidelines direct Proponents to include as reasonably foreseeable "other developments that have not been formally proposed but can be reasonably foreseen" and, in discussing an example of a proposed pipeline through a previously inaccessible area with little existing development, asserts that:

if looking at similar cases indicated that a certain type and intensity of induced development routinely followed, then these types of induced developments should be considered reasonably foreseeable for the proposed development, even though no applications for them have been submitted. (MVEIRB EIA Guidelines, March 2004, pp. 81–82)

The EIS Terms of Reference indicate that “a degree of certainty” about a future project or activity is needed for it to be considered in the MGP cumulative impact assessment (EIS Terms of Reference, p. 62) and also that the environmental assessment, to the extent possible, “use current, accepted methods of practice in the Northwest Territories and Alberta or relevant to the Project area.” (EIS Terms of Reference, p. 40)

In the Panel’s view, the Proponents’ focus on Project-specific cumulative effects unduly narrows the spatial and temporal scope of the assessment. This approach serves to justify the Proponents’ view that future developments to support the Expansion Capacity Scenario are a “hypothetical land use.” The Panel has adopted the more recent (1999) CEA Act guidance and the (2004) MVEIRB guidance in reviewing the cumulative impacts of the MGP. On this basis, and for the reasons cited in Chapter 3, “Potential Future Developments,” the Expansion Capacity Scenario described in that chapter is considered to include a range of reasonably foreseeable developments and the Panel has approached the review of the Project’s cumulative impacts resulting from future induced developments with this in mind.

To summarize, and as elaborated in Chapter 3, “Potential Future Developments,” the Panel has approached its overall review of the Project’s cumulative impacts assessment according to what it refers throughout the Report as:

- the Project as Filed;
- the Expansion Capacity Scenario (considered by the Panel to be inclusive of a range of reasonably foreseeable developments induced by the Project); and
- Other Future Scenarios (considered by the Panel to include future hypothetical developments in addition to those induced by the Project).

The Proponents used the same criteria to determine the significance of cumulative socio-economic impacts as they did for Project-specific impacts. However, the Proponents used different criteria to determine the significance of cumulative biophysical impacts than the ones they used to determine Project-specific biophysical impacts. In determining the significance of cumulative biophysical impacts, the Proponents used the following classification system:

Class I effects represent those that are of most concern. In this class, the predicted trend in the value component could threaten its sustainability in the regional study area and should be considered a management concern. Research, monitoring and recovery initiatives should be considered under an integrated resource management framework. A Class I effect would be considered to be significant. ...

Class II effects are those where the predicted trend, in the valued component, will likely result in its decline to lower than baseline but stable levels or quality in the regional study area. Regional management actions, such as research, monitoring and recovery strategies might be required. ...

Class III effects are considered to be the least concern and would result in no change or could decline in the regional study area during the life of the Mackenzie Gas Project but should recover to baseline after decommissioning and abandonment. No immediate management initiatives other than adherence to responsible industrial practices are required. (Kerr, HT V102, pp. 10098–99)

The EIS states that these three classes are adopted from the guidance provided by MVEIRB, and the class designations were based on professional judgment.

The Proponents determined that none of the cumulative impacts would be of Class I significance (the only class that leads to a conclusion of significant effect). The Panel does not agree with this judgment and acknowledges the concerns that a number of participants expressed about it.

The Panel notes that, although the significance classification employed by the Proponents is based on the MVEIRB guidance, there is a critical difference. The significance classes recommended by the MVEIRB guidance specify levels of population decline that would be associated with each class (Class III: less than 1%, Class II: 1% to 10%, Class I: greater than 10%). The significance classes employed by the Proponents do not specify levels and are focused principally on habitat loss and not on population status and levels.

Additional discussion and recommendations on topic-specific cumulative impacts can be found in the relevant chapters of this Report. The implications and deficiencies of the Proponents’ approach to cumulative impact assessment and Panel recommendations to address them are dealt with in Chapter 18, “Monitoring, Follow-up and Management Plans.”

5.4.6 SIGNIFICANCE OF PROJECT IMPACTS

The concept of “significance” is central to the Mandate of the Panel. The Preamble to the JRPA recites that the Parties to the JRPA “agree that development should occur in a manner that protects the environment from **significant** adverse environmental impacts unless justified...” [emphasis added] Section 2 of the Schedule to the JRPA, setting out the Panel’s Mandate, requires that the Panel’s review “have regard to the protection of the environment from the **significant** adverse impacts of proposed developments...” [emphasis added] Section 4.8 requires that the Panel’s Report include “a rationale, conclusions and recommendations regarding the nature and **significance** of impacts on the environment...” [emphasis added] Finally, the list of factors to be considered by the Panel includes the “significance” of impacts of the Project.

Notwithstanding the fundamental role of “significance” that follows from these provisions, neither the JRPA nor the relevant legislative framework explicitly defines the term or provides specific criteria to be applied in making individual determinations