

Briefing paper

Clarification of certain key matters related to the criteria and scope of the Joint Review Panel review of the proposed Enbridge Northern Gateway Pipelines project and Environmental Impact Statement

prepared by Robert B. Gibson, ERS, University of Waterloo
commissioned by Barry Robinson, Ecojustice on behalf of the Living Oceans Society, the Raincoast Conservation Foundation and ForestEthics

13 August 2011

Agenda

This briefing paper considers two major issue areas where uncertainties remain concerning the upcoming review of the Enbridge Northern Gateway Pipeline Project by the Joint Review Panel established for the case. These issue areas concern

- the basic evaluation and decision criteria to be applied and consequently the framework for analysis to be applied; and
- the scope of considerations to be addressed, with particular regard for cumulative effects, and related implications for other matters of assessment review practice (e.g. re comparative evaluation of alternatives).

The first point centres on what attention is to be paid to sustainability effects as a core consideration in the Northern Gateway Panel's assessment review. After issuing its initial "Procedural Directive" including a draft List of Issues, in July 2010,¹ the Panel was asked by some parties to add to the issues list explicit attention to contribution to sustainability and sustainable development. In response, the Panel stated that no such change to the issues list was required, because "...the draft List of Issues is sufficiently broad to allow us to examine concepts related to sustainability and sustainable development."² The Panel also noted that a purpose of the *Canadian Environmental Assessment Act* is "to encourage sustainable development" and that its obligation under the *National Energy Board Act* required evaluation of public convenience and necessity in a similar light. Consequently, the Panel concluded that "...our consideration of whether the Project is in the public interest allows us to consider the Project's contribution to sustainability or

¹ Joint Review Panel for the Enbridge Northern Gateway Project, *Procedural Directive*, 5 July 2010.

² Joint Review Panel for the Enbridge Northern Gateway Project, *Panel Session Results and Decision [concerning the Procedural Directive]*, 19 January 2011, p.11.

sustainable development as appropriate.”³

While this response from the Panel indicates familiarity with the relevance and significance of sustainability effects in the assessment, recognizes the existing legislated foundations for sustainability-based assessment, and suggests some commitment to considering the proposed project’s contribution to sustainability, it does not confirm adoption of a sustainability-based approach to the review. Consequently, it leaves uncertain the extent to which the Panel will apply sustainability-based evaluation and decision criteria, and how it will rule on a range of related matters of scope and focus, relevant alternatives, appropriate areas for findings and recommendations, etc.

This paper addresses the uncertainties surrounding the role of contribution to sustainability evaluation in the Northern Gateway Panel review by setting out the essentials of what is appropriately required in a sustainability-based assessment, including the central matter of criteria for evaluations and decisions. It also examines the practical implications, especially what can be learned from past experience and precedent about the major substantive issues that would be prominent in this assessment review with application of the contribution to sustainability test.

The second point is about the scope of matters to be considered, particularly those related to cumulative effects. Many of the uncertainties here may be resolved sufficiently through clarification of commitment to sustainability-based assessment. Some, however, merit particular attention. The recognized scope of cumulative effects to be considered is especially important because cumulative effects are, in the end, what matter. Key questions in this case include what attention should and will be given to the cumulative effects of the project and other activities upstream and downstream from the project facilities themselves (considerations complicated by the incorporation of two pipelines with flows in opposite directions), and to cumulative legacy effects beyond the life of the project itself.

Concerning the upstream and downstream effects (i.e., effects beyond the project area in Canada and outside Canada), the Panel has so far ruled that it “will not consider the environmental effects of oil sands projects or the consumption of oil in market destinations beyond the potential for cumulative effects with the Project.”⁴ This leaves unclear what upstream and downstream considerations may contribute to cumulative effects relevant to the assessment of the proposed project. Concerning legacy effects, the Panel’s document is silent, though that need not be interpreted as excluding the topic.

This paper addresses the uncertainties surrounding the scope of cumulative effects to be assessed by setting out the key cumulative effects scoping considerations, particularly in the light of contribution to sustainability issues.

³ *Ibid.*, page 12.

⁴ *Ibid.*, p.6. See also pp.12-14.

Background

The Enbridge Northern Gateway Project is a major proposed undertaking. While it is captured for assessment purposes as a significant physical work requiring multiple permits and other approvals, it also has strategic level significance both nationally and regionally. The project is intended to expand and diversify international markets for oil from extracted bitumen, already a nationally significant source of export revenues. As well, the cumulative effects of \$5.5 billion in pipelines and associated facilities between Fort Saskatchewan and Kitimat would have important implications for regional futures over the lifetime of the project and beyond, and in the project area and beyond.

Evaluation of the project proposal by the Northern Gateway Joint Review Panel will be guided by several immediate sources of authority and interpretation:

- a set of broad law and policy documents, including most importantly the Canadian Environmental Assessment Act and related policy statements (e.g. on cumulative effects) from the Canadian Environmental Assessment Agency, and the National Energy Board Act and the NEB Filing Manual (as revised May 2011);
- documents from the establishing authorities but specific to the case, including most importantly the Agreement establishing the Gateway Panel and setting out its Terms of Reference;
- the Panel's own rulings, especially its Procedural Direction statement (July 2010, revised January 2011).

These documents are clearer on some matters than others. Particular uncertainties remain concerning the two areas noted above. Clarification is likely to be helpful to all parties, including the Panel.

Determination of what is reasonable to do in these areas of concern is properly informed by an appreciation of the practicalities of the case in the larger context of the evolving world of understanding and practice in environmental assessment. In recent years, in Canada and beyond, environmental assessment practitioners have been adjusting their approaches to address several intersecting developments. Chief among these have been the following:

- deepening concerns about the sustainability of current practices at regional to global scales, and associated commitments in law and policy to sustainable development, contributions towards sustainability and similar objectives using other language;
- greater recognition of complexity and better understanding of the functioning and vulnerabilities of dynamic complex systems, including socio-ecological systems, especially with regard to the significance of interactions among components (positive and negative feedbacks, etc.) at multiple scales, and the inevitability of uncertainty and surprise;
- maturing awareness of the limits of conventional government capacity to address all issues and meet all expectations, especially in light of the two points above, and responses including greater emphasis on participative, multistakeholder deliberations and collaboration and on more efficient application of available governance resources.

The influence of these considerations can be seen in the evolution of assessment thinking and practice in Canada and elsewhere. In particular, five major shifts have been evident over the past few decades and are still on-going today:

- from assessments focused exclusively on mitigation of adverse effects to adoption of sustainability-based assessment criteria and analytical frameworks seeking overall positive contributions to desirable and durable futures;
- from component-centred to systemic assessment methodologies, and associated indicators, attention to interactive effects, etc.;
- from expectation of predictive certainty to application of precautionary principles and approaches, expectations for adaptive design and associated management capacity;
- from government/industry collaborative regulation to early and broader stakeholder engagement including intervenor funding;
- from reactive and fragmented case-by case licensing to anticipatory planning stage assessment with consideration of needs, alternatives and cumulative effects.

The essentials of sustainability-based assessment

Since publication of the World Commission on Environment and Development (Brundtland Commission) report, *Our Common Future*, in 1987, many governments and other authorities have adopted the concept of sustainable development and have made commitment in law and policy to decision making that fosters progress in the direction of sustainability. A typical Canadian example is the second stated purpose of the *Canadian Environmental Assessment Act*:

to encourage responsible authorities to take actions that promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy (s.4(1)(b)).

Deliberations on the concept of sustainability and its implications for practical application have generated a considerable literature. Many views have been expressed, not all of them encumbered by service to specific interests. While legitimate differences of perspective and emphasis remain, the fundamentals are now reasonably clear. For the immediate purposes of this paper, the following four considerations are particularly important:

(i) Sustainability has attracted interest and commitment as a positive response to evidence from crucial global trends that continued economic expansion along the current path cannot be maintained. Anthropogenic material and energy demands and associated stresses on biophysical systems, including climate systems, are probably already over the sustainable carrying capacity of the biosphere, given current technological and managerial capacities, and are still growing.⁵ Significant change is required reduce these

⁵ WWF, *Living Planet Report*, 2010, p.7; Millennium Ecosystem Assessment 2005, *Ecosystems and Human Well-being: General Synthesis* <<http://www.maweb.org/en/Synthesis.aspx>>.

stresses while continuing to enhance wellbeing, especially for the billion or so people who now suffer from significant material deficiency.⁶ Moving towards sustainability is about changing the direction of key trends arising from current behaviour; it cannot be achieved through mere mitigation of adverse effects.

For assessments, this means that the proper objective is identifying and designing undertakings that favour options that make the most positive contribution to sustainability, with attention to enhancing beneficial effects as well as mitigating adverse ones.

(ii) Progress towards sustainability requires recovery of ecological viability but it is not practically possible without enhancing the distribution and security of economic wellbeing and social justice, and respecting complexity and uncertainty. While the social, economic and ecological “pillars” of sustainability are often recognized, the key insight is that the three are interdependent and mutually influential.

For assessments this entails not only incorporating attention to social, economic and ecological effects but also examining their interactions over time, avoiding trade-offs to the extent possible, and seeking multiple, mutually reinforcing, fairly distributed and lasting gains.

(iii) Sustainability requires attention to medium and long term future effects. This is in part to respect the interests of future generations, as is recognized in the oft-cited brief definition from the Brundtland Commission report. But it rests also on recognition that the transitions needed for movement towards sustainability are a long term challenge. Moreover, sustainability is not an end state to be achieved but a dynamic objective to be pursued.

For assessments this entails a focus not only on the full project lifecycle but on cumulative legacy effects.

(iv) The general requirements for transition to greater sustainability are reasonably well accepted (though presented in many different forms).⁷ These provide generic criteria for

⁶ About 925 million people were malnourished in 2008, up from about 850 million in 1990. See UN Food and Agriculture Organization, Economic and Social Development Department, “The State of Food Insecurity in the World, 2008: High food prices and food security – threats and opportunities,” Food and Agriculture Organization, 2008, pp.2, 48; and Food and Agriculture Organization, Economic and Social Development Department, “Global hunger declining, but still unacceptably high,” September 2010. Also, most of the benefits of growth are still going to those already well off. The richest 10% of the world’s population get about 67% of the world’s income while the poorest 10% get about 0.22%. See Branko Milanovic, *Worlds Apart: measuring international and global inequality* (Princeton University Press, 2005).

⁷ For a synthesis of the literature see Robert B. Gibson *et al.*, *Sustainability assessment: criteria and processes* (London: Earthscan, 2005)

sustainability-based assessments. In every case, however, they must be specified for the particular context. Different places have different needs, capacities, opportunities and aspirations. Particular proposals and alternatives also raise their own sets of issues and openings. All assessments, however, need explicit, appropriate and credible criteria for evaluations and decisions.

For assessments the availability of generic sustainability assessment criteria plus recognition of context-specification needs provides a defensible foundation for meeting the often neglected obligation to be clear, consistent, comprehensive and transparent about the criteria used for evaluations and decisions (in contrast to minimally substantiated judgements about the “significance” of adverse effects and the undefined opening for approvals that are “justified in the circumstances”).⁸

Sustainability-based assessment practice and precedent in Canada

Long before the language of sustainability was adopted, particular major policy, planning and project development and review initiatives have applied what amount to sustainability-based approaches to assessment. The best known example is probably the mid-1970s Mackenzie Valley Pipeline Inquiry led by Mr. Justice Thomas Berger of the British Columbia Supreme Court,⁹ but there have been many others, including but not limited to initiatives under environmental assessment law.¹⁰

Explicitly sustainability-based assessment reviews have been carried out by four panels established under the *Canadian Environmental Assessment Act*. These were joint review panels in the cases of the Voisey’s Bay nickel mine and mill in Labrador, the Whites Point Quarry and Marine Terminal in Nova Scotia, the Kemess North Copper-Gold Mine in British Columbia and the Mackenzie Gas Project in the Northwest Territories. As is evident in the reports of the four panels, the successive applications of sustainability-based expectations led to gradual clarification of the approach to defining and applying suitable criteria in the analysis of proposals and alternatives. Even in the first case, however, the intent was clearly stated at the outset of the proceedings.

⁸ The Joint Review Panel for the Mackenzie Gas Project has provided the most advanced Canadian example of how to set out and apply a detailed set of context-specified sustainability assessment criteria. See Mackenzie Gas Project Joint Review Panel, *Foundation for a Sustainable Northern Future*, December 2009 <http://www.ngps.nt.ca/report.html>, especially chapters 5 and 19.

⁹ See Thomas R. Berger, *Northern Frontier, Northern Homeland: The Report of the Mackenzie Valley Pipeline Inquiry* (Ottawa: Supply and Services Canada, 1977); and Donald J. Gamble, “Berger Inquiry: an impact assessment process,” *Science* 199 (4332) 3 March 1978, pages 946-951.

¹⁰ See Robert B. Gibson, “Making a better world, one undertaking at a time: sustainability assessment and innovative decision making in Canada,” in Glen Toner, editor, *Innovation, Science and Environment: Canadian Policies and Performance 2008-2009* (Montreal/Kingston: McGill-Queens University Press, 2008), pp.53-73.

Like the Northern Gateway Panel, the Voisey's Bay Panel was given broad terms of reference incorporating attention to a comprehensive set of human and biophysical factors, welcoming traditional ecological knowledge, and recognizing cumulative effects, beneficial effects, and lasting effects on renewable resources.¹¹ In its guidelines for the assessment, the Voisey's Bay Panel interpreted its mandate as requiring consideration of "the extent to which the Undertaking may make a positive overall contribution towards the attainment of ecological and community sustainability, both at the local and regional levels" with attention to the preservation of ecosystem integrity, the rights of future generations and "the attainment of durable and equitable social and economic benefits."¹²

This early statement of core criteria for decision making proved to be helpful to all participants in the subsequent hearings and influential in the Panel's analysis and findings. Among the Panel's most significant recommendations was a proposal, eventually accepted by the relevant governments and the proponent, to reduce the mill capacity from 20,000 to 6,000 tonnes/day to slow the pace and extend the lifespan of mine operation, thereby ensuring a longer period to use mine opportunities and revenues to build the foundations for sustainable livelihoods once the mine closed.¹³

The later North Kemsess Panel went a little further. In addition to embracing the "positive overall contribution" test, it applied a basic sustainability assessment framework using five "sustainability perspectives: environmental stewardship; economic benefits and costs; social and cultural benefits and costs; fairness in the distribution of benefits and costs: and present versus future generations," which the Panel drew from earlier documents prepared by the international mining sector and the British Columbia government.¹⁴ Before drawing its overall conclusions about the proposed project, the Panel considered the anticipated project effects from each perspective.¹⁵

In the most recent case, the Mackenzie Panel expanded on the Voisey's Bay statement of the fundamental test. Prior to the beginning of its hearings, the Panel stated:

¹¹ Newfoundland and Labrador, Government of, Government of Canada, Innu Nation and Labrador Inuit Association, *Memorandum of Understanding: environmental assessment of the proposed Voisey's Bay mining development*, 31 January 1997.

¹² Voisey's Bay Mine and Mill Environmental Assessment Panel, *Environmental Impact Statement Guidelines for the Review of the Voisey's Bay Mine and Mill Undertaking*, 20 June 1997, s.3.3

¹³ Voisey's Bay Mine and Mill Environmental Assessment Panel, *Report on the Proposed Voisey's Bay Mine and Mill Project*. March 1999, <http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=0A571A1A-1&xml=0A571A1A-84CD-496B-969E-7CF9CBEA16AE&offset=2&toc=show>.

¹⁴ Kemsess North Joint Review Panel, *Panel Report: Kemsess North Copper-Gold Mine Project*, 17 September 2007, <http://www.acee-ceaa.gc.ca/052/details-eng.cfm?pid=3394>, p.xi.

¹⁵ *Ibid.*, pp.234-245.

In preparing for public hearings, the Proponent, Interveners and other participants should be aware that the Panel will evaluate the specific and overall sustainability effects of the proposed project and whether the proposed project will bring lasting net gains and whether the trade-offs made to ensure these gains are acceptable in the circumstances.¹⁶

As well, the Mackenzie Panel dedicated one of its early hearing sessions to consideration of a sustainability-based framework for the assessment review. From the outset, the framework combined attention to generic requirements for progress towards sustainability with a focus on issues of particular importance for the case and context at hand. It was gradually elaborated in the course of the hearings and the subsequent Panel deliberations, and is set out in detail in the Panel's report.

The Mackenzie Panel's concluding analysis considers a range of project possibilities – the null alternative (no project), the project as filed (development of three gas fields and pipeline facilities initially carrying 0.83 billion cubic feet of gas per day), and further development and project expansion scenarios up to and beyond what would deliver 1.8 Bcf/d of gas, in each case with and without implementation of Panel recommendations on a hosts of particular matters. For each project possibility, the Panel assessed the overall potential for a positive contribution to sustainability in light of effects in 36 key issue areas in five core categories:

- cumulative impacts on the biophysical environment;
- cumulative impacts on the human environment;
- equity impacts (fair distribution of benefits and risks);
- legacy and bridging impacts;
- cumulative impacts management and preparedness (capacities for managing the risks and opportunities).¹⁷

As well the Panel considered how the various effects might interact (positively and/or negatively) and what trade-offs would remain.

On the basis of its analysis, the Mackenzie Panel concluded that the project could make a positive contribution to sustainability, if its recommendations were fully implemented. Significantly, the recommendations were directed at least as much to governments as to the project proponents, and emphasized overall planning and management including careful attention to the pace and scale of induced and other associated development.

The Panel's five core categories for sustainability-based analysis merit particular notice for several reasons. First, while they cover all the standard broad sustainability concerns, they were specifically developed for the particular case and place. Second, they clearly focus on cumulative effects as the central practical concern. This approach is clearly preferable to earlier traditions that treated cumulative effects as a consideration separate

¹⁶ Mackenzie Gas Project Joint Review Panel, "Determination on Sufficiency," 18 July 2005.

¹⁷ Mackenzie Gas Project Joint Review Panel (2009), *Foundation for a Sustainable Northern Future*, December 2009, <http://www.ngps.nt.ca/report.html>, esp. chap. 19.

from the main task of assessment. It is also especially important in cases where a variety of other significant associated, induced and coincidental activities are reasonably anticipated. Third, equity effects, which rarely receive much notice in environmental assessments, are given prominent status. Fourth, special attention to legacy effects recognizes not only the general sustainability obligations to future generations but also the particular challenges posed by non-renewable resource undertaking that can contribute to sustainability only by serving as a bridge to a more sustainable future. Finally, the fifth category, centred on capacities, signals recognition that capturing transitory opportunities, anticipating and managing adverse effects, dealing with surprise, and ensuring lasting positive effects are demanding challenges even for highly experienced and well-resourced regions and present much greater difficulties when the cumulative pace and scale of developments are allowed to expand beyond what the relevant communities and governance institutions can handle effectively.

All of these considerations appear to be appropriate for, indeed central to, a reasonably comprehensive and credible assessment review in the case of the Northern Gateway pipelines project. It is convenient that so much of the trail-blazing has been done already and that the essential base of experience and precedent is in place.

Sustainability-based assessment for the Northern Gateway case

Key lessons from past experience

For the Northern Gateway case, two main implications can be drawn from the record of sustainability-based assessments in Canada, particularly the work of the four previous Panel reviews that applied the “contribution to sustainability” test.

The first implication is that intention to apply the “contribution to sustainability” test, and to develop an explicit, context-specified framework for the analysis, should be stated as clearly as possible early in the process, certainly before hearings begin. This is in part so that all of the participants know what is expected and can make their contributions accordingly. But it is also important to allow for due deliberation in the development of an analytical framework that is properly respectful of the particulars of the case.

The second, related implication is that adoption of a sustainability-based approach makes a substantive difference in the character of the review. This is most obvious in the shift from mere mitigation to lasting overall positive contributions. But applying the contribution to sustainability test clearly also affects the establishment of more detailed assessment criteria and the character of those criteria (as is evident in the five main categories used by the Mackenzie Panel). And it affects determinations about what matters are within the proper scope of review and which ones merit particular emphasis or demand only a general understanding.

The clearest and possibly the most demanding example of a consideration that is particularly significant in sustainability assessments is long term or legacy effects.

Perhaps merely by coincidence, all four of the Panel cases surveyed above were, like the Northern Gateway case, based on exploiting a non-renewable resource. Such projects cannot themselves be sustainable. They can contribute to sustainability only through a positive legacy. Minimizing residual damage upon abandonment is desirable, but does not deliver a positive legacy. Moreover, it does nothing to compensate for the depletion of the initial resource.

For such undertakings, contribution to sustainability requires reasonable grounds for confidence that enough of the project-related opportunities, revenues and others benefits are captured and applied in building lasting gains – sustainable livelihoods, strong communities and resilient ecosystems that will thrive after the project is done. This entails designing (and assessing, approving and managing) resource depletion projects as bridges to more desirable futures. Such bridge construction does not occur automatically. If it did, we would not now be debating routes to sustainability. It is unlikely ever to be accomplished by proponents, or governments, alone. And there are not yet many examples of how to do it well. But while sustainability-based assessment reviews cannot be expected to deliver immediately brilliant accomplishments in bridging and legacy building, they are a valuable vehicle for careful attention and gradual improvement in an increasingly important area that is ignored in mitigation-centred assessment.

Because the substantive implications of adopting the contribution to sustainability test will be clarified through the hearings and other process deliberations, it is not reasonable to expect a Panel to spell these out in detail at the outset. In the interests of transparency and efficiency, however, it would be helpful for the Northern Gateway Panel to clarify its intention to apply the contribution to sustainability test, and to identify the key areas of resulting attention. For that, a good starting point is the set of core issue categories adopted for the similar Mackenzie Gas project assessment review.

Consistency with current guidance

As the Panel has noted in its response to proposals about including sustainability effects in the List of Issues for the assessment review, the review's statutory foundations in the CEEA and NEB Acts clearly support application of a sustainability-based approach. The obligation to evaluate in light of the broad public interest to determine "public convenience and necessity" recognizing economic, environmental and social considerations would seem to be equivalent to an obligation for sustainability-based assessment, at least now that sustainability concerns are globally recognized and sustainability commitments have been made by most relevant authorities. Certainly, the scope of consideration required by the obligation to evaluate "public convenience and necessity" covers the scope for sustainability assessment.

In addition, various elements of the Panel's Terms of Reference point to a sustainability centred agenda. These include the explicit addition of required attention to "measures to

enhance any beneficial environmental effects”¹⁸ and the directive to “have regard to” the contents of the NEB Filing Manual, as amended,¹⁹ and the CEEA supplementary “Scope of the Factors” document.²⁰

The CEEA scoping document, released in August 2009, is mostly focused on the project’s marine component. However, it also includes a general section on sustainable development:

A purpose of the *Canadian Environmental Assessment Act* (the Act) is to encourage responsible authorities to take actions that promote sustainable development and thereby achieve or maintain a healthy environment and a healthy economy. Sustainable development seeks to meet the needs of present generations without compromising the ability of future generations to meet their own needs. The objective of sustainable development is to achieve a balance between preserving environmental integrity, ensuring social equity and improving economic efficiency. The proponent shall strive to integrate and balance this objective within its application, and clearly outline how it has been incorporated.²¹

The most recent update of the NEB Filing Manual addresses sustainability assessment, and is accompanied by an explanation of the Board’s approach. The explanation, released subsequent to the Panel’s latest iteration of the Procedural Directive, reads as follows:

The Filing Manual reflects the Board’s approach to the assessment of sustainability (including, for example, a greater incorporation of benefits, project alternatives and “no-go” considerations), as well as on assessment of significant adverse environmental effects of a specific project, as required by the CEA Act.

The Board has a responsibility under the NEB Act to evaluate whether a project is in the public interest. The public interest is inclusive of all Canadians and refers to a balance of economic, environmental and social issues that change as society’s values and preferences evolve over time.

In light of its public interest mandate, sustainability for the Board means that the Board will integrate the environmental, social and economic considerations when choosing a course of action within the context of our mandate. In so doing, the Board must ask itself: to what extent is Canada better off, or worse off, overall, by choosing this course of action? This includes consideration of project and

¹⁸ J. Prentice and G. Caron, *Agreement between the National Energy Board and the Minister of the Environment concerning the Joint Review of the Northern Gateway Pipeline Project*, 2009, p.11.

¹⁹ NEB, *Filing Manual*, 2004, revised 19 May 2011, <http://www.neb-one.gc.ca/clf-nsi/rpblctn/ctsndrgltn/flngmnl/flngmnl-eng.html>

²⁰ Canadian Environmental Assessment Agency, *Scope of the Factors – Northern Gateway Pipeline Project*, August 2009, <http://www.ceaa.gc.ca/050/documents/44033/44033E.pdf>

²¹ *Ibid.*, p.2.

cumulative effects during and after pipeline construction, and of any legacy effects that persist through operation and abandonment. The Board is also obligated to determine whether a project is likely to cause significant adverse environmental effects under the CEA Act.

As part of its environmental and socio-economic assessment of a project, the Board considers a “no-go” alternative. It is the Board’s view that this assessment is not the responsibility of the applicant to undertake. Rather, the Board must assess whether a project should proceed, following a consideration of the evidence before it, and the predicted negative and positive effects over the entire life of a project. By providing complete and detailed information, the applicant and the other parties contribute to the Board’s assessment process and enable the Board to assess the “no-go” alternative.²²

The language of the NEB’s explanation indicates that the Panel is not merely empowered but also obliged to take a sustainability-based approach to the assessment, and to consider to what extent Canada is “better off, or worse off, overall” if the project is approved.

Proponent recognition of the contribution to sustainability requirement

In its May 2010 application, Enbridge Northern Gateway Pipelines noted the sustainability requirements that came with establishment of the Panel and stated:

Sustainability is an integral component of the public interest mandate conferred upon the NEB and concurs with Enbridge’s Corporate Social Responsibility commitments.²³

The proponent also recognizes the inevitability of some adverse environmental effects and the need at least to counterbalance these negative effects with positive sustainability contributions. Accordingly, the application includes discussion of a set of initiatives meant to bring “lasting benefits for communities along the pipeline route and in coastal areas close to project-related shipping.”²⁴

While the potential adequacy of these and other initiatives remains to be examined, the proponent has accepted that the relevant test is based on contribution to sustainability, not just mitigation of adverse effects.

²² NEB, *Conclusion of Filing Manual Revision – Environmental and Socio-Economic Assessment*, 19 May 2011, http://www.neb-one.gc.ca/clf-nsi/rpbctn/ctsndrgltn/flngmnl/nb2011_05_19-eng.html, p.5

²³ Enbridge Northern Gateway Pipelines, *Enbridge Northern Gateway Project Sec. 52 Application, Volume 1: Overview and General Information*, 11 May 2010, <http://www.northerngateway.ca/public-review/application> and <https://www.neb-one.gc.ca/ll-eng/livelink.exe?func=ll&objId=624798&objAction=browse&sort=name>, page 1-5.

²⁴ *Ibid*, pp.1-6 to 1-9

Limitations of the current Procedural Directive as a guide for a sustainability-based assessment review

Considered in light of the evident requirements for adoption and application of a sustainability-based approach to the review, the current *Procedural Direction* is problematic in several specifics. In fairness, it should be reiterated that the current version of this document was not informed by the clarification accompanying the latest *NEB Filing Manual*, and the Panel may be proceeding to clarify how it intends to use its recognized authority to assess contribution to sustainability. Nevertheless, some key points merit attention here.

Discussion in the paragraphs above has covered the general problems centred on the absence so far of

- a commitment to organize the assessment review around application of the positive contribution to sustainability test;
- an intent to identify the major categories of sustainability-related issues and to develop and apply an analytical framework using sustainability-based evaluation and decision criteria;
- clarification on how adoption of a sustainability-based approach will affect the specifics of review scope and focus, relevant alternatives, appropriate areas for findings and recommendations, including matters such as legacy effects.

All of these current deficiencies merit attention.

In part to illustrate what is needed, the following discussion will examine a set of important matters related to the scope of considerations to be addressed in a sustainability-based assessment, with particular regard for cumulative effects, and related implications for other comparative evaluation of alternatives.

Cumulative effects and scope in a sustainability-based assessment review

In response to concerns about initial guidance on considering cumulative effects, the Panel's January 2011 revision of its *Procedural Direction* included an attempt at clarifying the approach to cumulative effects assessment.²⁵ Unfortunately, that discussion is not consistent with the terms of reference and other positions taken in the *Procedural Direction* document. Moreover, it relies on an outmoded conception of cumulative effects, and seems not to have taken into account the basic requirements for sustainability-based assessment following the NEB and CEAA guidance. Since cumulative effects are the major impact concern and since further clarification is

²⁵ Joint Review Panel for the Enbridge Northern Gateway Project, *Panel Session Results and Decision [concerning the Procedural Directive]*, 19 January 2011, pp.4-6.

apparently needed for this case in any event, there is good reason to consider what and how cumulative effects should be addressed in the Gateway Panel assessment review.

The Panel's current proposed approach to cumulative effects assessment, as set out in the January 2011 clarification, has at least three serious weaknesses. The most obvious problem is that, in conflict with other guidance, it appears to consider only the identification and mitigation of potential adverse effects, with no mention of beneficial effects, trade-offs or overall implications for progress towards sustainability. Second, the clarification material appears to assume that adverse project effects can and should be identified and suitable mitigation steps identified prior to consideration of the overall stresses that may be imposed by the project and other activities and projects on the social and ecological components and systems involved.²⁶ Finally, the intended approach appears to be very narrowly focused on specific adverse project effects that might combine with the specific adverse effects of other projects and activities. The Panel states, "Typically, future projects or activities are considered to be those for which formal plans or applications have been made."²⁷ The possibility and potential significance of the project inducing and facilitating other undertakings within the immediate project area are not recognized. The likelihood of the project inducing and facilitating other undertakings upstream of the project is also not recognized (though the Panel leaves open the possible consideration cumulative effects of the project and existing and proposed upstream activities).²⁸ Consideration of potential project contributions to effects downstream is rejected as "inappropriate and unmanageable."²⁹

Part of the difficulty here may lie in a common confusion about the relationship between assessment of the proposed project and its effects, and assessment of cumulative effects involving the project. Cumulative effects are in the end what matter to communities, ecosystems, economies, etc. Usually they are most evident, and most important, at a regional or larger scale and are most sensibly assessed at the strategic level. In practice, however, strategic level cumulative effects assessment is rare and responsibility for consideration of cumulative effects is left to project level deliberations. In Canada, under CEAA, project level attention to cumulative effects is mandatory.³⁰ The result, however, has been addition of cumulative effects considerations as a supplement to conventional project-specific assessment in a process that is centred on decision making about project approval. In their widely cited critique of cumulative assessment practice in Canada, Duinker and Greig state, "In our view, cumulative effects are the only real effects worth assessing in most EIAs." However, "[w]hat is usually done is 'normal' EIA first, and

²⁶ *Ibid.*, p. 5. See especially the illustrative figure provided. The inappropriateness of this approach is discussed in, for example, Peter N. Duinker and Lorne A. Greig. "The Impotence of Cumulative Effects Assessment in Canada: Ailments and Ideas for Redeployment," *Environmental Management* 376 (2006), p.157.

²⁷ Joint Review Panel for the Enbridge Northern Gateway Project, *Panel Session Results and Decision [concerning the Procedural Directive]*, " 19 January 2011, p.5.

²⁸ *Ibid.*, p.13.

²⁹ *Ibid.* p.14.

³⁰ CEAA, s.16(1)(a).

then a token CEA tacked on in a separate cumulative effects chapter of the main, EIA document.”³¹ The Panel’s intent may well not be to give cumulative effects only token attention. The approach presented in the January 2011 clarification, however, explicitly adopts the two separate steps that Duinker and Greig reject as scientifically inappropriate and practically inefficient because of failure to focus on the most important concerns.

The desirable alternative is illustrated in the approach that was incorporated in the sustainability-based review undertaken by the Mackenzie Gas Project Panel. In its analysis, the Mackenzie Panel chose

- to put cumulative effects at the centre of the project assessment (e.g. through adoption of key issues and decision criteria categories centred on cumulative effects, as discussed above);
- to recognize that some important cumulative effects will extend beyond the boundaries of the project itself (because of upstream and downstream influences of various kinds);
- to use the findings about cumulative effects in the analysis of alternatives, the determination of project acceptability and the identification of desirable mitigation and enhancement measures specific to the project (e.g. as needed for the conditions of licensing, if approval is appropriate); and
- to use the findings about cumulative effects also to identify broader policy, planning and management needs to be addressed by parties other than the proponent.

That approach has the advantage of beginning with the core question of whether the project might make an overall positive contribution to sustainability, or in the NEB’s words, “to what extent is Canada better off, or worse off, overall, by choosing this course of action?” It uses this question as the basic guide in identifying the key issues (what concerns about adverse effects, what needs and aspirations for correction of problems and enhancement of wellbeing, how best to use opportunities, what adequacy of capacities to capture gains, avoid risks and deal with surprise, etc.), the relevant project-related options (alternatives to and alternative means), and the relevant broader areas of strategic importance and possible response (especially major categories of potential cumulative effects with implications beyond the project alone).

The result clarifies the relationship between the scope of the project and the scope of cumulative effects that merit consideration in the assessment review. For the Northern Gateway case, it means that the scope of the project need not be expanded to permit suitably comprehensive attention to the relevant cumulative effects, including those related to upstream and downstream developments.

A final key point here is that cumulative effects assessment inevitably involves challenges in providing reasonably reliable prediction of potential results from the interactions of effects from multiple activities, some of which are themselves difficult to predict with confidence and detail. Interactive effects in complex systems are not well

³¹ Peter N. Duinker and Lorne A. Greig. “The Impotence of Cumulative Effects Assessment in Canada: Ailments and Ideas for Redeployment,” *Environmental Management* 376 (2006), p.157.

understood, and may be inherently beyond fully confident prediction. Future economic realities, and associated activities, represent one realm of such interactive complexities and predictive challenges. At the same time, inattention to cumulative effects simply on the grounds that they cannot be predicted with convenient accuracy is irresponsible. The costs of failure to anticipate adverse effects and opportunities for important gains are too high.

The path of reason in these circumstances is open to debate in light of the specifics of particular cases. In general, however, the objective is to be realistic and precautionary and to contribute to sustainability. That entails best efforts to identify what is likely and possible, given what is known about current conditions and trends, what has been proposed, what is reasonable to anticipate, what is potentially at risk and what is open to improvement. It involves recognition that detailed understanding will often be impossible to obtain, too costly to pursue and unnecessary for the purposes. Most importantly, sustainability-based cumulative effects assessment is not aimed merely at identifying particular mitigation needs. It also serves to illuminate future possibilities to facilitate informed choices about the options available (or the need to develop new options).

Official guidance for cumulative effects assessment has been steadily moving towards this broader approach. The initial bias in Canadian cumulative effects assessment guidance issued in 1994 was to focus narrowly on past and present activities plus future undertakings already approved or in the approval process.³² In 1999, however, the official CEAA guidance was expanded to recognize the importance of also considering “reasonably foreseeable” projects and activities and identifying “the most likely future scenario.”³³ The most recent CEAA operational policy statement on cumulative effects assessment (2007) confirms the emphasis on reasonable understanding of future effects:

To better reflect the broad objectives of the Act, the Agency position has evolved to include "certain" and "reasonably foreseeable" projects and, where appropriate those projects that are "hypothetical". This position is also consistent with the "best practices" approach of the Practitioners Guide.³⁴

Scenario-based cumulative effects assessment, mentioned in the 1999 guidance, is also increasingly adopted in practice, including Panel reviews.³⁵ One advantage is that the scenarios are not limited to depicting the range of most likely futures and associated

³² See for example the oldest CEAA guidance: Federal Environmental Assessment Review Office, *Addressing Cumulative Environmental Effects: A Reference Guide for the Canadian Environmental Assessment Act* (Hull: FEARO, 1994), esp. p.5.

³³ See G. Hegmann *et al.*, *Cumulative Effects Assessment Practitioners Guide* (Hull: CEAA, 1999), pp.18-20.

³⁴ CEAA, “*Operational Policy Statement: Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act*” (Ottawa: CEAA, 2007), <http://www.ceaa.gc.ca/default.asp?lang=En&n=1F77F3C2-1>, p.3

³⁵ Mackenzie Gas Project Joint Review Panel (2009), *Foundation for a Sustainable Northern Future*, December 2009, <http://www.ngps.nt.ca/report.html>, esp. chap. 18.

cumulative effects. They can also be used to consider worst case scenarios, which may be important factors in choosing among options and in preparing appropriate prevention and response capacities. In sustainability applications, scenarios are valuable tools for exploring desirable futures as objectives for planning as well as regulatory approvals, and for use in backcasting exercises centred on identifying feasible pathways between current and desired future conditions.³⁶

Considering sustainability-related cumulative effects in the Northern Gateway Panel review

For the practical purposes of the Northern Gateway review, the implications of the discussion above are best illustrated through examples of cumulative effects considerations likely to be important in the case. The following discussion is not informed by a careful review of the case specifics – the major current and anticipated issues, the attractive and worrisome aspects of the proposed project or the range of other projects and activities that may contribute to positive and negative cumulative effects. The intent is merely to indicate the character of matters to be addressed. While the lists of issue areas are not comprehensive or even likely to include most of the big items, they should convey the range involved. In each case the cumulative effects are the interactive effects of multiple projects and activities (including associated opportunities and risks, and both internal and external factors such as revenue flows, policy and programme responses, climate change, and concurrent shifts in other sectors) building on existing capacities, assets, stresses and vulnerabilities. Also in each case the effects of any additional induced activities are included.

Potentially significant, sustainability-related cumulative effects in the project area

From a sustainability perspective, the potential cumulative effects of greatest concern in the Northern Gateway project area are likely to fall into categories roughly similar to those used by the Mackenzie Gas Project Panel, though with some differences in specific issues. The project area as defined in the Panel's terms of reference stretches roughly from Fort Saskatchewan to Kitimat plus the marine component. The nature of and effects from past and present activities vary through the several regions encompassed by the project. Likely future projects and activities, including ones induced by the project or the project in combination with other projects and activities, also vary but would include further hydrocarbon exploration and development, new and expanded mines, associated infrastructure, indirect effects on and from other sectors, the extent of and uses made of resulting revenues and other opportunities by various authorities and other stakeholders, and new or expanded government programmes and other responses to changed needs, expectations and aspirations.

³⁶ See, for example, Lorne Greig and Peter Duinker, *Scenarios of Future Developments in Cumulative Effects Assessment: Approaches for the Mackenzie Gas Project*, prepared for the Joint Review Panel for the Mackenzie Gas Project, March 2007.

The listing below uses the Mackenzie Panel's general categories and presents in each category some illustrative sustainability-related issues that are likely to be significant in the Northern Gateway project area:

(i) Cumulative impacts on the biophysical environment – effects, especially longer term ones, on the resilience and desirable qualities of ecosystems and the delivery of ecosystem services, including considerations related to the following:

- disturbance effects on lands, habitats, water flows and quality, stressed and vulnerable ecosystems, species at risk, renewable resources, and special conservation areas;
- effects on the collective carbon footprint;
- effects of increased accessibility to fish, other wildlife, and other harvestable resources;
- effects on traditional Aboriginal harvesting possibilities and on other heritage resources;
- risk of damage (e.g. from spills) due to catastrophic accidents, technology failures, and vulnerability to significant weather and seismic events;
- combination of chronic and sudden contamination stresses, especially in water bodies;
- changes in land uses and land use options.

(ii) Cumulative impacts on the human environment – effects, especially longer term ones, on human wellbeing (recognizing social, economic, cultural and health related factors and their interrelations) from the family and community to regional and national scale, including considerations related to the following:

- changes in the nature, volume and location of direct and indirect employment opportunities;
- boom-bust effects especially related to brief but labour intensive construction versus operation phases (mitigated or exacerbated by multiple other projects depending on how well they are distributed over time);
- maintenance, strengthening or loss of traditional knowledge and other valued cultural components;
- positive and adverse individual, family and community effects of increased income (if temporary or continuous, locally earned or distant, etc.);
- effects on adequacy and quality of services (e.g. mental and physical health, transportation, security) in face of increased demands.

(iii) Equity impacts – effects, especially longer term ones, on the distribution of positive and adverse effects, including considerations related to the following:

- distribution of employment and business opportunities, revenues, services, burdens and responsibilities, influence in decision making, risks and vulnerabilities by region, jurisdiction, initial income quintile, gender, culture, age, generation, etc.;
- distribution of income from depletion of non-renewable resources in light of needs to address mitigation and transition requirements during the life of the project (or projects contributing to cumulative effects) and to retain resources (e.g. in a legacy fund) to meet needs after the resource revenue flow ends;
- effectiveness in reducing significant initial inequities;

- effects on the distribution of greenhouse gas generation benefits, mitigation obligations and adverse climate change effects (by income, region, generation, etc.);
- effects on overall equity of distribution of income and opportunity.

(iv) Legacy and bridging impacts – effects lasting beyond the lifetime of the project, with particular attention to the non-renewable nature of the resources involved and the obligation to use these resources as a bridge to more sustainable futures, including considerations related to the following:

- extent and effectiveness of the use of revenues and opportunities from the project and other renewable resource undertakings contributing to cumulative effects, to build sustainable social and ecological systems and wellbeing locally and regionally before the project ends;
- effects on the capacities of governance participants (individuals, families, communities, regional and larger scale agencies and institutions, private firms and non-government organizations) to capture and retain potential benefits from the project and other activities, to mitigate and manage adverse effects, to identify and pursue opportunities for positive transition, and to deal with surprise;
- effects on the lasting integrity and resilience of ecosystems, livelihoods, communities, traditions of innovation and mutual aid, and other foundations for shared wellbeing;
- effects on post-project availability of resources for response to continuing adverse effects and incomplete transition;
- potential displacement of any significant lasting adverse effects to future generations.

(v) Cumulative impacts management and preparedness – the readiness of governance participants, especially government agencies with relevant responsibilities, to anticipate and manage the nature and flow of cumulative effects, enhancing the positive ones and mitigating the adverse ones, including considerations related to the following:

- ability of governance bodies to influence the pace and scale of activities that generate cumulative effects (positive and adverse) and keep cumulative effects within their capacities for effective management;
- ability of communities and regions to capture benefit opportunities;
- adequacy of government, proponent and community capacities for designing and implementing appropriate ecological and socio-economic monitoring programmes for multiple projects and activities;
- adequacy of capacities for evaluating and responding to emerging adverse effects.

Potentially significant, sustainability-related cumulative effects beyond the project area

The potential cumulative effects of the Northern Gateway project in combination with other projects and activities are likely to extend beyond the immediate project area. Some of these effects, most notably effects on atmospheric concentrations of greenhouse gases and on prospects for adequate emission reductions, contribute to global concerns. At a national and provincial scale, the proponent and others have emphasized anticipated

project revenue effects on industry and government revenues and on employment.³⁷ These effects are broadly recognized as relevant to the assessment of the proposed undertaking and they contribute to the project's reasonably anticipated cumulative effects.

From a sustainability perspective, the revenue effects would need to be examined with some care, taking into account, for example, matters of timing, distribution and use, and questions about the extent to which non-renewable resource revenues should count as income rather than capital depletion. Similar care would be appropriate in considering employment, greenhouse gas and other larger scale cumulative effects. All of them however, would seem obviously to qualify as significant, sustainability-related cumulative effects largely beyond the Northern Gateway project area.

Two topics of some complexity involving potentially relevant cumulative effects beyond the recognized project area centre on upstream and downstream cumulative effects – that is, effects related to the sources of pipeline throughput supply and effects in the markets receiving the throughput commodities. Consideration of these matters is complicated by many factors, not the least of which is the involvement of two pipelines with throughput flowing in opposite directions – one to transport diluted bitumen from Alberta to the Pacific Coast and the other to transport gas condensates from the Pacific Coast to Alberta.

For that reason the following discussion will examine cumulative effects contributions in Canada, especially Alberta, beyond the project area and cumulative effects contributions outside Canada on the Pacific Rim, rather than “upstream” and “downstream” effects.

Potentially significant sustainability-related cumulative effects in Canada, especially Alberta

Contributions to the cumulative effects of the Northern Gateway pipelines in Canada beyond the project area turn mostly on the question of what projects and activities (especially those related to bitumen extraction, dilution and transport to the eastern terminus of the project) would be induced or at least facilitated by the pipelines.

In the Panel's view, such projects and activities are not to be considered part of the project itself, however, their potential contributions to cumulative effects with the project remain relevant.³⁸ As contributions to the project's cumulative effects, induced and facilitated actions in Alberta may be factors in the overall determination of the acceptability of the project as proposed (i.e., whether it will make a positive contribution to sustainability and meet the test of public convenience and necessity) and in judgements about what conditions need to be met if the project is to be approved (i.e., what

³⁷ Enbridge Northern Gateway Pipelines, *Enbridge Northern Gateway Project Sec. 52 Application, Volume 1: Overview and General Information*, 11 May 2010, pp.1-4, 11-1.

³⁸ Joint Review Panel for the Enbridge Northern Gateway Project, *Panel Session Results and Decision [concerning the Procedural Directive]*, ” 19 January 2011, pp.5-6, 12-13.

requirements are to be imposed on the proponents in accompanying permits and licences; what actions are needed from governments on related plans and programmes, fiscal arrangements, monitoring programmes, etc.; and, perhaps, what joint or multi-stakeholder commitments must be in place before the project proceeds).

A key initial consideration is the extent to which the Northern Gateway project would induce and facilitate upstream development, including more or different extraction and treatment of bitumen resources to ship via the oil pipeline. Induced and facilitated projects and activities are closely related and typically intertwined. Generally, induced actions are ones that likely would not occur, at least not so soon (and therefore not in the same circumstances or with the same effects), without the project. Facilitated actions are ones that would not occur in the same way and with the same effects without the project.

Induced development and facilitation effects are clearly anticipated by the proponent and others. Among the significant benefits predicted by the proponent in its justification of the project are substantially higher oil (diluted bitumen) prices for producers, resulting from access to Pacific Rim markets.³⁹ This would bring higher returns for producers and consequently for governments, and provide an incentive for new, larger and earlier investment in additional development and production. As well, the proponent reports expected shortages in condensate and states that “additional sources of condensate will be required to sustain the forecasted growth in bitumen production.”⁴⁰ If those assertions are accurate, the project would play a crucial role in permitting currently anticipated bitumen production expansion as well as an incentive for further expansion.

Details about the extent and timing of these effects, how they may interact with other reasonably foreseeable factors and what specific effects would be reasonably attributed to the Northern Gateway project are not likely to be open to confident prediction. But details on these matters are not required for the broad purposes of identifying and evaluating cumulative effects relevant to project approval and related recommendations. For broad sustainability effects determination, the key Alberta issues are not effects at the individual project level, but at the level of overall pace and scale, timing and associated general effects. For that the appropriate approach to cumulative effects assessment would seem to involve identification of most likely future scenarios, as suggested by CEAA’s 2007 operational policy statement on environmental assessment.⁴¹

The related cumulative effects most likely to be important to considering the project’s sustainability contributions would include general effects in the five categories used to group potential cumulative effects within the project area: effects on the biophysical environment, on the human environment, on equity, on legacy and bridging and on

³⁹ Enbridge Northern Gateway Pipelines, *Enbridge Northern Gateway Project Sec. 52 Application, Volume 1: Overview and General Information*, 11 May 2010, p.1-3.

⁴⁰ *Ibid.*, p.5-2. See also pp. 3-1 and 11.1.

⁴¹ CEAA, “Operational Policy Statement: Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act” (Ottawa: CEAA, 2007), p.2

management and preparedness. Considerations peculiar to effects related to induced and facilitated actions in Alberta would include the following:

(i) Cumulative effects related to the higher price of oil anticipated through provision of access to Pacific Rim markets, including

- higher revenues and profit margins for existing producers and greater incentives for new and expanded development and consequently more or at least earlier extractive and other associated activities, all else equal;
- benefits associated with higher revenues;
- equity effects of the distribution of these revenues;
- more questions about the pace of resource depletion, and the distribution and uses of the revenues, from a sustainability perspective;
- additional demands on capacities to manage effects and capture benefits.

(ii) Cumulative effects related to additions to the overall pace and scale of bitumen extraction and associated activities and resulting effects (perhaps best identified under the five categories above) including

- quicker generation of revenues and revenue use issues;
- additional employment effects;
- increased greenhouse gas generation directly and indirectly through greater path dependency related to the deeper commitment to a relatively high carbon energy source;
- increased generation of wastes, and loadings of surface and groundwater contaminants and air pollutants;
- stresses on ecosystems, communities, services, managerial capacity, etc.

(iii) Cumulative effects on timing of activities in a turbulent extractive sector, including how more and earlier extraction undertakings would affect

- boom and decline cycles and extremes;
- vulnerability to and negative effects of currently inadequate solutions to significant technology challenges related to carbon intensity and overall net greenhouse gas emissions, energy return on energy investment, site reclamation, water quality and use effects;
- attention to energy sector transition needs to resolve major public policy issues concerning how best to reduce/eliminate carbon, discourage wasteful uses and enhance efficiencies, build system resilience, etc.
- legacies, including more rapid depletion of the most accessible bitumen deposits, and more rapid generation of carbon emissions and other wastes prior to anticipated future technological improvements.

Potentially significant sustainability-related cumulative effects in the Pacific Rim outside Canada

Greater challenges are involved in identifying and evaluating possible project-related effects outside Canada that may contribute to the project's cumulative effects. Certainly there will be some contributions. The project centres on facilitating the export of diluted bitumen from Canada and the import of gas condensates into Canada. It is reasonable to

conclude that the buyers of the diluted bitumen and the sellers of the gas condensates anticipate positive financial effects for their interests. And no doubt there will be other effects associated with the import from Canada, refining and use of the diluted bitumen, and with the extraction, preparation and export to Canada of the gas condensates. The difficulties arise in determining at least roughly what the particular and overall effects may be.

The point of inquiry into these matters is to inform description and evaluation of the cumulative effects of the project for the purposes of determining whether the project as proposed is likely to have positive overall sustainability effects and whether some alternative (including the null option and different timing, scale and pace of project implementation) may be preferable. The relevant Canadian authorities lack the means to require enhancement of positive effects or mitigation of adverse effect outside Canada (other than through the indirect effects of approving or rejecting the project proposal or favouring some alternative). Reasonably anticipated effects outside Canada are, however, contributions to the project's cumulative effects and may be significant enough to influence the overall evaluation of the project and alternatives, specifically whether or not a positive contribution to sustainability can be expected.

For practical cumulative effects assessment purposes, the key initial question about potential outside Canada effects is which of these effects can be delineated clearly enough to contribute to a responsible assessment of the project cumulative effects. The Panel has noted the uncertainties surrounding the end uses of the exported oil and related effects on energy use in recipient markets.⁴² Important uncertainties apply also to the prediction of effects related to the supply of gas condensates from outside Canada. Additional difficulties are raised by the need to consider not only the effects resulting from the use of the oil exported and the supply of the condensates imported through the project, but also how these effects would compare with those of the null option (no project) and other reasonable alternatives (e.g. the project with different timing, pace and/or scale). The extent to which adequately supported conclusions can be drawn about these effects in the various areas of cumulative effects concern remain an open question. But insofar as parties to the hearings are able to establish adequately supported conclusions about these effects, they certainly merit inclusion in the Panel's overall analysis.⁴³

As with in-Canada effects beyond the project area, the related outside-Canada contributions to cumulative effects that are likely to be important in considering the

⁴² Joint Review Panel for the Enbridge Northern Gateway Project, *Panel Session Results and Decision [concerning the Procedural Directive]*, 19 January 2011, p.14.

⁴³ While the Panel has expressed doubts about the possibility of delineating outside Canada effects for detailed analysis, it seems to have accepted the appropriateness of considering both outside Canada effects and in Canada beyond the project area effects insofar as they may contribute to project-related cumulative effects: "we will not consider the environmental effects of oils sands projects or the consumption of oil in market destinations beyond the potential for cumulative effects with the Project." *Ibid.*, p.6.

project's implications for sustainability would include general effects in the five categories used to group potential cumulative effects within the project area: effects on the biophysical environment, on the human environment, on equity, on legacy and bridging and on management and preparedness. Considerations peculiar to effects related to induced and facilitated actions beyond Canada would include the following:

- (i) Cumulative effects on biophysical systems and related resources, goods and services and related human systems and interests, including overall effects on
 - GHG emissions contributing to already excessive and still growing global loadings, including contributions to the overall lifecycle emissions attributable to the hydrocarbons transported in the pipelines;
 - contamination, disturbance, increased spill risk and other effects related to ocean and other transport, land use change, refining, subsequent consumptive end and associated activities, including spill potential, contributing to global concerns about biodiversity decline and other already excessive and still growing human stresses on the biosphere;
 - current preparedness and prospective capacities to manage anticipated effects and inevitable surprises.

- (ii) Cumulative effects on the distribution of benefits, opportunities, damages and risks, including intra- and inter-generational equity effects of
 - the likely distribution of near term gains and longer term losses from depletion of these non-renewable resources;
 - any additions to the vulnerabilities and other disadvantages of populations already facing insufficiency and insecurity, threats to health, and/or inequality of opportunity losses including risks.

- (iii) Cumulative legacy effects of entrenching long term commitment to continuation of oil-based energy systems in the extracting, receiving, refining and using nations and regions, including effects on
 - reliance on a relatively high carbon source;
 - depletion of non-renewable resources;
 - the pace of transition to low-carbon energy options;
 - GHG emissions from the outside Canada portion of the product lifecycle, including the extraction of gas condensates and the refining and subsequent use of oil products.

Cumulative legacy effects

Sustainability-based assessment is not only about the long term – enhancement of near term wellbeing and avoidance of immediate hazards are also important. But all serious sustainability-based reviews must pay careful attention to effects on future generations. This obligation to consider legacy effects applies in special ways to undertakings that have a limited life expectancy and consequently an anticipated point of decommissioning and closure. Additional considerations apply to undertakings based on the extraction and consumptive use of non-renewable resources. In such cases, the legacy includes resource depletion as well as the residual effects of the undertaking itself.

In all cases, a positive contribution to sustainability requires durable benefits. In the words of the Mackenzie Gas Project Panel, quoted above, the objective and test is the delivery of “lasting net gains”. In assessments of time-limited undertakings, the usual issues include whether ecological integrity will be impaired or maintained (or rehabilitated, if the baseline environment was degraded); whether communities will be left stronger or weaker; whether the remaining local and regional livelihood foundations will be more abundant and diverse or more limited and vulnerable, despite the end of the project and the loss of whatever jobs and other opportunities were associated with it; and in some instances whether or not the provincial, national and global scale results will bring us closer to sustainability.

Attention to such matters has become more common in recent assessment work, perhaps in part due to the influence of sustainability-based Panel reviews of other major mining and hydrocarbon projects in Canada in recent years (see above). Certainly the proponents of the Gateway project have recognized at least some of these concerns in their application. Their summary discussion of sustainable development implications reports a variety of initiatives intended to foster lasting benefits extending beyond the life of the project.⁴⁴ Whether or not those initiatives may be sufficient to ensure enduring gains is a matter for examination in the Panel’s review.

Special considerations related to projects centred on the depletion of non-renewable resources also apply to the Gateway case. Like the Mackenzie Gas Project, the Gateway case is based on facilitating activities leading to the depletion of non-renewable hydrocarbon resources. Logically, revenue from such depletion should not be treated as income flow but rather as the one-time cashing-in of an asset. For lasting benefits, the revenue, or at least a substantial portion of it, should be reinvested to establish sustainable livelihood alternatives for when the non-renewable resource is depleted and the capital asset is gone. This is the foundation for the concept of bridging, incorporated in the four major categories of considerations in the Mackenzie Gas Panel’s analysis: legacy and bridging impacts.

The legacy and bridging issues related to the Gateway project itself are illustrated above. As in the Mackenzie Gas Project case, it should be evident that appropriate responses to the legacy and bridging challenges depend not only on the proponent but also and no less significantly on the relevant governments, especially those receiving project-related revenues. Clearly, expectations for government action are not likely to be established through project licensing conditions. Panel analysis of the likelihood of a positive contribution to sustainability (and consequent public convenience and necessity) can, however, turn in part on evidence about whether or not governments have in place reliable means of capturing and using revenues and other benefits from the project in ways that protect and strengthen other assets, build durable livelihood alternatives, and

⁴⁴ Enbridge Northern Gateway Pipelines, *Enbridge Northern Gateway Project Sec. 52 Application, Volume 1: Overview and General Information*, 11 May 2010, pp.1-6 to 1-9.

establish other necessary capacities so that the one-time opportunity represented by the project is used as a bridge to a viable future for the relevant communities and jurisdictions. That applies also to the use of the energy resources involved as transition fuels, used to build a bridge to a more sustainable energy future. And the cumulative legacy and bridging effects include the contributions of positive initiatives and evident deficiencies related to the project, the transported resources and their lifecycle effects in Canada beyond the project area and outside of Canada.

Conclusions

1. Concerning the basic evaluation and decision criteria to be applied and consequently the framework for analysis to be applied by the Panel in this case

The Panel has recognized that it has firm legislated foundations for examining the sustainability effects of the proposed project and that sustainability considerations are relevant and significant in the assessment of public convenience and necessity of the proposed project. So far, however, the Panel has not confirmed to what extent and how it will adopt a sustainability-based approach to the review.

Panel confirmation that it will be examining sustainability effects and using sustainability as the organizing base for its analytical framework would be desirable. Indeed, it is difficult to see how else the Panel could build a suitably comprehensive and integrated framework for its mandatory evaluation of public convenience and necessity in this case. Sustainability is now the standard concept used for integrated attention to social, ecological and economic considerations, long term as well as short. Adopting a sustainability-based approach would meet the Panel's obligations and align the Panel's work on the established Canadian path of continuing advancement in sustainability-based environmental assessment reviews. Early confirmation that it is adopting this approach would give all parties in the process a clear understanding of the Panel's expectations, and add generally to the transparency and fairness of the proceedings. For the Panel itself, early clarification of its analytical approach should add to the efficiency of its work as well as the timeliness and defensibility of its conclusions.

Because several other joint review panels have already applied the "contribution to sustainability" test in major project assessment reviews, the essentials of what is required in a sustainability-based assessment are reasonably clear. The easily available generic criteria for evaluations and decisions need to be specified for the case and context, but previous panels, especially the Joint Review Panel for the Mackenzie Gas Project – also a pipeline-centred undertaking – have demonstrated well how to design and apply an appropriately specified sustainability-based analytical framework. Complexities are unavoidable but the work is manageable and there is no satisfactorily rigorous and credible alternative.

2. Concerning the scope of considerations to be addressed, with particular regard for cumulative effects

In the end, the effects that matter to ecosystems, communities and economies are the cumulative ones. How they are to be addressed is therefore crucial. The Panel's current general guidance on how it will approach cumulative effects is narrow, inconsistent with the terms of reference and other Panel statements, and incompatible with current thinking and practice in the field.

Further clarification of the Panel's general approach to cumulative effects is needed. The desirable approach requires four basic actions:

- put cumulative effects at the centre of the project assessment and integrate cumulative effects identification with the determination of key issues and decision criteria categories;
- recognize that some important cumulative effects will extend beyond the boundaries of the project itself (e.g. because of upstream and downstream influences of various kinds);
- use the findings about cumulative effects in the analysis of alternatives, the determination of project acceptability and the identification of desirable mitigation and enhancement measures specific to the project (e.g. as needed for the conditions of licensing, if approval is appropriate); and
- use the findings about cumulative effects also to identify broader policy, planning and management needs to be addressed by parties other than the proponent.

More specific clarification is needed concerning how contributory effects from undertakings in the project area and project-related upstream and downstream undertakings will be incorporated in the consideration of cumulative effects in this case. For illustrative purposes, the discussion above includes a rough and incomplete listing of potentially important cumulative effects in the project area, organized in five categories used by a previous panel (cumulative impacts on the biophysical environment, cumulative impacts on the human environment, equity impacts, legacy and bridging impacts and cumulative impacts management and preparedness). The review would benefit from a more rigorously developed and comprehensive list that also covers cumulative effects contributions from project-related upstream and downstream undertakings.

In its procedural directions statements so far, the Panel has held generally that for the purposes of the present assessment, project-related upstream and downstream undertakings are not part of the project but may be relevant to consideration of the cumulative effects of the project. The undertakings properly involved in this category include projects and activities that are induced and/or facilitated by the pipelines, marine facilities and related activities of the project but are outside Canada or beyond the defined project area in Canada.

Insofar as such undertakings can be identified as reasonably foreseeable, for example as elements of a most likely future scenario, they would meet the logical test for potential inclusion in cumulative effects assessment. The proponent has already incorporated attention to the effects of some such undertakings as central attractions in its justification

of the project. While details about specific design elements and particular effects of many reasonably foreseeable undertakings are likely to be limited, sufficient information may be available to permit identification of broad changes that may influence major cumulative effects considerations and have significant implications for the overall evaluations.

Again for illustrative purposes, the discussion above includes a rough and incomplete listing of potentially important contributions to cumulative effects from undertakings outside the project area. The broad categories include cumulative effects related to

- the higher price of oil anticipated through provision of access to Pacific Rim markets;
- additions to the overall pace and scale of bitumen extraction and associated activities;
- the timing of activities in a turbulent extractive sector, including more and earlier extraction undertakings;
- effects on biophysical systems (including climate) and related resources, goods and services and related human systems and interests;
- the distribution of benefits, opportunities, damages and risks, including intra- and inter-generational equity effects; and
- legacy implications of entrenching long term commitment to continuation of oil-based energy systems in the extracting, receiving, refining and using nations and regions.

All contributions to the project's cumulative effects are potentially relevant to evaluation of the project as proposed in comparison with reasonable alternatives including the null option. Indeed, cumulative effects, including contributions from outside as well as within the project area, should be the main considerations in determining whether the project as proposed will make a positive contribution to sustainability and meet the test of public convenience and necessity. Not all cumulative effects findings will have direct implications for specifying particular steps to mitigate or enhance project effects. But if the project in some form is found to be potentially worthy of approval, a broad understanding of contributions to cumulative effects will be needed to inform judgements about requirements to be imposed on the proponents (in accompanying permits and licences), about needed actions by governments (on related plans and programmes, fiscal arrangements, monitoring programmes, etc.), and, perhaps, about other joint or multi-stakeholder commitments that ought to be in place before the project proceeds.

The cumulative legacy effects of the project merit special attention. Legacy is inherently central in any assessment that recognizes contribution to sustainability obligations. It is particularly important in the case of a project designed to facilitate the extraction, marketing and use of non-renewable resources. In such cases, a positive legacy turns in part on how the gains from depletion of the current resource will be applied to foster a transition to more sustainable options.

On all of these matters, further Panel efforts to provide clear commitments would assist process participants and strengthen the review.