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Re BC Hydro Site C Clean Energy Project: Sustainability Assessment Framework

Further to our previous comments regarding the requirements for a thorough assessment of the net contribution of BC Hydro's proposed Site C Energy Project to sustainability, we are attaching a proposed framework for the Panel to consider and apply in its review.

The commitment to sustainable development or sustainability is embraced both in the purposes of the federal assessment law and in the proponent's own initial statement of principles at the beginning of the EIS (s.1.1.4). Panels that have applied sustainability-based assessment have done so in determining whether significant adverse environmental effects are justified and whether a proposed project results in lasting net positive gains. Approaches to sustainability assessments are documented in panel reports on the Voisey's Bay Mine, the Kemess North Mine, the Mackenzie Gas Project and the Lower Churchill Hydro Electric Generation Project. These reports represent the evolution of best practices in environmental assessment; the latter of these are approximate to the state of the art.

The panel report on the Lower Churchill Hydro Electric Generation Project clearly and succinctly stated the principal purpose of sustainability-based environmental assessment:

> *At the heart of the decision-making framework is the concept that the effects, risks and uncertainties of the Project should be fairly distributed among affected communities, jurisdictions and generations, and that the Project should result in net environmental, social and economic benefits. (Appendix 8; p. 352)*

In our view the attached framework would satisfy that purpose if adopted and applied by the Panel throughout the course of the review and in its determination of whether the project should be approved.

Thank you for your consideration.

Sincerely,

Ken Boon
President

Framework for Sustainability-based Assessment for the Site C Joint Panel Review[1]

Preface

Purposes

The sustainability assessment framework described in this document has been designed as a guide for evaluating the proposed Site C project in comparison with alternatives[2] including the null alternative of rejecting the Site C proposal and removing the related land use restrictions. As used here, the concept of "sustainability assessment" refers to an integrated and far-sighted approach to considering all of the important categories and interactions of factors relevant to lasting wellbeing. Progress towards sustainability is what decision making in the public interest should always deliver.

The framework is built on three assumptions:

(i) decision makers in this case face two essential questions in the public interest:

- would the proposed Site C project make a positive contribution to sustainability (in the region, in the province, and beyond), while avoiding significant adverse effects? and
- would implementation of the Site C project be more desirable than adoption of any one of the alternatives to it (including the null option)?

(ii) approval of the proposed project can be justified only if there is well-founded confidence that the answer to both questions is yes; and

(iii) the framework used for analyzing the potential effects of the proposed project and its alternatives must be designed to provide a comprehensive basis for answering the two essential questions above.

The framework's design is also intended to recognize

- the purposes of the federal and provincial environmental assessment legislation,
- the particular requirements of the *Environmental Impact Statement Guidelines* issued on 5 September 2012, and
- the Aboriginal and/or treaty rights that may be affected.

Sources

The structure and specific contents of the framework are drawn from

- the literature on general principles for assessment of undertakings proposed to serve the long as well as short term public interest, including positive contributions to progress towards sustainability as well as avoidance or mitigation of significant adverse effects;
- the issues globally identified as particularly important in cases of proposed major hydropower undertakings, including in the final report of the World Commission on Dams (2000);

[1] The framework was prepared by Robert B. Gibson, with contributions from Lindsay Staples, Rick Hendriks Anna Johnston, and others, for the Peace Valley Landowners Association and initially presented at a meeting of Yellowstone to Yukon Conservation Initiative, Treaty 8 First Nations and Peace Valley Environment Association on 7 December 2012.

[2] The Site C EIS Guidelines (BC/Canada 2012, 15-16) refer to analysis of alternatives to the project and alternatives means of carrying out the project. In both cases the alternatives to be examined are all to be "technically and economically feasible" and the alternatives are to be compared using explicit criteria. The required criteria for evaluation of alternatives to the project include those related to "environmental, economic and technical costs and benefits."

• precedents established in previous sustainability based assessments in Canada, especially those involving joint review panels with similar mandates, including criteria applied by these panels; and
• the most evident issues concerning the potential positive and adverse cumulative effects of the proposed Site C project, in its specific context.

Most directly and significantly, the framework builds upon the approach taken in the August 2011 final report of the Joint Review Panel for the Lower Churchill Hydroelectric Generation Project, "Appendix 8: Framework for determining whether significant adverse environmental effects are justified and whether the project should be approved" (JRP LCH 2011, 352-355). Some elements of the text below are taken directly from that document. The framework for Site C can also begin with the statement made by the Lower Churchill Panel in introducing its approach:

> At the heart of the decision-making framework is the concept that the effects, risks and uncertainties of the Project should be fairly distributed among affected communities, jurisdictions and generations, and that the Project should result in net environmental, social and economic benefits.

Structure
The framework proposed for assessment of the Site C project consists of two main components: basic guiding principles that apply to sustainability-based assessment anywhere, and more specific sustainability-based criteria for evaluations and decision making in this case.

The guiding principles for sustainability assessment are based on long and diverse experience. They represent a shared standard, or set of values, to guide the identification and evaluation of options for addressing important issues and opportunities. They should inform the full assessment process including the development of a proposal by a proponent and the reviews of the proposal by other interested parties, formal reviewers (in this case the Joint Review Panel in undertaking analyses of the presented evidence, and in reaching conclusions and recommendations), and the final decision makers.

The key concerns and criteria discussion is more closely focused on the issues to be addressed in this case and its context. The criteria complement the guiding principles by providing more specific guidance for evaluations and decision making in this case. In the framework outlined here, the criteria are grouped in six categories centred on goals for moving towards sustainability. For each criteria category or goal the framework identifies a set of questions that cover the major concerns in the category. Taken together the questions should ensure attention to the full range of sustainability-based factors and should be a solid basis for organizing evaluation of whether the project and alternatives have met the two essential tests set out above.

1. The basic principles

The following principles are adopted as a package to guide the evaluation of effects and options and underpin concluding judgments about whether the proposed project, with any associated terms and conditions, merits approval.

Best options (the overarching principle)
The final decision identifies the most desirable undertaking and project/planning details among the options available, including the null option, in light of the evidence available and the

uncertainties surrounding that evidence and the case in general. Desirability is determined through comparative examination of prospects for durable positive overall effects (contributions to progress towards sustainability) while avoiding risk of significant adverse effects, and minimizing trade-offs.

Maximum, mutually reinforcing, fairly distributed and lasting net gains
The selected option delivers net progress towards meeting all the requirements for sustainability, through cumulative positive effects that are mutually reinforcing and contribute to lasting benefits that enhance equity within and among generations. Progress towards sustainability requires positive steps in all areas, at least in general and at least in the long term.

Avoidance of significant adverse effects
The selected option avoids significant adverse effects on any component or relationship that is important for lasting wellbeing. No significant adverse effect can be justified unless the unavoidable alternative is a more significant adverse effect. Incomplete mitigation of a significant adverse effect is not acceptable if stronger mitigation or avoidance efforts are feasible.

Minimization of trade-offs
Because improvements in durable socio-economic wellbeing and long term biophysical stewardship are interdependent as well as crucial, trade-offs are undesirable. The burden for justifying any trade-off lies with the proponent of the activity that would entail the trade-off. Compromises can be acceptable only if they avoid further decline or risk of decline, or improve prospects for resolving problems, in areas of concern properly identified as global, national and/or local priorities.

Commitment to fairness
No current or future generation, and no geographic region, should bear an unreasonable share of the adverse effects, risks or costs of an approved undertaking or be denied a reasonable share of the benefits. Because future generations cannot be at the table to defend their interests, there can be no justification for displacement of significant adverse effects from the present to the future unless all other options involve worse prospects for the future.

Recognition of uncertainty
All evaluations and decision making must give explicit attention to the significance and implications of uncertainties and adopt precautionary approaches, especially where there may be risks of significant adverse effects. This includes favouring options with low risk and adaptive characteristics.

Explicit and transparent justification
All key proposals, recommendations and decisions – especially those that involve selection among options, predictions of significant benefits, and/or acceptance of significant adverse effects or trade-offs – must be accompanied by explicit, comprehensible and accessible justification that clearly states and applies sustainability-based evaluation and decision criteria that incorporate attention to context specific priorities and respect the principles outlined above.

A key goal of these principles and the following criteria is to encourage the search for integrated solutions that provide net immediate and long-term gains in all areas. This approach reduces the need to consider whether or not negative effects in one area are outweighed by positive effects in another area (as in the provision in the federal assessment law allowing acceptance of significant adverse effects if they are “justified in the circumstances”).

2. The key categories of concerns and sustainability criteria for evaluations and decisions

The points below identify the main categories of sustainability-related considerations to be addressed in the evaluations and decisions in this case. Each category title is expressed as a criterion to be met by the results of the assessment process. The particular questions in each category address more specific factors. The categories overlap and the particular considerations interact. Considered as an integrated set, they provide the basis for evaluation and decision criteria that ensure proper attention to the full interacting set of key determinants of net gains while avoiding significant adverse effects and trade-offs.

The categories are designed to be appropriate for sustainability-based assessment that compares feasible alternatives including the Site C proposal and the null alternative of rejecting the Site C proposal and removing the related land use restrictions. Some of the specific questions below are focused on the Site C proposal, but they illustrate the kinds of issues also to be examined for other options.

In all cases, the categories and questions recognize that the effects that matter in the end are the cumulative ones – the effects of the proposed project or an alternative, and related activities (associated, induced and spun-off undertakings) in combination with those of all past, present and reasonably foreseeable future undertakings that have affected and are likely to affect important ecological and community characteristics. These cumulative effects include, for example, the effects of past infringements on Aboriginal title and rights, including treaty rights. All phases of development, construction, operation, and decommissioning are included, as are effects at all scales – local, regional (including cross boundary downstream), provincial, national and biospheric.

Category/goal 1. The cumulative effects will maintain, protect and where appropriate rehabilitate and increase the resilience of biophysical systems and desirable human-environment relations

- Are the characteristics and potential vulnerabilities of relevant biophysical systems and human-environment relations well enough understood to provide a reliable base for confident prediction of effects (e.g. is sufficiently detailed and reliable time-series and spatially-sensitive information available for identifying and analyzing past and present and potential future cumulative effects for the Site C project as proposed)?
- Have the main uncertainties been identified and taken into account in identification of potential risks and opportunities, as well as in the prediction of effects, and have contingency plans been prepared to deal with unexpected events?
- Will the cumulative effects through all phases of development strengthen or undermine the resilience of ecosystems and reduce or add to stresses on already vulnerable biophysical and human-environment systems and/or system components (e.g. the health, abundance and distribution of wildlife populations, including recognized species at risk and ecological communities at risk; the adequacy and security of seasonal and permanent habitats, and the viability of corridors and downstream flow regimes, upon which species and ecological communities depend; systems providing ecological goods and services; and the continuation of traditional activities of the people and communities)?
- Will the cumulative effects assist or present barriers to present and future land use planning, conservation initiatives and land and wildlife management plans?

• Will the cumulative effects add to or reduce overall material and energy use, resource depletion (including agricultural lands), extractive damage and waste generation (including GHG emissions)?
• Will the effects of continuing climate change enhance or impair the viability of the undertaking and add to positive or adverse cumulative effects on the ecology and communities of the area?
• Will the cumulative effects foster or discourage more efficient allocation and/or use of energy and other resources in the region, in the province, in Canada and beyond?
• Are monitoring programs and management frameworks in place or reliably planned that focus on establishing or maintaining sustainability of valued biophysical and socio-ecological conditions, including appropriate instruments (e.g. regional land use and watershed plans, species range management plans, strategic environmental assessments, reference sites, tiered thresholds and triggers), and have these been accompanied by reliable grounds for evaluating their effectiveness?
• Where potential for adverse specific or cumulative effects (including increased risks of damage) has been identified, have avoidance options been considered and, if avoidance is not feasible, have mitigation measures been proposed and have these been accompanied by reliable grounds for evaluating their likely effectiveness?
• Where informed attention to cumulative ecological and socio-ecological system effects and effective delivery of actions to protect valued systems and components, to mitigate adverse effects, to monitor results, and to identify and implement appropriate responses depend on governance capacities (e.g. of provincial government agencies) have those capacities been demonstrated and/or are there reliable grounds for expecting them to be in place?
• Where more positive or more adverse cumulative effects have been predicted at different scales, have the trade-offs been identified and justifications presented?
• Have the Crown and BC Hydro fulfilled legal obligations (both constitutional and by agreement) and reached arrangements for consultation and accommodation on all biophysical and human-environment system matters related to any future decision to construct the proposed Site C project, or a reasonable alternative, that could have adverse effects on the Aboriginal and treaty rights relevant to First Nations and their use and enjoyment of their territories?

Category/goal 2. The cumulative effects will expand the range and availability of desirable and durable livelihood opportunities while helping to ensure sufficiency for all

• Will the cumulative effects enhance or diminish livelihood foundations (e.g., available resources, applicable skills and education, financial and social capital, knowledge of the land) and opportunities?
• Will the cumulative effects deliver net economic benefits to the people in the most affected communities, in the region, in the province, and in Canada?
• Will the cumulative effects (e.g. on available agricultural land, size of the remaining agricultural economy and viability of the associated agricultural community; and on expansion of other potentially sustainable livelihood options) enhance or diminish prospects for lasting livelihood security (including work opportunities, crop diversity and food security) and self-reliance locally, regionally and provincially?
• Are the opportunities to be gained more or less desirable (numerous, diverse, lasting, flexible, culturally attractive, etc.) than the opportunities to be sacrificed?
• Will the cumulative effects build or reduce long term livelihood diversity and security in the affected communities, in the larger region, in the province, and in Canada?
• Will the cumulative effects, including those of implementation plans, ensure that local and regional residents have access to and are able to take advantage of the opportunities potentially available?

• Insofar as most employment and related opportunities are to be clustered in the construction phase, have measures been proposed to mitigate adverse local and regional boom-bust effects (e.g. by building longer term, broadly useful capacities) and have these been accompanied by reliable grounds for evaluating likely effectiveness?
• Are the anticipated opportunities directed to and likely to be practically accessible by those now most in need of livelihood improvement, including people in the most affected communities and region?
• Where informed attention to cumulative effects on opportunities and effective delivery of actions to expand or protect opportunities depend on governance capacities (e.g. of provincial government agencies) have those capacities been demonstrated and/or are there reliable grounds for expecting them to be in place?
• Have the Crown and BC Hydro fulfilled legal obligations (both constitutional and by agreement) and reached arrangements for consultation and accommodation on all livelihood opportunity matters related to any future decision to construct the proposed Site C project, or a reasonable alternative, that could have adverse effects on the Aboriginal and treaty rights relevant to First Nations and their use and enjoyment of their territories?

Category/goal 3. The cumulative effects will enhance community wellbeing
• Will the cumulative effects enhance or diminish the social determinants of health (including community cohesion and commitment, inter-community relationships, positive intergenerational relations, household and family solidarity, livelihood security, community self-reliance, mutual respect and assistance, diversity of opportunities, cultural preservation and evolution, and pride of place) through all phases of the undertaking?
• Will the cumulative effects help to mitigate and reverse currently negative social, economic and cultural trends (e.g., concerning health and social problems)?
• Will the cumulative effects help to maintain or undermine valued traditional ways, cultural norms and supports, and social relationships (e.g., respect for Elders)?
• Will the cumulative effects improve or degrade community and regional public infrastructure and programs (e.g., affordable and accessible good quality housing, social programs and services, accessible transportation)?
• Will the new opportunities be compatible with established cultural interests and aspirations?
• Will the cumulative effects strengthen or undermine the capacity, motivation and habitual inclination of individuals, communities and institutions to be active stewards of their lands and communities, and to pursue opportunities to enhance long term viability locally and globally?
• Will the cumulative effects encourage or discourage more open and better informed deliberations, greater attention to fostering collective responsibility, and more integrated use of individual and collaborative collective decision-making practices?
• Will the cumulative effects strengthen or undermine individual and collective understanding of ecology and community, foster customary civility and ecological responsibility, and build civil capacity for effective involvement in collective decision making?
• Where informed attention to cumulative effects on community wellbeing and effective delivery of actions to expand or protect community wellbeing depend on governance capacities (e.g. of provincial government agencies) have those capacities been demonstrated and/or are there reliable grounds for expecting them to be in place?
• Have the Crown and BC Hydro fulfilled legal obligations (both constitutional and by agreement) and reached arrangements for consultation and accommodation on all community wellbeing matters related to any future decision to construct the proposed Site C project, or a reasonable alternative, that could have adverse effects on the Aboriginal and treaty rights relevant to First Nations and their use and enjoyment of their territories?

Category/goal 4. The cumulative effects will enhance equity

- Will the cumulative effects reduce or exacerbate inequities in the distribution of opportunities and other benefits, burdens and damages, risks and uncertainties among potentially affected individuals, communities, regions and other interests?
- Is the undertaking designed to direct the benefits chiefly to those currently least advantaged?
- Will the cumulative effects encourage or discourage less materially and energy intensive approaches among the advantaged, to open space for ensuring material and energy sufficiency for all?
- Will the cumulative effects expand or reduce gaps in sufficiency and opportunity (including desirable employment, health, security, income, social recognition, political influence, and vulnerability to risks) between the rich and the poor, women and men, and Aboriginal and non-aboriginal people?
- Will the cumulative effects expand or reduce the differences in opportunities and perceived status between urban/peri-urban and rural/remote communities?
- Where the undertaking involves unavoidable losses (e.g. loss of lands flooded or otherwise removed from full use), have measures been proposed to avoid or fully mitigate the adverse effects on individuals and communities and have these been accompanied by reliable grounds for evaluating likely effectiveness?
- Will the geographical distribution of cumulative social, economic and biophysical benefits (e.g., employment opportunities, revenue flows, access to resources and services, opportunities for effective participation in crucial decision making) match the distribution of burdens and damages, risks and uncertainties (e.g. loss of opportunities and resources, increase in ecological constraints, addition of responsibilities to deal with undesired changes and emerging problems, strains on existing community and institutional capacities)?
- Where informed attention to cumulative equity effects and effective delivery of actions to enhance equity depend on governance capacities (e.g. of provincial government agencies) have those capacities been demonstrated and/or are there reliable grounds for expecting them to be in place?
- Have the Crown and BC Hydro fulfilled legal obligations (both constitutional and by agreement) and reached arrangements for consultation and accommodation on all equity-related matters related to any future decision to construct the proposed Site C project, or a reasonable alternative, that could have adverse effects on the Aboriginal and treaty rights relevant to First Nations and their use and enjoyment of their territories?

Category/goal 5. The cumulative long term effects will leave an improved legacy for future generations

- Will the cumulative effects include biophysical, social and economic benefits now without compromising the ability of future generations to benefit from the environment and natural resources in areas potentially affected by the undertaking?
- Will the cumulative effects favour options and actions that are most likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably?
- Will the cumulative effects assist in returning current resource exploitation and other pressures on ecological systems and their functions to levels that are safely within the perpetual capacity of those systems to provide resources and services likely to be needed by future generations?
- Will the selection, design and implementation of the undertaking (including provisions for monitoring and adjustment) reflect the application of precautionary approaches that respect uncertainty, avoid both well and poorly understood risks of serious or irreversible damage to the foundations for sustainability, favour resilience characteristics (diversity, flexibility, reversibility,

mechanisms for learning, and management for adaptation), and willingness to act on incomplete but suggestive information where there may be risks to social and/or ecological systems that are crucial for sustainability?

- Insofar as the undertaking involves sacrifice of current continuing or renewable resources, which will not be available to future generations, have justifications been provided to establish that all other options would have entailed more adverse effects to future generations?
- Given that large dams/reservoirs have a limited life expectancy, and increasing maintenance costs over time, will proposed plans and other arrangements ensure that sufficient resources are reserved for and available to the future generations that will need to address maintenance, decommissioning and rehabilitation needs?
- At the end of its anticipated life, will the undertaking leave the local communities, region and province with resources and opportunities at least as great as those available today?
- Will the cumulative effects include measures to build for future generations a lasting basis for viable socio-ecological systems, desirable and viable livelihoods and community wellbeing, and firm grounds for confidence that these measures will be successful?
- Where informed attention to cumulative effects on future generation and effective protection of the interests of future generations depend on governance capacities (e.g. of provincial government agencies) have those capacities been demonstrated and/or are there reliable grounds for expecting them to be in place?
- Have the Crown and BC Hydro fulfilled legal obligations (both constitutional and by agreement) and reached arrangements for consultation and accommodation on all matters affecting the legacy for future generations related to any future decision to construct the proposed Site C project, or a reasonable alternative, that could have adverse effects on the Aboriginal and treaty rights relevant to First Nations and their use and enjoyment of their territories?

Category/goal 6. The overall cumulative effects will make the strongest feasible contribution to sustainability while avoiding trade-offs

- Have all principles of sustainability been applied together in the identification of cumulative effects, the comparison of options and other key evaluations?
- Have possible interactions among the anticipated effects (specific and cumulative) been identified and evaluated?
- Has the assessment evaluated whether the anticipated positive effects in various areas and at different scales will be mutually reinforcing and considered how these mutually reinforcing effects might be strengthened?
- Insofar as the extent and certainty of positive effects and of successful mitigation of adverse effects in the various categories above depends on resources and other capacities (e.g. for regulatory enforcement, programme delivery, monitoring and response), are there reliable grounds for expecting these capacities to be in place, that they will be sufficient for the purposes and that they do not place unrealistic burdens on the relevant community, territorial, provincial, national and other governance and service institutions to deal capably with new challenges along with existing and anticipated problems, needs and aspirations?
- Are any trade-offs proposed where stronger mitigation or avoidance efforts would be feasible?
- Would any proposed trade-off displace significant adverse effects from the present to the future (and would this trade-off be unavoidable without displacing more serious adverse effects to the future)?
- Have all remaining proposed trade-offs been persuasively justified on grounds that the trade-offs are unavoidable and that the trade-offs involved in all other options are worse?
- Does the proposed undertaking have, in comparison with the other broad alternatives and specific designs, the best prospects for delivering multiple, mutually supporting, fairly distributed

and lasting benefits in all of the categories of concern noted above, while avoiding significant adverse effects?

- Have the Crown and BC Hydro fulfilled legal obligations (both constitutional and by agreement) and reached arrangements for consultation and accommodation on all matters concerning interactive and overall effects and/or trade-offs related to any future decision to construct the proposed Site C project, or a reasonable alternative, that could have adverse effects on the Aboriginal and treaty rights relevant to First Nations and their use and enjoyment of their territories?

References

BC/Canada (Government of British Columbia and Government of Canada), 2012. *Site C Clean Energy Project Environmental Impact Statement Guidelines.* September. http://www.ceaa-acee.gc.ca/050/documents-eng.cfm?evaluation=63919.

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