

Gunn and Olagunju, Macro-Environmental

Manitoba Hydro's NFAT Review of Keeyask and Conawapa Generating Stations

MH-CAC Information Request Responses, Round 1

February 20, 2014

No	Preamble	Question	Response
24	We note that Dr. Gunn is well-published with her colleague, Dr. Bram Noble, on the areas of strategic environmental assessment and cumulative effects assessment.	Please elaborate on Dr. Gunn's and Ayodele Olagunju's practical, hands-on experience leading and/or undertaking strategic assessments of alternative policy options, as proposed in their technical report.	<p>Dr. Gunn and Mr. Olagunju are academic process experts for strategic environmental assessment and cumulative effects assessment, with a combined 12 years of scholarship, advisory, and training services provided in these areas. Neither Dr. Gunn nor Mr. Olagunju have led strategic environmental assessment exercises: this is generally the responsibility of project proponents and/or governments. Rather, their role would typically be to ensure that a strategic environmental assessment or cumulative effects assessment process conforms to established national and international best practice standards as closely as possible.</p> <p>Notably, however, Dr. Gunn was involved in the Saskatchewan Great Sand Hills Regional Environmental Study (a strategic environmental assessment) as the lead researcher on governance instruments and institutional arrangements. Her work in developing best practice methodologies for regional strategic environmental assessment (that accounts for cumulative effects) has been endorsed by the Canadian Council of Ministers of the Environment, the Government of Alberta, and by the International Association for Impact Assessment.</p> <p>Mr. Olagunju is currently a PhD Candidate studying regional strategic cumulative effects assessment and completed a masters degree in cumulative effects assessment in 2012.</p>
25	The CAC, through the reports	Please describe the differences	Gunn and Olagunju (2013) do not suggest that the PUB adopt a particular

	<p>prepared by Gunn and Olagunju and Gibson and Gaudreau, has presented and recommended that the PUB adopt two different decision-making frameworks for assessing the Preferred Development Plan and its options.</p>	<p>between these two frameworks and outline the advantages and disadvantages of each approach.</p>	<p>framework for decision-making, per se, rather, they suggest that because the selection of the preferred energy supply package for Manitoba is an inherently a strategic exercise with cumulative effects implications, some strategic questions tailored to the NFAT review might be useful to guide dialogue and decision-making (p. 40): (1) What is the preferred future direction for long-term energy infrastructure investment in Manitoba?; (2) What is the vision for the Nelson sub-watershed region, and can or should it sustain further development?; (3) What are the values and/or performance indicators against which the Plan and its alternatives are being assessed?; and (4) What are the likely macro or cumulative environmental impacts of the Plan and each alternative and how well does each perform with respect to the broad vision, values and performance indicators that have been identified? The four questions suggested in the report are thought to be complementary to those suggested by Gibson and Gaudreau.</p> <p>Should the PUB wish to adopt a structured strategic environmental assessment framework to determine a preferred development option (which Gunn and Olagunju would support), there is an excellent example to follow, demonstrated recently by White and Noble (2013), which successfully incorporates the kinds of sustainability principles espoused in the Gibson and Gaudreau report. Sustainability assessment, while contributing a robust framework of core sustainability principles to help guide decision-making about a wide range of development initiatives, is still developing methodologically and therefore not yet typically applied as a 'stand-alone' assessment framework to development projects in Canada. However, some strategic environmental assessment and project-based environmental assessments, when thoughtfully designed, have displayed some of the desirable characteristics of a sustainability assessment.</p> <p>White, L. and Noble, B. (2013) Strategic environmental assessment in the electricity sector: an application to electricity supply planning,</p>
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			Saskatchewan, Canada. <i>Impact Assessment and Project Appraisal</i> , 30(4): 284-295.
26	<p>Gunn and Olagunju note on page 7 of their report that one of the objectives of their review was to:</p> <p>“Provide a high-level review of the strengths and weaknesses of the power supply options associated with the Plan and its alternatives from a macro environmental perspective”</p> <p>Then in small footnotes on page 15, they note that their review “may inadvertently misinform as it is a high-level review based primarily on academic literature” and that “the discussion is not context-specific to Manitoba”. They also cite a number of other reports in footnotes on this same page where the macro environmental impacts of Manitoba Hydro’s preferred plan and alternatives can actually be found. The report does provide an academic overview of the pros and cons of different development options, but many of the issues identified are clearly not applicable to the Manitoba context, including things like the inundation of agricultural land, the resettlement of communities and seismic risks (see page18). This makes it challenging to appreciate the value of this report in the context of the</p>	<p>Please elaborate on the rationale for not reviewing and commenting on the macro-environmental and social effects of the actual Preferred Development Plan and its alternatives. If such a review has been undertaken, please provide this review.</p>	<p>The Gunn and Olagunju (2013) report responds to a specific need of the Consumers Association of Canada (CAC) (Manitoba Branch), a client of the Public Interest Law Centre of Manitoba, which is to understand at the outset of the NFAT review the broad-scale environmental impacts and benefits of various power supply technologies such that they are able to engage in a constructive dialogue with Manitoba Hydro and the Public Utilities Board about the various alternatives being considered and how to determine a strategic direction for future power supply in Manitoba. It also offers the CAC (Manitoba) a foundation and framework to critically analyze any reported macro-environmental and social effects of the actual Preferred Development Plan and its alternatives.</p> <p>The intent of the Gunn and Olagunju (2013) report was not to critique the reported macro-environmental and social effects of the actual Preferred Development Plan and its alternatives: this work was deliberately left to other subject-area experts with specific training in the areas of wildlife, fisheries, human health, etc. Moreover, the macro-environmental deliberations of the PUB were not to duplicate the detailed review of the EIS.</p>

	current review process.		
27	On page 13-14 of their report, Gunn and Olagunju note that their review of the Preferred Development Plan and its alternatives is based on La Capra and personal communication with Harper.	Please explain why Gunn and Olagunju chose not to review the actual NFAT submission made by Manitoba Hydro so that they could provide expert advice based on their own reading of the filing.	Gunn and Olagunju were advised by the CAC to consult with Harper and refer to the LaCapra report and others to determine the types of power technologies involved in Manitoba Hydro's Preferred Development Plan and its major alternatives. The recommendation was made for reasons of efficiency. It should also be understood that Dr. Gunn undertook an extensive review of Keeyask for the EIS.
28	In the discussion of hydro-electric development, the environmental and social impacts of development are emphasized. 'Gas' turbines, however, are largely analyzed in contrast to coal generated energy.	Please analyze hydro in contrast to coal generated energy.	<p>Both coal and hydro have their benefits and burdens both socially and environmentally. The greatest selling point for coal is its reliability; while energy production via hydro can be affected by factors such as seasonal variation in precipitation, coal energy supply is often secure throughout the year. Costs to the environment in terms of CO₂ emissions, groundwater and air pollution, and resource depletion and their implications for climate change, biodiversity, and human health are disproportionately greater for coal in comparison to hydro. Both are socially controversial: while downstream and in-stream effects are common both locally and regionally with hydro development, coal mining provides the single largest anthropogenic contribution to global warming which in turn has been described as the 'biggest' health threat of the 21st century (BZE 2014). Evidence of comparatively higher rates of mortality and diseases such as cancer, heart, lung and kidney disease, and birth defects, to minor respiratory complaints have been reported in coal mining communities (see for instance: Colagiuri et al. 2012, pp. iv, 11).</p> <p>As of 2010, the share of global electricity generation attributed to coal is still significantly high – over 40%– in comparison to 16% for hydro (IEA 2012). The dominant share of fossil fuels (including coal) for energy production is projected to continue at the current rate till 2040 (IER 2014), however stiffer regulatory measures to curb CO₂ emissions globally and the growing relevance of renewable alternatives could make construction of new coal plants more controversial. On the whole, however, hydro is a more environmental-friendly option when compared to coal (Varun and Prakash 2009). In the Varun and Prakash (2009) study,</p>

			<p>the life cycle emissions level for coal is computed to be several times higher than hydro's.</p> <p>Beyond Zero Emissions (BZE) (2014) Health and social harms of coal mining in local communities - research report. Available at: https://bze.org.au/repower-port-augusta/coal-and-health</p> <p>Colagiuri, R., Cochrane, J., Girgis, S. (2012) Health and Social Harms of Coal Mining in Local Communities: Spotlight on the Hunter Region. Melbourne: Beyond Zero Emissions. Available at: http://media.bze.org.au/coal_health_Report_FINAL.pdf</p> <p>International Energy Agency (2012) 2012 Key World Energy Statistics. Paris: International Energy Agency. Available at: http://www.iea.org/publications/freepublications/publication/kwes.pdf</p> <p>Institute for Energy Research (2013) EIA Forecast: Fossil Fuels Remain Dominant Through 2040. Available at: http://www.instituteforenergyresearch.org/2013/12/17/eia-forecast-fossil-fuels-remain-dominant-through-2040/</p> <p>Varun, B., and Prakash, R. (2009) LCA of renewable energy for electricity generation systems—A review. <i>Renewable and Sustainable Energy Reviews</i>, 13: 1067–1073.</p>
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