

Sustainability assessment and the Keeyask case

a presentation for the
Manitoba Clean Environment Commission hearings
concerning the proposed Keeyask hydropower project

14 November 2013

by

Robert B. Gibson

Department of Environment and Resource Studies

University of Waterloo

Waterloo, Ontario, Canada

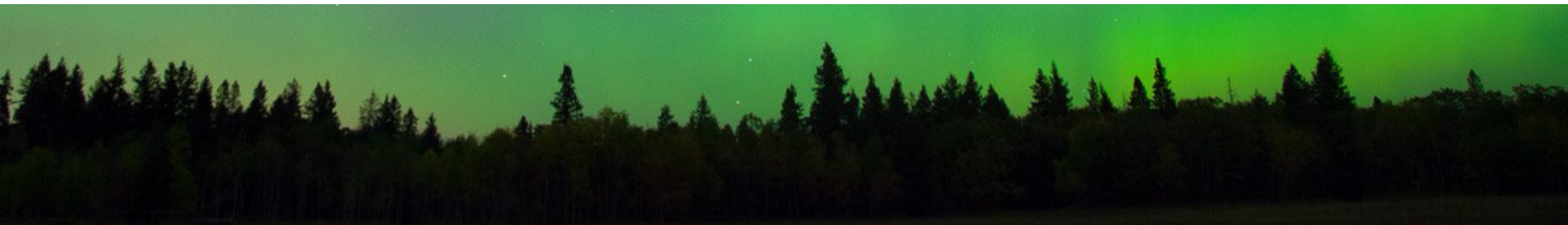
rbgibson@uwaterloo.ca

Report submitted to the CEC

(Framework for Sustainability-based Assessment for the Keeyask Hydro Project)

The purpose of the work:

1. to describe a framework for sustainability-based decision making appropriate to this case;
2. to establish the public interest and legislative basis for undertaking sustainability-based assessments, or their substantive equivalents, in Manitoba; and
3. to assess whether there are grounds for confidence that the proposed Keeyask project, as described in the Response to the EIS Guidelines, will promote progress towards sustainability while avoiding significant adverse effects.





Agenda for this presentation

1. why it is important to do a sustainability-based assessment, in general and in this case
2. how to do sustainability-based assessments, in general and in this case
3. how the proponents' Response to the EIS Guidelines compares with what should be done in sustainability-based assessment
4. whether there are grounds for approving the proposed Keeyask project, as described in the Response to the EIS Guidelines, in light of contribution to sustainability objectives
5. what the implications are for the CEC review



Sustainability (sustainable development)

- provide/protect viable possibilities for future generations
- recognize the interdependence of social, economic, ecological and other considerations
- reverse unsustainable trends; seek positive contribution to sustainability (not just mitigation)
- respect complexity and uncertainty
- accept limits and pursue opportunities for creative innovation

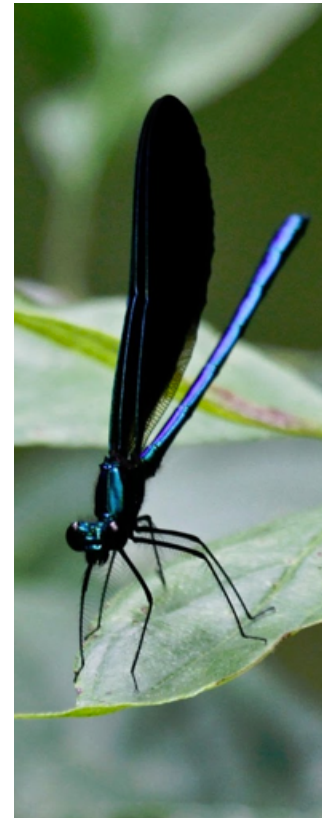
Sustainability assessment: global practice

- means of implementing commitments to sustainability made by many jurisdictions and organizations
- rapidly expanding number and range of applications (not just in environmental assessment processes)
- many different approaches reflecting different ecologies, cultures, social and economic conditions, opportunities, etc.
- shared essentials based on common basic imperatives for progress towards sustainability and lessons from experience with sustainability assessment so far
- many applications in Canada including in environmental assessment reviews (e.g. five major joint review panels)



Sustainability assessment: basic application considerations

- use “positive contribution to sustainability” as the basic criterion for evaluations and decisions
- focus on identifying the best option and achieving multiple, mutually-reinforcing, fairly distributed, adaptive and lasting gains (compare alternatives vs trying to judge the acceptability of an individual project)
- give integrated attention to all core issues: all requirements for progress towards sustainability, and the interrelations among these requirements
- avoid lasting damage and identify/justify trade-offs explicitly



Sustainability assessment: more basic application considerations

apply explicit sustainability-based criteria to

- determination of purposes/needs
- identification and comparative evaluation of options alternatives
- judgements about the significance of positive and adverse cumulative effects
- identification and evaluation of potential trade-offs
- needs for mitigation and enhancement of effects of preferred alternative(s)
- decision on approval and conditions
- determination of monitoring and other follow-up requirements



Contribution to sustainability as a basis for evaluations and decisions in Manitoba

- basic expectation: decision making in the public interest
- expectations entrenched in Manitoba *Sustainable Development Act* (Manitoba 1998) and key sections of the Manitoba *Environment Act* (Manitoba 2012) (report appendices 1 and 2)
- also a purpose of the Canadian *Environmental Assessment Act* (now CEAA 2012) under which several formal panel reviews have applied the contribution to sustainability test (report appendices 1)
- expectation accepted in Manitoba Hydro Sustainable Development Policy/Principles: e.g. “responsibility as a caretaker of the economy and the environment for the benefit of present and future generations of Manitobans” (report appendix 4)



Evaluation and decision criteria

- the general categories of sustainability requirements that must be addressed anywhere in the world
- the basic rules for dealing with trade-offs (where attaining one desired result seems likely to entail compromising or sacrificing another)

plus

- the particular factors and issues that deserve attention in the given context and case





Generic sustainability assessment criteria that apply everywhere

- Socio-ecological system integrity
- Livelihood sufficiency and opportunity
- Intragenerational equity
- Intergenerational equity
- Resource maintenance and efficiency
- Socio-ecological civility and democratic governance
- Precaution and adaptation
- Immediate and long term integration

(from Gibson et al., *Sustainability Assessment: Criteria and Processes*, 2005)

Generic trade-off rules that apply everywhere

- Seek maximum net gains
- Put burden of argument on trade-off proponent
- Avoid significant adverse effects
- Protect the future
- Provide explicit justification
- Use open process

(also from Gibson et al., *Sustainability Assessment: Criteria and Processes*, 2005)





Big issues that are specific to the case and context

- implications for and choices about
 - the future of Manitoba, particularly with regard to electrical energy needs and options
 - the people and communities in the immediate areas of the project and its alternatives
- broader contributions, effects and implications of the project and alternatives, considering associated and induced activities and cumulative effects



Combining the generic criteria and the particular Keeyask case issues

- begin with case/context issues
- add any missing considerations from the generic criteria list
- include trade-off considerations reflecting the particulars of the case and context
- result: nine major case-specified categories of issues including one on their interactions
- need also to add trade-off considerations

(see report appendix 5 for the framework and report appendix 6 for the process)

Criteria framework for sustainability assessment in the Keeyask case

(report appendix 5)



- nine major issues categories, each with a goal statement
- more specific criteria issue areas in each category
- particular questions in each criteria issue area (integrating case and generic considerations)

additional notes:

- category nine covers interactive effects
- trade-offs would need to be identified

The nine big issues categories



Nine basic categories of requirements for moving towards sustainability (gains needed and losses to be avoided)

- Improving the ecological basis of our livelihoods and wealth
- Fostering desirable and durable livelihoods
- Enhancing First Nations wellbeing and self-determination
- Ensuring fairness in process and outcomes
- Leaving a positive legacy
- Promoting resource maintenance, conservation and efficiency
- Prioritizing precautionary and adaptive management
- Ensuring due process and an informed citizenry
- Integrating immediate and long-term planning objectives



The basic criteria framework (goal 1)

Improving the ecological basis of our livelihoods and wealth

Goal

Build human-ecological relations to establish and maintain the long-term integrity of socio-biophysical systems and protect the irreplaceable life support functions upon which human as well as ecological wellbeing depends.

Themes

- Maintenance of ecological services and regulation
- Improvement of habitats and habitat intactness
- The ecological basis of traditional livelihoods
- Climate change mitigation
- Appropriate immediate and long-term adaptive planning
- Management of adverse effects

(from report executive summary, Table 1)



The full criteria framework (goal 1)

Improving the ecological basis of our livelihoods and wealth

Goal

Build human-ecological relations to establish and maintain the long-term integrity of socio-biophysical systems and protect the irreplaceable life support functions upon which human as well as ecological wellbeing depends.

Criteria

Improvement of habitats and habitat intactness

- Will the project effects allow for the maintenance of keystone and/or endangered species (esp., caribou, moose and sturgeon) and culturally important species and ecotypes?
- Will the project effects allow for the maintenance of the necessary context for species to thrive and prosper (e.g. spawning habitats for sturgeon, calving areas for caribou)?
- Will the project effects allow for sufficient intactness to maintain and promote sensitive or endangered species (e.g. caribou ...)?



The basic criteria framework (goal 2)

Fostering desirable and durable livelihoods

Goal

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

Themes

- Ensuring livelihood foundations
- Protecting the most vulnerable
- Fostering local economic development and self-determination
- Prevention of boom and bust
- Shared responsibility for livelihood maintenance

(from report executive summary, Table 1)

The full criteria framework (goal 2)

Fostering desirable and durable livelihoods

Goal

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

Criteria

Ensuring livelihood foundations

- Will the proposed project enhance livelihood foundations (e.g., available housing, applicable skills and education, financial and social capital, knowledge of the land, electricity and other services) and opportunities?
- Will the proposed project provide respectful and fulfilling employment opportunities and foster self-determination?
- Will the proposed project address historical impediments to livelihood development (e.g. incidence of diabetes on reserves), particularly those directly or indirectly related to the impact of past developments in the area?

Protecting the most vulnerable

- Will the proposed project deliver net benefits to the people in the most affected communities, in the region, in the province, in Canada, and where the electricity is to be consumed? (excerpted from report appendix 5)



Evaluating alternatives using a sustainability-based criteria set

- for each alternative, prepare responses to each question (e.g. as strongly positive contribution, possibly positive but uncertain, possibly adverse but uncertain, strongly adverse) plus detailed comments
- assess overall positive or negative effects in the major issues categories
- include positive or negative interactions among effects
- identify and assess the acceptability of trade-offs
- identify the preferred alternative: likelihood of net positive sustainability effects (with multiple benefits and no significant long term damages or risks and no unacceptable trade-offs) in comparison with other options
- include notes on priorities, uncertainties, recommended approval conditions and other implications

Identification and comparative evaluation of alternatives

- source of the most significant contributions to sustainability from EA
- requires broad framing of the purposes/needs (in this case electricity-centred, but considering end uses, covering demand as well as supply responses, ...)
- requires properly specified and explicit sustainability-based criteria
- alternatives always include the null option(s)
- includes significantly different approaches as well as different versions of particular options (different timing, revenue streams, allocation, mitigation and enhancement packages, bridging options, etc.)
- covers cumulative/systemic effects (e.g. involving potentially induced developments)
- covers associated requirements (e.g. for adaptive design, monitoring, capacity to capture opportunities and correct adverse effects, etc.)



Adequacy of the Keeyask EIS considered in light of sustainability- based assessment approach

- appropriate overall mandate (general legislative and policy expectations, requirements of review bodies taken together) – *yes*
- evident and consistent application of an explicit set of sustainability-based criteria – *no, despite listing of sustainability considerations in chapter 9 of the EIS (see report s.3.2.1, s.3.2.4)*
- comparative evaluation of alternatives – *no (see report s.3.2.3)*
- appropriate framing of the purpose(s) to be served by the best option – *no (see report s.3.2.2)*
- comprehensive and reliable evaluation of potential effects – *for the preferred option, the EIS covers many important matters, though not entirely comprehensive, and is inadequate and/or controversial in some areas (e.g. cumulative effects, impacts on lake sturgeon, boreal woodland caribou, and boom and bust dynamics) (see report s.3.2.5)*

Implications for assessment of the Keeyask proposal

The EIS does not provide satisfactory grounds for

- concluding that the Keeyask project is the most appropriate response to a reasonable statement of the purposes to be served by a electrical energy undertaking in Manitoba
- confidence that the proposed Keeyask project, as described in the Response to the EIS Guidelines, would promote progress towards sustainability while avoiding significant adverse effects





Factors in CEC adoption of a sustainability-based assessment approach in this case

- justifiable grounds for taking such an approach – *yes*
- adoption of an explicit set of sustainability-based criteria for the deliberations – *easily possible*
- comparative evaluation of alternatives, including the project as proposed – *not in EIS despite federal guidelines, involves CEC terms of reference issue, needed for defensible decision*
- appropriate framing of the purpose(s) to be served by the best option – *not in EIS, probably does not involve CEC terms of reference issue, broadly needed for review*
- comprehensive and reliable evaluation of potential effects – *largely available for Keeyask dam option in EIS, but with some important areas of concern – e.g. cumulative effects, impacts on lake sturgeon, boreal woodland caribou, and boom and bust dynamics*



Implications for CEC deliberations in this case

- should adopt a sustainability-based approach to the review
- should adopt an explicit set of sustainability-based criteria for the deliberations
- should adopt a broadly suitable working definition of the purpose(s) to be served by an undertaking in the Manitoba electrical energy field, in which the proposed Keeyask project would be a potentially reasonable option
- should use the criteria set in evaluating the strengths and limitations of the proposed project, with attention to the evident deficiencies of the EIS and associated areas of contested potentially adverse effects
- should not recommend granting of an *Environment Act* licence to the Keeyask project without a comparative evaluation of alternatives (including the project as proposed) and correction of other EIS deficiencies

Implications for Manitoba and CEC beyond this case

- should use this case as the first step towards general adoption of a sustainability-based approach to reviews and decision making concerning potentially significant undertakings
- for future assessments should require proponents to adopt from the outset an integrated sustainability-based approach that includes open processes for ensuring
 - a broad enough definition of the purposes to be served to cover options with maximum potential contributions to sustainability
 - identification and comparative evaluation of potentially desirable alternatives
 - application of an explicit set of sustainability criteria specified for the case and context in evaluations of purposes, alternatives, positive and adverse cumulative effects, mitigation and enhancement needs, trade-offs, implementation needs, etc.



Possible additional matters

- Appropriate purpose in this case
- Illustrative generic trade-off questions





Appropriate statement of purpose for this case

to improve the Manitoba electricity system, with regard to overall contributions to sustainability in the public interest

- includes (but is not limited to) supply, transmission, efficiencies and demand management, end use matching, and smart systems components
- includes effects within and outside Manitoba



Trade-off questions

- what likelihood of significant adverse effects that cannot be avoided without accepting more adverse effects elsewhere?
- any trade-offs proposed where stronger mitigation efforts would be feasible?
- any proposed trade-off that would displace significant adverse effects from the present to the future?
- what public discussion and acceptance of proposed trade-offs?
- any alternative option that avoid significant adverse effects and deliver similar positive contributions to sustainability?