PUB/CAC 1a

Preamble

Your report states that "Integrated sustainability-based approaches provide a more efficient and effective means of guiding decision making."

Question

Please contrast this approach against the approach used for strategic environmental assessments.

Response

There is no single approach used for strategic assessments. Like environmental assessments at the project level, strategic environmental assessments (SEAs – assessments at the strategic level of policies, plans, programmes and related undertakings) can be integrated and sustainability-based. But not all SEAs are.

SEA failure to be integrated and sustainability-based is typically the result of one of more of the following:

- the assessment does not cover the full suite of sustainability-related considerations (for example, some SEAs focus exclusively on biophysical factors, or only on biophysical factors plus the effects of biophysical changes on social, economic and cultural factors);
- the assessment covers social, economic and biophysical factors but does not address their interactions and consequently is not an integrated assessment (for example, social, economic and biophysical assessment studies may be done separately and brought together only in final report assembly; in the paper copy era that was called “integration by stapler”);

- the assessment focuses on short and medium term effects and implications, without serious attention to lasting effects and implications;
- the assessment focuses on mitigation of adverse effects rather than seeking to identify the option best equipped to deliver multiple, mutually reinforcing, fairly distributed and lasting benefits while avoiding significant adverse effects.

That said, SEAs are typically better suited than project-level assessments for attention to longer term regional and sectoral objectives, broad alternatives and cumulative effects. Integrated sustainability-based approaches to SEA can therefore be particularly useful tools for addressing big issues and options and for providing suitable guidance to those involved in project level proposal development, assessment and implementation.

PUB/CAC 1b

Preamble

Your report states that "Integrated sustainability-based approaches provide a more efficient and effective means of guiding decision making."

Question

Please contrast this approach against the multiple account cost/benefit approach.

Response

Recognizing there are different approaches to both sustainability assessment and multiple-accounts benefit/cost analysis (MA-BCA) it may be reasonable to say the following:

The main difference is an emphasis in MA-CBA on quantification, centred on monetization of effects using methods that would permit a quantified comparison of the options at hand. Our sustainability-based approach does not have such ambitions in part because of the daunting challenges involved in defensible quantification covering the full suite of considerations that are crucial to sustainability-based assessments. By contrast, our sustainability-based approach attempts to be more comprehensive in what it considers. Likewise, sustainability-based assessments strive to be more analytical in trying to make sense of the impacts, compared with MA-BCA approaches, which appear to be more descriptive in nature.

Undertaking MA-BCA in a sustainability–based approach would require

- finding suitable indicators and adequate data;

- incorporating defensible ways to predict and monetize the individual, positive and adverse, near and long term, direct and indirect effects related to each criterion plus the interactive effects involving two or more criteria;
- finding a defensible way to compare monetized and non-monetizable impacts and benefits; and
- including a method for identifying and evaluating trade-offs.

There are daunting challenges in meeting each of these requirements. For example,

- major considerations often overlap (certainly that has been our experience),
- simple indicators with adequate data are often not available for important considerations,
- accurately quantifiable prediction of effects in complex systems is at best difficult;
- monetization efforts raises large issues (willingness to pay versus willingness to accept; net gains or losses/risks versus distribution of gains or losses/risks, etc.); and
- at some point all the numbers and indicators need to be integrated into a final narrative that allows for truly informed decision-making.

Our sustainability-based approach does not attempt to avoid overlapping criteria, and does not assume that the other challenges often can be met in ways that support claims to quantitative accuracy.

In our experience with the application of sustainability-based criteria, the introduction of a more complete suite of criteria is often sufficient to deliver important insights into the purposes to be served and the relative merits of options, without reliance on detailed quantification.

PUB/CAC 2

Preamble

Your report states that "A key question is how are these needs determined? It is fair to say that determining energy needs is not an easy task; discussions surrounding the topic can ultimately require questioning the basic character of human needs (e.g., Maslow 1943), and definitions of the good life (e.g. Higgs et al. 2000; Hall and Klitgaard 2012). Certainly many considerations must be taken into account in relation to need, and this section outlines three basic ones."

Question

Given Manitoba Hydro's legal obligation to meet Manitoba demand, are these considerations actually relevant with respect to Manitoba Hydro? Or is the "means to an end" only useful in the broader social context?

Response

First, we would like to note the distinction between need and demand. Manitoba Hydro was established to meet the “needs” of the province, as is evidenced by Section 2 of the *Manitoba Hydro Act* (Manitoba 2012c, s.2 p.4):

> The purposes and objects of this Act are to provide for the continuance of a supply of power adequate for the <u>needs</u> of the province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power. (emphasis added)

Likewise, the NFAT terms of reference refer to need, as opposed to demand where they note (Manitoba 2013, p.2),

> The Panel's report to the Minister will address the following items: …
>
> An assessment as to whether the <u>needs</u> for Hydro's Plan are thoroughly justified (emphasis added)

While need and demand overlap, meeting the needs of Manitoba requires judgement and is inherently normative. As we note on page 11 of the report:

> In the absence of a more comprehensive strategic energy assessment, it is contingent upon bodies such as the PUB to ensure these broader issues are considered with sufficient diligence – recognizing that the determination of appropriate emphasis depends on the extent to which attention to these issues may affect judgements on the relative desirability of available options and the nature of terms and conditions accompanying any approvals.

Ultimately, we argue that neither need nor demand can be taken as a given, as is well recognized by the now conventional attention to conservation and demand management in power system planning.

In response to the question of relevance, we believe these considerations are very relevant for Manitoba Hydro. Broadly speaking, Manitoba Hydro is proposing very significant development in the electricity sector, and this development will have economic, social and ecological impacts for several generations. As we note on page 11 of the report,

It is clear that in Manitoba power systems planning forms part of economic policy, such as maintaining low electricity rates for industrial customers, and that it can have important effects on social and community development risks, opportunities and related policy matters. Furthermore, it should be evident that determining desirable futures and translating those into energy needs are fundamental requirements in establishing good energy strategy.

In the absence of a more comprehensive strategic energy assessment, it is contingent upon bodies such as the PUB to ensure these broader issues are considered with sufficient diligence – recognizing that the determination of appropriate emphasis depends on the extent to which attention to these issues may affect judgements on the relative desirability of available options and the nature of terms and conditions accompanying any approvals.

Furthermore, while the preamble quotes a reference relating to discussions of meeting basic human needs and characteristics of the good life, the three areas of discussion provided in the section on need are focused on very practical considerations. The essentials of the three areas are as follows:

1. See energy as a service and promote end-use matching – this section focuses upon ensuring that the energy form (e.g. heat, electricity) is matched with the task being performed. This is a critical question of efficiency, and end-use matching is oftentimes referred to as ‘second law efficiency’, because it is an approach to efficiency that includes consideration of the second law of thermodynamics. There are many engineering textbooks focused on second-law efficiency and

its variants (e.g. exergy) and attention to these factors is an important aspect of informed energy planning.

2. Build energy consumer awareness and facilitate access to less demanding options – this section focuses upon conservation and demand management, as well as changing societal values. It is based in the recognition that continuous expansion of energy consumption is unfeasible. Energy utilities already engage in social marketing campaigns to change people's values and habits (e.g., turning down the temperature, turning off the lights, etc.). This section also serves as a lead-in to the following section on backcasting.

3. Work backwards from the end goals – the final section under need discusses backcasting, which is an approach to energy strategy that recognizes that future energy demand is not inevitable and that it is often wiser to work towards desirable future conditions than to be ruled by the projection of current trends. As noted by the World Commission on Dams (2000, p.179), forecasts of future demands have frequently been overstated and have led to a perceived need for large incremental responses. Backcasting could be one approach adopted by Manitoba Hydro to ensure that demands are not overstated, and may allow for a more inclusive process of energy planning.

PUB/CAC 3a

Preamble

The report discussed the use of "backcasting" to determine desired uses and then develop a framework to get to that point.

Question

Please confirm that "backcasting" is intensity-focused rather than based on total use; i.e., it would concern itself with the use per capita.

Response

Backcasting is not simply intensity focused; it also concerns itself with total use. As noted by Robinson (1982), backcasting involves setting policy goals and then determining how these goals can be met. Backcasting is a normative exercise related to working back from desirable futures, rather than trying to predict the most likely future or merely accommodating demands predicted by projecting from past trends. Given that many forecasts based on business as usual (such as the IPCC reports on climate change) predict an undesirable future, it is important not to accept the most likely future, but rather decide now what future we wish to have.

The components of backcasting that address means of guiding change towards desirable future conditions are free to consider a wide range of means, including initiatives to reduce the intensity of energy (and/or material) use. It seems evident that in a desirable future we will need to lead lives that have less adverse effects, including by being less energy- and resource-intense. However, there are many important considerations related to total amounts, such as the total amount of greenhouse gases that will be emitted by the competing power system plans.

Reference

245 Robinson, J. B. (1982). "Energy backcasting: A proposed method of policy analysis." Energy Policy **10**(4): 337-344.

PUB/CAC 3b

Preamble

The report discussed the use of "backcasting" to determine desired uses and then develop a framework to get to that point.

Question

If (a) is confirmed, please discuss the application of this process in a system that is projecting population and customer growth.

Response

The response to 3a above applies whether or not population is expanding.

PUB/CAC 4

Preamble

Table 2 of the report discusses several demand-side management (DSM) opportunities set out in Manitoba's Clean Energy Strategy.

Question

Are you taking a position as to the sufficiency or lack thereof of Manitoba Hydro's current DSM measures? If so, please elaborate and state your reasons.

Response

We are not taking a position on the sufficiency or lack thereof of Manitoba Hydro's current DSM measures, or on the Preferred Development Plan or any of the individual alternatives. Our objective is to provide a suitable framework for considering the options in the long as well as short term public interest.

PUB/CAC 5

Preamble

Table 6 sets out a proposed set of evaluation and decision criteria for the NFAT analysis.

Question

Are you taking a position as to the relative merits, from a sustainability perspective, of the different alternatives analyzed by Manitoba Hydro and the other NFAT participants? If so, please elaborate and provide your analysis.

Response

We are not taking a position on the relative merits, from a sustainability perspective, of the different alternatives analyzed by Manitoba Hydro and the other NFAT participants. Our objective is to provide a suitable framework for considering the potentially reasonable options in the long as well as short term public interest.

We are advised by CAC Manitoba that they will be employing the Keeyask-focused version of the proposed set of evaluation and decision criteria as they develop their final recommendations.

PUB/CAC 6

Preamble

Your report refers to the 5 main criteria and 36 subcategories applied by the Joint Review Panel for the Mackenzie Gas Project.

Question

Please file this criteria, either stated or by providing the relevant excerpt of the report of the Joint Review Panel.

Response

We have included Chapter 19, the concluding chapter of the final report of the Mackenzie Gas Project Joint Review Panel. The file is called “Mackenzie Gas JRP Ch 19 - Sustainability and Net Contribution.”

The panel on pages 586 and 589 lists the five key sustainability issue categories that it used for its analysis. The analysis covered the project as proposed, the related range of throughput options (see page 588, Table19-1), and the null alternative, with and without full implementation of the panel’s recommendations. The 36 key issues in the five categories are listed on page 590, Table 19-3). And the summaries of the analyses of the issues in each of the five categories are presented on page 591-606. Interactive effects are addressed on pages 606-608.