

Cost-Benefit Analysis and Relevant Decision Criteria

With a discussion of the use of Peak Demand in Pre-dispatch

Presentation to Stakeholder Advisory Committee
October 30, 2008



- Primary issue for today's discussion
 - What decision criteria should the IESO apply when comparing the costs and benefits of proposed changes to market rules, market procedures, or market design?
- Secondary issue
 - Should the IESO use a peak or average demand forecast in pre-dispatch?

- Sometimes, a proposed change to the market means improved efficiency and lower prices (bill's) for consumers. In this case, it is generally easy to come to the conclusion that the change should occur.
 - E.g. introduce regional reserve sharing
- Sometimes, a proposed change to the market means improved efficiency but higher prices (bill's) for consumers. In this case, the decision making process can be more complex.
 - E.g. 3-times ramp rate

- In part, the decision making process is complex as the IESO (and stakeholders) must balance two competing objectives of the *Electricity Restructuring Act, 2004*:
 - 1. To protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service;
 - 2. To promote economic efficiency and cost effectiveness in the generation, transmission, distribution, sale and demand management of electricity and to facilitate the maintenance of a financially viable electricity industry.

- Only limited guidance of how to balance these competing objectives when they are at odds
 - OEB decision in Ramp Rate issue indicates that efficiency matters but not clear by how large efficiencies must be relative to impact on consumers' bills
- Lack of guidance of how to balance these effects can lead to:
 - Protracted study of issues with little progress towards a resolution
 - Relatively few changes being made even when change is desired or beneficial to the province as a whole
 - Inconsistent decision making
 - “horse trading” and industry “mistrust”
 - Highly politicized environment

- IESO adopted CBA in order to introduce more disciplined approach to assessing market changes and alternative options
 - Improve transparency of decision making process which encourages accountability by revealing where decisions are at variance with the analysis.
- CBA decision criterion (Kaldor-Hicks)
 - Focus is on net benefits to the province as a whole (efficiency)
 - Does not consider who wins or loses (distributional or equity impacts)
- Is this decision criterion appropriate for IESO changes in light of the *Electricity Act* objectives?

- Dr. Peter Townley, “A Microeconomic Policy Perspective of IESO’s Pre-Dispatch Forecasting Proposal”
 - Sets out general framework for decision making adopted in Canadian Competition law
 - Applies the framework to Peak vs. Average

- Satisfaction of Kaldor-Hicks indicates efficiency gain but does not guarantee increase in social welfare.
- Common economic wisdom suggests proceed with change if:
 - individuals have identical marginal utilities of income (wealth), or
 - the losers are wealthy relative to the gainers
- If losers are less wealthy than gainers, possible the efficiency gain comes at expense of equity consideration

- Assume only producers and consumers
- BWA applies a distributional weighting factor (W) to the impact on consumers.
 - W is the distributional weight by which one would have to augment the absolute value to consumers' losses to make them the same magnitude as producers gains.
- $\text{Producer Impact} = W \times (\text{Consumer Impact})$

- Decision makers must then determine if there is sufficient reason/evidence to inflate consumers' losses by at least W ?
- Decision maker's problem is narrowed to the type of information or evidence required to tip the weighting
- In the absence of clear evidence of egregious distributional impacts W approaches 1 and decision criterion is Kaldor-Hicks (errs on the side of efficiency gains)

- Analysis indicates that change to average demand forecast in non-ramp hours would lead to the following stakeholder impacts (post OPG Rebate, GA and IOG payments):
 - Internal generators $G = \$23 \text{ M}$
 - Imports/exports $I/E = -\$2.6 \text{ M}$
 - Ontario Consumers $C = -\$17 \text{ M}$
- Kaldor-Hicks Criterion - approve proposal if $G + I/E + C > 0$
 - $G + I/E + C = \$3.4\text{M}$, therefore approve proposal

- BWA solves W such that $G + I/E + W \times C = 0$
 - Implies $W=1.2$
- Decision maker then decides if appropriate weight on consumers impact is greater than $W=1.2$
 - If yes, then do not approve proposal
 - If no, then approve proposal

- Gainers and losers should be easily identifiable and there should be some confidence in accuracy of estimated impacts
- Gainers and losers should be distinct
- Essential characteristic that distinguish groups in equity considerations is income because important unknown, individuals' marginal utilities of income, is a function of income (wealth); unlikely to be an issue if income levels are similar.

- IESO asking MPWG and SAC to review Dr. Townley Paper to provide comment of the use of the Balancing Weights Approach (Decision Criterion)
 - Written comments due November 13, 2008
- Dr. Townley to revise draft paper to reflect comments. IESO will also provide response to comments raised by Stakeholders regarding process.
 - Response by November 21, 2008
- IESO request that SAC members provide final position on (i) appropriate decision criteria, and (ii) peak vs. average
 - December 3, 2008 SAC meeting
- IESO will make decision/recommendation on peak vs. average on December 17, 2008
 - If general agreement on decision criteria then apply this to peak vs. average and future decisions
 - If no general agreement, IESO will use discussion to assist on peak vs. average issue and in future decisions