

Memorandum

To: Market Pricing Working Group
From: John MacKenzie
Date: 24 Oct 08
Re: 2009 Priorities for Market Pricing Working Group

The IESO has committed to establish a transparent and consistent process for establishing priorities for studies of potential market design change issues. Market design changes include existing and future real-time pricing issues.

The attached document proposes a model for establishing such priorities. At the end of the attached document is a list of known potential market design change issues. This model will be presented and discussed at the Stakeholder Advisory Committee meeting on October 30th, 2008. The IESO intends to finalize the model and establish priorities for the studies of known potential market design changes by the end of 2008. One of the products of that exercise would be the 2009 priorities for the Market Pricing Working Group.

Market Pricing Working Group member feedback is requested with respect to which of the listed real-time pricing issues should be 2009 priorities, or if there are other pricing issues, not listed, that should be considered as priorities in 2009. Members are requested to consider the 2009 priorities within the proposed model for establishing priorities i.e. base their priority choice(s) on the expected positive impacts, implementation cost and stakeholder support for the specific issue.

Yours truly,

John MacKenzie

Attach.

INTRODUCTION

The IESO has committed at the Stakeholder Advisory Committee to develop a transparent and consistent process for establishing priorities for studying potential market design changes.

Market changes include:

- market rule amendments;
- market pricing issues; and
- broader market issues and evolution initiatives.

Potential market design changes can originate from many sources. Any person can submit a market rule amendment request to the Technical Panel. The Market Surveillance Panel has made many recommendations that would change aspects of the market design. Stakeholders, including the government and the Ontario Power Authority can introduce or request initiatives that require changes to the market design. A list of the current potential market design changes is attached.

Prioritization of these many design changes also occurs in the different forums established to address the change: Technical Panel, Market Pricing Working Group, IESO Operations etc. These disparate assessment and prioritization processes have sometimes led to the IESO assigning priorities and undertaking studies in an inconsistent and non-transparent manner. The goal of this proposed model is to gather together all the market design change issues together so that they can be assessed and priorities established in a consistent and transparent manner, in consultation with stakeholders, and to ensure that the IESO is working on the appropriate issues.

The priorities established under this process would be for the study and investigation of market design changes. The decision on whether to ultimately implement, and the associated priority of the implementation of any change resulting from the study is not within the scope of this process. Those decisions would be made under other IESO decision processes.

It is proposed that the priority of market design change studies be established by:

- i) assessing and scoring the expected impacts of the market design change in the following six areas or criteria:
 - Reliability;
 - Market efficiency;
 - Sustainable electricity service;

- IESO efficiency;
- Implementation costs; and
- Stakeholder support.

ii) weighting and summing the scores.

The higher the weighted total score, the higher the priority.

The proposed criteria and the factors to be considered under each criterion are aligned with the IESO mission and strategic objectives and priorities as defined within the IESO Business Plan¹.

IESO resource capability to undertake the study is not a criterion for determining priority. By excluding IESO resource capability, the priority of potential market design change studies would be determined strictly on the expected positive impacts, implementation costs and measure of stakeholder support. This approach would also ensure that market design changes that score high with respect to impacts, implementation costs and stakeholder support do not get lower total scores because IESO resources are not available to undertake the study. IESO resource capability would be a factor when establishing which of the higher priority studies to undertake. The implication of IESO capabilities is discussed further in this document under 'Additional Factors'.

The proposed scoring methodology is subjective, requiring an assessment of whether the expected impact of a market design change would be 'none', 'minor', 'moderate' or 'significant'. The IESO recognizes that it is speculative to make an assessment of the expected impacts of a change before the study has been conducted. However, the IESO believes that such an assessment is necessary to make priority decisions, and that such assessments will improve as experience is gained. Also, as this prioritization process evolves over time and through experience, the IESO expects that the scoring metrics will become more granular and definitive.

¹ MISSION

To act in the interests of the people of Ontario to enable reliable, competitively-priced and sustainable electricity service.

STRATEGIC OBJECTIVES

- reliable electricity service
- competitively-priced electricity service
- sustainable electricity service

STRATEGIC PRIORITIES

- Providing value in the IESO's services and products;
- Responding to the needs and concerns of stakeholders; and
- Earning the trust of all stakeholders as a just administrator and capable advisor

PROPOSED CRITERIA

1. **Reliability**

Maintaining the reliability of the IESO-controlled grid is the IESO core mandate. Reliability includes both adequacy (enough supply to meet demand) and security (ability to recover from contingency events). The IESO and Ontario are required to comply with reliability standards established by NERC, NPCC and the IESO. The IESO is facing challenges with respect to maintaining reliability in the face of the expected significant changes to the power system infrastructure e.g. changing generation fleet including new generation technologies and distributed generation, new transmission such as the HVDC line from Quebec. Maintaining reliability must be a significant factor when establishing priorities for studying market design changes.

Factors to consider when assessing the expected impact of a potential market change on reliability include:

- To what extent would the market design change be expected to contribute to the efficient and reliable integration of the expected infrastructure changes to the power system?
- To what extent would the market design change be expected to contribute to the IESO operating the integrated and interconnected power system reliably?
- To what extent would the market design change be expected to contribute to market participants operating their equipment/facilities so as to contribute to the reliable operation of the integrated and interconnected power system?

Proposed Scoring:

Higher scores would be assigned to studies of changes that are expected to have the greater positive impact on reliability.

'0' – the market change is expected to have no positive impact on reliability;

'1' – the market change is expected to have a minor positive impact on reliability;

'2' – the market change is expected to have a moderate positive impact on reliability;

'3' – the market change is expected to have a significant positive impact on reliability.

2. **Market Efficiency**

Market efficiencies include allocative, productive and dynamic efficiencies². The IESO strives to improve market efficiencies to meet its objectives of being a just administrator and

² Productive efficiency is defined as using the least amount of resources to produce a given good or service. In other words, output is being produced at the lowest possible unit cost.

Allocative efficiency is the market condition whereby resources are allocated in a way that maximizes the net benefit attained through their use. A market will be allocatively efficient if:

(1) Output is produced by the lowest cost producers

(2) Output is consumed by those most willing to pay for it and only when its value to the consumer is at least as great as the incremental cost of its production.

Dynamic efficiency relates to efficient technology choice and timely and efficient capacity investment decisions both on the supply side and the demand side of the industry.

providing value in its services. To achieve these efficiencies the IESO will enable competitively priced electricity service.

Factors to consider when assessing the expected impact of a potential market change on market efficiency include:

- To what extent would the market change be expected to improve real-time price fidelity? e.g. prices reflect prevailing supply and demand conditions; costs of providing energy are reflected in the energy price rather than in uplift charges;
- To what extent would the market change be expected to result in more efficient scheduling and dispatch of resources and transactions (including intertie transactions)?
- To what extent would the market change be expected to reduce the costs of participation in and operation of the IESO-administered markets?
- To what extent would the market change be expected to result in market-based signals that would promote short-term and long-term market efficiencies e.g. encouraging generation and delivery of electricity that meets the needs of consumers at the least cost; encouraging efficient and innovative investment in all segments of the electrical system; encouraging competition?
- To what extent would the market change affect non-energy market charges rather than energy price?

Proposed Scoring:

Higher scores would be assigned to studies of changes that are expected to have the greater positive impact on market efficiencies.

'0' – the market change is expected to have no positive impact on market efficiencies;

'1' – the market change is expected to have a minor positive impact on market efficiencies;

'2' – the market change is expected to have a moderate positive impact on market efficiencies;

'3' – the market change is expected to have a significant positive impact on market efficiencies.

3. **Sustainable Electricity Service**

The IESO supports government policies and initiatives in the area of sustainability. Higher priority should be assigned to the investigation of market changes that facilitate such government policies and initiatives e.g. demand response, renewable energy, and environmental responsibility.

Factors to consider when assessing the expected impact of a market change on sustainable electricity service include:

- To what extent would the market change be expected to enable and support demand response and facilitate customers' effective use of the IESO-administered markets?

Dynamic efficiency requires that proper incentives exist to make long-term decisions, such as those about investment and the introduction of new products and services. Dynamic efficiency also requires that the effects of decisions in one period be taken into account for future periods.

- To what extent would the market change be expected to reduce the environmental footprint of the provision and consumption of electricity in Ontario?

Proposed Scoring:

Higher scores would be assigned to studies of changes that are expected to have the greater positive impact on sustainability.

'0' – the market change is expected to have no positive impact on sustainable electricity service;

'1' – the market change is expected to have a minor positive impact on sustainable electricity service;

'2' – the market change is expected to have a moderate positive impact on sustainable electricity service;

'3' – the market change is expected to have a significant positive impact on sustainable electricity service.

4. **IESO Efficiency**

In order to meet its strategic objective of providing value for its services, the IESO strives to improve its efficiency in provision of those services. Improving IESO efficiency would include reducing the IESO operating costs of delivering existing services or improving the services provided at no extra IESO operating costs. Higher scores would be assigned to studies of changes that would have the greater

The cost of implementing changes to the market resulting from the study is not considered as part of this criterion – see criterion #5 below for discussion on how implementation costs are to be considered.

Factors to consider when assessing the expected impact of a market change on IESO efficiency include:

- To what extent would the market change impact the quality of IESO services to the market?
- To what extent would the market change impact IESO costs of providing services to the market?

Proposed Scoring:

Higher scores would be assigned to studies of changes that are expected to have the greater positive impact on IESO efficiencies.

'0' – the market change is expected to result in no improvement in IESO efficiency;

'1' – the market change is expected to result in a minor improvement in IESO efficiency;

'2' – the market change is expected to result in moderate improvement in IESO efficiency;

'3' – the market change is expected to result in significant improvement in IESO efficiency.

5. **Implementation Cost**

Market design changes, if implemented, typically require IESO and market participants to make some investment to change systems and/or business processes. Those costs can be significant especially if they are related to changing market system software. In determining which studies to undertake, the IESO should consider the potential or expected implementation costs for these changes.

Including expected implementation costs in the determination of the total weighted score also introduces the notion of a 'return on investment' to the priority scoring. The 'investment' would be the expected implementation costs and the 'return' would be the expected positive impacts described under criteria 1 through 4.

Factors to consider when assessing the expected implementation costs of a market design change include:

- To what extent would the IESO need to change its dispatch and scheduling software and systems?
- To what extent would changes be required to IESO-market participant interface systems?
- To what extent would market participants need to change their market-related and business systems and processes?

Higher scores should be assigned to studies of changes that have lower expected implementation costs.

'0' – the market change is expected to require significant implementation costs for the IESO and/or market participants;

'1' – the market change is expected to require moderate implementation costs for the IESO and/or market participants;

'2' – the market change is expected to require minor implementation costs for the IESO and/or market participants;

'3' – the market change is expected to require no implementation costs for the IESO and/or market participants.

6. **Stakeholder Support**

Being responsive to the needs and concerns of stakeholders is a strategic priority for the IESO. Therefore, the degree to which stakeholders support investigation of market changes is an important consideration for the IESO when determining priorities.

Factors to consider when assessing stakeholder support for the investigation of a market change include:

- Did a stakeholder originate the request for the market change?
- Have stakeholders expressed concern(s) with respect to that aspect of the market that would be the subject of the market change under consideration?
- To what extent are stakeholders aligned in supporting the investigation of the market change?

- To what extent would the market change favour some stakeholders over others e.g. wealth re-allocation?

Proposed Scoring:

Higher scores should be assigned to studies of changes that have greater expected stakeholder support.

'0' – the market change is expected to have no support from stakeholders;

'1' – the market change is expected to have limited support from stakeholders;

'2' – the market change is expected to have moderate/ mixed support from stakeholders;

'3' – the market change is expected to have a significant support from stakeholders.

WEIGHTING OF CRITERIA

Some of the criteria are more important than others. For example, maintaining reliability is the core mandate of the IESO and is more important than IESO efficiency. One method to reflect that hierarchy is to weight the criteria. Given the IESO mission, strategic objectives and priorities, it is proposed that the criteria be weighted as follows:

Reliability – 30%

Market Efficiency – 20%

Sustainable Electricity Service – 20%

IESO Efficiency – 10%

Implementation Cost – 10%

Stakeholder Support – 10%

ADDITIONAL FACTORS

There are additional factors that may impact the scheduling of the IESO undertaking the study of a potential market change.

Legal or Regulatory Obligations

If there is a legal obligation on the IESO, through legislation or regulation, to consider and implement a market change, such an obligation may result in that market change being studied and implemented ahead of other potential market changes, even if the application of the above criteria would not support the higher priority. Examples of such an obligation include a change to a NERC or NPCC reliability standard may require market rule amendments or a legislative requirement or regulatory order to change some aspect of the market.

IESO Resource Considerations

Another factor would be availability of IESO resources (e.g. staff with required skills; dollars) to undertake the study. If the IESO is constrained so that it cannot undertake all the higher priority studies, the IESO would need to choose which of the higher priority studies to undertake. This may result in the IESO studying a lower priority market change because the resources needed to investigate a higher priority change are fully engaged in other high priority work.

Quick Hits' vs. Long-Term Studies

Some potential market design change studies that would have a high priority score require a significant period of time and resources for study and potential implementation, if the change is approved (i.e. "long-term" study). Other studies, which may have lower priority score but still positive expected impacts, may not require a significant period of time and resources for study and potential implementation, if the change is approved (i.e. 'quick hits). In order to improve the market on an ongoing basis, it may be prudent for the IESO to undertake studies of 'quick hits' concurrently with long-term studies.

PROPOSED PROCESS FOR ESTABLISHING PRIORITIES

1. The IESO Market Evolution Group would be responsible for the prioritization process and outcomes.
2. The Market Evolution Group would complete the initial prioritization exercise by the end of 2008. Starting in 2009, the prioritization exercise would be conducted as part of the annual IESO business planning process, with quarterly reviews.
3. Market Evolution would maintain an up to date listing of all market design change issues.
4. For the initial prioritization and subsequent Business Planning cycles,
 - a. Market Evolution would review its current listing of market change issues, including issues currently being studied, against the above criteria to determine the priority score for each issue. The priority score for an issue is determined by adding the weighted criteria scores for the issue. Market Evolution would then order the issues by their priority score. Market Evolution would also, in consultation with other IESO staff, identify IESO resource requirements for the studies.
 - b. Market Evolution would ensure coordination and IESO senior management review of the results of step (a).
 - c. The list of market changes that would be studied over the business planning horizon would be subject to stakeholder review and feedback through the normal stakeholder review process of the IESO Business Plan and through the stakeholder forums directly affected by the prioritization e.g. Stakeholder Advisory Committee, Technical Panel, Market Pricing Working Group.
5. As new market change issues are identified or as other circumstances warrant, Market Evolution would determine priorities for new issues and review existing priorities, in consultation with stakeholders.
6. On a quarterly basis, Market Evolution would review the current listing of market change issues and priorities, and make changes as required, in consultation with stakeholders.
7. If significant changes occur e.g. new market change issue or change in IESO resourcing, Market Evolution would undertake a thorough review and re-prioritization of all current issues in the same manner as would be undertaken during the Business Planning process.

CURRENT LISTING OF MARKET DESIGN CHANGE STUDIES

STUDIES ALREADY UNDERWAY

Market Evolution

1. Exploration of Enhancements to Dispatch Methodology (SE-61)
2. Energy Forward Market (SE-21)

Market Pricing Working Group Issues

1. Issue #7: Intertie transactions setting RT price (SE-18)
2. Issue #9: Peak vs. Average in PD Sequences (SE-54)
3. Issue #13: CAOR pricing and treatment (SE-72)
4. Issue #38: Treatment of Shared Activation of Reserve (SE-37)
5. Issue #39: Inter-market Trading of Operating Reserve (SE-60)
6. Issue #40: LMP for intertie transactions (SE-

Market Rules Issues

1. MR-00351: Segregated Mode of Operation Transaction Uplift Charges
2. MR-00350: Change to 18-month Outlook Frequency
3. MR-00348 and MR-00349: EDAC (SE-21)
4. MR-00347: Linked Wheel Uplift Charges
5. MR-00339: Temporary Power without RWM (SE-51)
6. MR-00338: Linked Wheel Economic Dispatch (SE-45)
7. MR-00329: Change Minimum AGC Requirement (SE-33)
8. MR-00297: Changes to Outage Management (SE-27)

Other

1. Embedded/Distributed generation (SE-57)
2. Transmission Rights Market (SE-68)
3. Operating Reserve Policy (SE-57)

STUDIES NOT YET UNDERWAY

Market Evolution Issues

1. More Efficient Uniform Pricing

Market Pricing Working Group Issues

1. Issue #4: Ramp rate in RTU Sequence
2. Issue #5: Simultaneous Use of Ramping for Energy and OR
3. Issue #16: Analysis of Historical Nodal Prices
4. Issue #19: Penalty and Line Loss factors
5. Issue #22: Pricing Physical Constraints
6. Issue #23: Uncertainty in Constraints Payments
7. Issue #25: MIO in RTC but not in RTU
8. Issue #26: Integration of Market and Regulated Prices

9. Issue #27: Timing Difference between RTU and RTC Sequences
10. Issue #31: MIO Pricing Methodology
11. Issue #32: Role of IOG in Off-Peak hours
12. Issue #34: Breaker Status of Quick-Start Generators

Market Surveillance Panel Recommendations

1. SMO and IOG offset (same issue identified in MR-00351)
2. Self-induced CMSC for generators
3. IOG offset for affiliates importing and exporting simultaneously
4. Treatment of Regional Reserve Sharing (RRS)
5. Review of Net Interchange Scheduling Limit (NISL)
6. Generator output reporting
7. Publication of masked bids

Other

1. OPA Peaking Gas-fired Generation
2. Market Monitors Sharing Information
3. Environmental Tracking
4. Market Capacity Mechanism