

Draft IMO Economic Demand Response Pilot Outline

The following draft outline for an economic demand response pilot that was developed based on the objectives, target markets and barriers outlined in the document “*Economic Demand Response Pilot*” provided to Market Advisory Council members on September 24, 2003. Comments and responses to the questions posed in that document by a wide variety of stakeholders are reflected in this draft outline.

The objective of the Economic Demand Response Pilot is intended to build the Ontario market’s demand response “capability” and infrastructure (loads, suppliers, LDCs and the IMO) while the provisions of the *Electricity Pricing, Conservation and Supply Act*, Bill 210, are in effect. The specific purpose of the pilot would be to “kick start” demand responsiveness in Ontario by working to overcome specific barriers that are currently preventing some Ontario loads from being responsive to wholesale market price signals.

Additional detail will be developed based on further consultation with stakeholders.

This document is divided into 13 sections that address different aspects of the pilot program, following some of the sections are questions and comments that IMO staff wish to discuss with stakeholders.

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|----------------------------|---------------------------------------|
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1 Eligibility

- Individual loads with
 - IMO-compliant interval meters, or
 - retail interval meters (retail embedded loads)
- Retail embedded loads with interval meters represented by an aggregator
- Non-interval metered loads represented by an aggregator, provided that a statistically reliable sample of the group have interval meters upon which to determine the demand response

provided. Note that the proportion of a load group that will constitute a “statistically reliable” sample will vary by group size, load type (i.e. residential or commercial), and the variability of the demand response to be measured.

- Given the stated objective of “increasing the demand responsiveness of the market”, pilot participants will need to demonstrate to the IMO’s satisfaction that they are providing incremental demand responsiveness. The IMO reserves the right to review the incremental demand response provided by the pilot participant within six months and has sole discretion over whether a pilot participant may continue to participate and/or what level of demand response is “incremental”.
- The IMO reserves the right to limit participation in the pilot program based on the program’s objectives, target market segments, and barriers. Dispatchable loads and loads participating in the Hour Ahead Dispatchable Load (HADL) program are not eligible.

Comments and Questions for discussion:

Are these reasonable and appropriate eligibility requirements?

2 Minimum Bid Size

- The minimum level of demand response for which compensation will be provided is 500 kW average over an event period.

Comments and Questions for discussion:

Is this an appropriate minimum bid size?

How should an “event period” be defined?

3 Term of Agreement

- Two years
- Terms of up to three years may be considered by the IMO in specific circumstances where pilot participants are making significant capital investments and require a longer term)

Comments and Questions for discussion:

Is this a suitable term?

What specific circumstances should be considered for extending the term?

4 Price Threshold

- Pilot participants may choose from one of three pre-dispatch price thresholds at which they will provide demand response:
 - \$120/MWh
 - \$150/MWh
 - \$200/MWh
- Pilot participants may switch to a different price threshold once per year, but the change would only be applied prospectively, not retrospectively

Comments and Questions for discussion:

Is this an appropriate price threshold?

Is frequency of activation critical? (This is relevant to the provision of OR.)

The price threshold will impact on the frequency to provide demand response. **Based on pre-dispatch prices (May 2002 – May 2003)**, the percentage of time that real-time prices were greater than the threshold price were as follows:

Pre-Dispatch Price	1 Hour Out		3 Hours Out	
	% of time	Frequency	% of time	Frequency
\$120/MWh	9.5	866	9.7	884
\$150/MWh	5.6	512	5.6	509
\$180/MWh	4.0	365	4.0	359

NOTE: this information is for illustration purposes only and **may not be indicative of the actual frequency** that the Economic DRPP will be called upon.

5 Notice Period

- Pilot participants may choose one of two “notice periods”:
 - Three hours (pilot participant’s demand response decision to be based on pre-dispatch prices three hours prior to the hour when demand response will be provided).
 - One hour (demand response decision to be based on pre-dispatch prices one hour prior)
- Pilot participants may switch to a different notice period once per year, but the change would only be applied prospectively, not retrospectively

Comments and Questions for discussion:

Which notice period(s) would make the most sense for pilot participants?

6 Demand Response Payment

- Pilot participants will be provided with compensation for the actual demand response provided (according to the estimation methodology outlined below) based on the actual pre-dispatch prices and their notice period.
- The price paid for the demand response will always be based on the pre-dispatch price and the notice period chosen by the pilot participant. For example, in the case of a three hour notice period, if the pre-dispatch price for the period starting 4 PM was \$220/MWh at 1 PM, a pilot participant providing 2 MW of demand response in the period would receive a payment of \$440 for one hour of demand response (2MW x 1 hour x \$220). If the pre-dispatch price for the period starting 5 PM was \$250/MWh at 2 PM, a pilot participant providing 2 MW of demand response in the period starting at 5 PM would receive a payment of \$500 for 1 hour of demand response regardless of the predispach price for this period at 1 PM or any other time.
- There is no minimum requirement for any given period; pilot participants will be compensated for the actual demand response provided.

7 Minimum and Maximum Event Duration

- The pilot program design is based on energy in an hour rather than a minimum duration. Since actual pre-dispatch prices and the pilot participants chosen price threshold and notification period define an “event”, there is no minimum event duration. The duration of an “event” will be driven by pre-dispatch prices and pilot participants can choose whether or not to provide demand response based on the profile of pre-dispatch prices at the time.
- The maximum event duration is 16 hours, regardless of pre-dispatch prices.

Comments and Questions for discussion:

Does a maximum need to be specified?

Would a maximum of 6 hours be acceptable?

8 Pilot Participant Notification

- IMO will provide pilot participants with access to a special web page with pre-dispatch prices and appropriate alarm features based on their chosen notification period and threshold price. Beyond access to this web site, the IMO will not provide “dispatch instructions” to pilot participants.

- Each time the pre-dispatch price exceeds the pilot participant’s threshold price (and considering the notification period), pilot participants must inform the IMO of their intention to provide demand response. Pilot Participants who fail to do so will not be eligible for payment for that “event.”

Comments and Questions for discussion:

Is this form of notification sufficient to enable pilot participant response?

How should pilot participants notify the IMO of their intention to provide demand response?

9 Provision of Operating Reserve

- Pilot participants choosing a “one hour” notice period that can demonstrate to the IMO’s satisfaction that they can provide demand response reliably in 30 minutes or less, and meet the requirements for the provision of operating reserve, would be eligible to provide 30 minute operating reserve or 10 minute non-spinning operating reserve to the IMO. The pilot participant will need to provide documentation to support their claim and would also need to provide an estimate of the OR capacity available by time of day, day of week and seasonally.
- Pilot participants offering such operating reserve will receive the market clearing operating reserve price for the periods for which OR is provided.
- During periods when the pre-dispatch prices exceed the pilot participant’s threshold price, the pilot participant will be deemed by the IMO to have withdrawn its offer for OR and will not be compensated for OR during this period.

10 Baseline Methodology

- The baseline for a given pilot participant will be based on the highest five of the previous ten weekdays (excluding holidays).
- The baseline for pilot participants who advise and can demonstrate to the IMO that the demand response they will be providing is weather sensitive will be adjusted to reflect this weather-sensitivity.

Comments and Questions for discussion:

Is this an appropriate method of determining baseline?

The proposal requires that pilot participants demonstrate that the response is incremental. What would be acceptable?

Can pilot participants provide an estimate of the demand response they will provide? Can they provide

an estimate of time frame?

11 Calculation of Demand Response

- The demand response provided by a pilot participant during a given event will be based on the calculated baseline less their actual metered load during the event, for that same period.
- For pilot participants with non-interval metered load, the demand response provided by the pilot participant will be based on the calculated baseline less the load profile of the interval-metered sample (weather corrected) for that same period adjusted for the total size and consumption of the pilot participant group.

12 Exit strategy

- The Economic Demand Response Pilot Program will be phased out and will run only until 2006 or such other time as indicated in the contract or market rules.
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Other Questions for stakeholders:

Should demand response be voluntary in real time?

Is there any need or benefit to dividing the potential pilot participants into geographical classes as was done for the Emergency DRP? I.e. the Northwest and rest of Ontario – are there other divisions that may be beneficial?

Should there be any limits set to the number of times a pilot participant can actually provide DR under the pilot program?