

Demand Forecast Deviations Working Group

Presented to: Stakeholder Advisory Committee

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January 24, 2007



- **SAC- September 5, 2006 meeting:**
 - Asked the IESO to form a working group to review the demand forecast methodologies used in the various time frames and assess the deviations which have resulted using this forecast methodology
 - Asked that the group report back to the SAC with its findings and recommendations
- **A stakeholder engagement plan was developed and a working group was formed**
- **Working group met 4 times and accomplished the following:**
 - Finalized stakeholder engagement plan and terms of reference
 - Developed a work plan covering a list of topics for discussion and deliverables
 - Developed a list of recommendations and associated cost benefit analysis

Summary of Recommendations

Demand Forecast Deviations Working Group Summary of recommendations			
#	Recommendation	Cost	Benefit
1	Weather forecasts should include data for Windsor and Ottawa. In addition weather data to provide a cross sectional representation of the Southern Ontario zones should be considered. Weather forecast input should be actual raw data to be manipulated within the forecast tool directly or as a weighted value to represent a percentage impact within the zone. Both approaches should be explored.	Initial cost estimate is < \$1000/month	Improved model accuracy resulting in reduced demand forecast error. Preliminary testing showed a reduction in forecast error of 0.6% (winter) and 0.8% (summer) by forecasting 5 zones.
2	The IESO should consider obtaining weather forecasting services from an additional weather service provider.	Weather forecasts (data only) from 5 to 10 sites can be obtained for \$500 - \$1000/month.	Multiple forecasts can be created using different weather forecast inputs for comparison purposes. A forecasting tool can determine the weighting of multiple forecasts based on historical accuracy and impact.

Summary of Recommendations

Demand Forecast Deviations Working Group Summary of recommendations			
#	Recommendation	Cost	Benefit
3	When choosing a new demand forecasting tool, the IESO should include the capability to integrate additional weather or other demand dependant variables and the ability to redefine geographic zones to satisfy both demand forecast accuracy and associated zone boundary transmission limits. In addition the tool set should be capable of producing intra hour demand results down to a 5 minute interval solution.	This capability exists in most of the demand forecasting tools that are commercially available. Integration of a 5 minute forecast into existing tools could be done through a vendor change request (cost < \$50K).	With the addition of relevant variables to analyze and manage, a move towards an extremely automated process is required. Several industry accepted solutions are available which provide very positive results in terms of accuracy, flexibility and time savings.
4	When choosing a new demand forecasting tool, the IESO should include the capability to assess the impact of time of use billing. Conservation and demand management and dispatchable load on demand forecasts. In addition the IESO must develop the capability to track the impact of those variables that are dispatched by the IESO or part of the IESO-administered market on historical demand data as a portion of the total demand.	This capability exists in most of the demand forecasting tools that are commercially available. Additional effort will be required to include the impact of these initiatives in historical demand data. This will require the support of IESO IT&I staff and the cost is estimated to be < \$50k.	These demand variables can result in significant errors. The ability of a demand forecasting tool to forecast their impact will reduce forecast errors. Recompiling the total demand will allow visibility of the impact of those initiatives dispatched by the IESO or part of the IESO-administered market and will allow historical demands to continue to be relevant for similar day forecasting.

Summary of Recommendations

Demand Forecast Deviations Working Group Summary of recommendations			
#	Recommendation	Cost	Benefit
5	The IESO should initiate a survey of the wholesale consumer market participants and LDC's to determine their price response characteristics. This activity should be coordinated between the IESO and the OPA to ensure that any information required for OPA demand response initiatives is included in the survey.	Minimal cost to the IESO in creating and administering the survey.	Understanding the magnitude of price responsive demand will allow the IESO to determine the best means of including the impact on the demand forecast.
6	<p>The IESO should publish, on a monthly basis, the monthly on and off peak demand forecast error and bias. These measures should be published for all three forecasting timeframes (day ahead; 1-hour ahead; 3-hour ahead) and for comparison purposes, be rolled up to winter and summer seasons. In addition, to support the development of performance targets, the IESO should publish historical data in this format (on/off-peak monthly and seasonally) for the period at least 2004 to 2006.</p> <p>Using historical data (2004 to 2006), the IESO during 2007 should recommend new monthly and/or seasonal corporate performance measures and appropriate targets for implementation in 2008. As the IESO gains further experience using the new demand forecasting tool, targets for incremental improvement should be developed.</p>	Small incremental work in presenting forecast data in this way and in posting it on the IESO website. A manual process can be used initially with minimal incremental cost.	<p>Publishing the data in this format will provide better visibility of the IESO's demand forecast performance on and off peak and on a seasonal basis.</p> <p style="text-align: right;">5</p>

- **Working Group will dissolve pending SAC input on recommendations and no further action**
- **IESO will include tool recommendations in user requirements for a new demand forecasting tool**
- **IESO will implement other recommendations as requested**