

Stakeholder Engagement Plan SE-28

Demand Forecast Deviations



I. Introduction

The purpose of this initiative is to examine ways to improve the IESOs day-ahead and the day-at hand demand forecast performance. Forecast performance includes both forecast accuracy and forecast bias¹. Currently, the IESO uses a similar day forecasting methodology to develop both day-ahead and day at hand demand forecasts. Demand forecasts impact unit commitment and/or transaction decisions made by both the IESO and market participants. They also provide operational decision-making information to participants.

Background

The IESO uses a Similar Day Load Forecasting (SDLF) tool to find similar days based on temperature, wind speed, illumination and day type. Similar days are normally chosen from a date range of days from the forecast day and from the previous 4 years of data. The east and west system is forecasted separately. The SDLF tool will choose up to 4 suitable days as potential inputs to the forecast day. The SDLF tool plots each of the similar days chosen and the average of the chosen days. The IESO is investigating the use of other demand forecasting tools that provide multiple forecast methods for comparison purposes. A new demand forecasting tool, replacing SDLF is scheduled for implementation in the third quarter of 2007.

During the 2006 OEB rate hearing, the IESO agreed to publish, on a monthly basis, bias calculations and the number of days in which the absolute value exceeds 3%. The IESO began publishing this data in July 2006. Although the IESO publishes this data, there are no industry standards for demand forecasting performance measures. The IESO has corporate measures for forecast error and bias (See Appendix A).

Also at that hearing, it was recommended that a task force be established to examine ways to narrow the range of forecast deviations and to report back to the Stakeholder Advisory Committee (SAC) with its recommendations. The SAC agreed, at their September 5, 2006 meeting, 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. The group shall report back to the SAC with its findings and recommendations.

¹ Forecast accuracy is the difference between the demand forecast and the actual hourly Ontario demand. Forecast bias is the percentage that the hourly Ontario demand forecast was above or below the actual .hourly Ontario demand.

Key Issues

1. Demand forecasting will become more complex as a result of price sensitive demand response, conservation initiatives and smart metering. IESO tools and processes must be adaptable to allow these factors to be considered in demand forecasts and to track their impact. Improving the accuracy of demand forecasts today, will be of benefit in the future when more factors or criteria come into play.
2. Forecast errors must be minimized to avoid poor commitment and/or transaction decisions by market participants. A forecast bias that is consistently and materially either above or below the actual demand experienced can lead to sub-optimal operation and market price outcomes, and counter-intuitive actions by the market participants.

II. Stakeholders

Stakeholders most interested in these discussions would be generators, marketers and price sensitive consumers. Stakeholder efforts will focus on these customers.

III. Stakeholder Engagement Goals and Objectives

Goal

The goal of the stakeholder engagement program is to seek feedback from stakeholders on:

1. Demand forecasting methods that would improve the IESOs demand forecasting accuracy.
2. Required changes to IESO performance measures as a result of expected improvements in demand forecasting accuracy.

Objectives

1. Review the current methodology used to prepare Ontario primary demand and market demand forecasts.
2. Examine ways to narrow the range of forecasting deviations including forecast bias.
3. Provide recommendations relating to forecast accuracy improvements to the Stakeholder Advisory Committee including a cost benefit analysis associated with the recommendations.
4. Review the existing demand forecast performance measures used by the IESO and provide recommendations on any changes to the Stakeholder Advisory Committee.

IV. Stakeholder Engagement Approach and Methods

The stakeholder engagement approach proposed involves the formation of a working group as well as stakeholder feedback from web based postings.

The working group will afford the opportunity for stakeholders to provide the IESO with timely advice on the resolution of short term issues that can be addressed and provide input on longer term solutions. The working group will be open to all stakeholders and the draft terms of reference will be discussed at the first meetings. Those interested are asked to submit an e-mail to the IESO at

stakeholder.engagement@ieso.ca. The intention is to obtain strong representation by those affected by demand forecast errors. The working group will also assess the costs and benefits associated with this initiative and use it as a guide as to how much work will be completed.

Web-Based Postings

Web-based posting will provide all stakeholders with an efficient lower cost method to be informed of the process and provide feedback as desired. This will provide the opportunity for all interested stakeholders to offer feedback on any proposed changes as a result of the working group meetings.

This is a public consultation and information supplied will be posted on the IESO website including identification of the contributing participant.

Stakeholder Advisory Committee Session

The results of the working group will be presented to the Stakeholder Advisory Committee. The Committee will consider the results and may use this information to provide input to the IESO Board and senior management on the proposed changes and the priority that should be applied to this issue.

V. Decision Making Steps and Schedule of Activities

Stakeholder Engagement Schedule	
Activity	Target Date
1. Post and Communicate Demand Forecast stakeholder plan and terms of reference for the working group.	Mid October
2. Closing date for stakeholder written submissions on stakeholder plan and submission of names for the working group.	Early November
3. Posting of stakeholder working group and written comments on stakeholder plan.	Mid November
4. Meetings of working group to review and discuss alternatives.	December 2006 – January 2007
5. Complete meeting material for Stakeholder Advisory Committee meeting.	January 10, 2007
6. Present working group results to the Stakeholder Advisory Committee.	January 24, 2007
7. Present results to the IESO Board of Directors (if required).	February 2007
8. Post Board decision (if required).	February 2007

Appendix A

Demand Forecasting Performance Measures - 2006

Category/Name	Measure	Criteria	Performance Standard
Day Ahead Hourly Demand Forecast	Accuracy	Average absolute error for the year	$\leq 2.5\%$
		Average bias range for the year	$-5\% \leq \text{BIAS} \leq +5\%$
Day at Hand Hourly Demand Forecast – 3 Hours Ahead of Dispatch Hour	Accuracy	Average absolute error for the year	$\leq 2.0\%$
		Average bias range for the year	$-5\% \leq \text{BIAS} \leq +5\%$
Day at Hand Hourly Demand Forecast – 1 Hour Ahead of Dispatch Hour	Accuracy	Average absolute error for the year	$\leq 1.5\%$
		Average bias range for the year	$-5\% \leq \text{BIAS} \leq +5\%$