

April 20, 2006: IESO Viewing Gallery

### Forecasts and Assessments Standing Committee Meeting Notes

#### Attendees:

Name	Company
Dave Gault	Kingston Cogen
Peter Grutke	Ontario Power Generation
Jason Herod	Energy Savings Group
Stella Lam	AECL
Craig Lemon	Union Gas
Leo Liao	Energy Savings Group
Peter Lo	Toronto Hydro
Chun Hung Ngai	Toronto Hydro
Sushil Shah	Ontario Power Generation
Cynthia Wang	Energy Advantage Incorporated
Tom Wasik	Enersource Hydro Mississauga
Anne Barr	IESO
Greg Hine	IESO
George Katsuras	IESO
Dan Rochester	IESO
Jessica Savage	IESO
Andrew Trachsell	IESO
Don Tench	IESO

#### Agenda Item 1: Introduction

- IESO staff presented an overview of the Forecasts and Assessments Standing Committee and outlined the process for stakeholdering the changes to the 18-Month Outlook.

#### Agenda Item 2: Demand Forecast Normalization

Participants had the following questions/comments (IESO responses in italics):

1. Will changes to market manuals be stakeholdered?
  - *If the changes to the 18-Month Outlook necessitate market manual changes, the market manual changes will be stakeholdered in a subsequent stakeholder engagement session.*
2. With respect to the economic growth variables, where do the “consensus” forecasts come from?

- *The employment and housing starts forecasts are obtained from financial institutions.*
3. If there is a step-change in conservation, how would the model reflect that change?
    - *Currently, only natural conservation is incorporated in the model. As conservation programs are developed their impacts will be included in the forecast.*
  4. For the purpose of weather normalization, others in the industry have moved away from a 30-year weather history to a shorter history such as 5 or 10 years. Has the IESO considered using a shorter weather history than 30 years for weather normalization?
    - *The IESO has contemplated a shorter history for weather normalization but favours a longer history in order to capture a wider range of weather scenarios.*
  5. Does moving from Weekly Normal weather to Monthly Normal weather lead to more accurate forecasts? Can you produce a back-cast against the actuals to determine whether it does?
    - *IESO will follow-up with the analysis and post the results – refer to Attachment A.*
  6. A generator representative indicated that the shutdown of coal is critical and indicated that the IESO is moving in the right direction with respect to the changes to the demand forecast.

### Agenda Item 3: Hydroelectric Capability Forecasts

1. The new method for forecasting hydroelectric capability is based on historical hydroelectric production plus contribution to operating reserve (OR). If the accepted hydroelectric OR was activated, the new calculation would overstate hydroelectric capability.
  - *The IESO will investigate the occurrences of hydroelectric OR activation.*
2. Does the new forecast consider low water years?
  - *Yes; the forecast is based on market history which includes two low water years (2003 and 2005). Going forward, more observed hydro data will be included so that the forecast is based on a longer history.*
3. How are hydroelectric outages considered in the new hydroelectric capability forecast methodology?
  - *Because the new forecast is based on historical production values, the impact of actual hydroelectric outages is considered, but the specific impacts due to future hydroelectric outages are not explicitly considered. This leads to a mismatch between submitted future planned hydro outages and the impact of these future planned outages on Reserve Above Requirement (RAR). For most individual hydro units, the outages are small and wouldn't have a substantial impact on RAR. The IESO will consider methods to capture the impact of outages and derates on the larger hydro units such as Beck and Saunders. The IESO also invites stakeholders to provide ideas for addressing this issue.*
4. Will you be revising the form that participants use to submit information about generating units (Form 1230)?
  - *Uncertain at this time but the IESO would seek market participant input if changes are required.*
5. Will the hydroelectric capacity forecast profile continue as shown in the most recent 18-Month Outlook.
  - *Yes.*
6. Do you consider the impacts of hot weather on gas-fired generator production?

- ***To some extent, gas-fired generators identify varying production capability, under different weather conditions, but there is presently no clear definition of the changing production capability under different weather conditions. This topic is worth consideration. However, it could impose additional reporting requirements on market participants.***

#### Agenda Item 4: Impacts on Reserve Above Requirement (RAR)

1. How many more outage requests would be rejected as a result of the changes to the demand and hydroelectric capability forecasting methodologies?
  - ***The distinction needs to be made between near-term and longer-term outage assessments. When outages are assessed in the near-term, the changes to RAR values in the 18-Month Outlooks have no impact. For the longer-term, the changes may reduce the occurrence of the IESO having to revoke or reject outages that were not previously identified to be at risk.***
2. A generator representative asserted that the close to 2000 MW reduction in the hydroelectric capability forecast for the summer peak is a move in the right direction.
3. Is the message (in the 18-Month Outlook) that additional resources are needed?
  - ***Yes; the methodology changes were intended to better reflect the need for resources in the forecast.***

#### Agenda Item 5: Required Reserve Calculation

1. Does the required reserve calculation assume that Ontario does not receive imports from neighbouring control areas?
  - ***Yes; the RAR values published are based on zero imports from outside of Ontario. IESO only considers imports into Ontario that are capacity backed. Northeast Power Coordination Council (NPCC) guidelines allow for imports to be considered. However, IESO's current interpretation of the guideline is that those imports must be capacity-backed.***
2. What is the consequence of not meeting the NPCC resources adequacy criterion equivalent to an annual loss of load expectation (LOLE) of 0.1 days per year?
  - ***Currently, there is no NPCC sanction in place for failure to meet the LOLE criteria. Enforceable penalties are expected to be in place once the North American Electric Reliability Council becomes the electric reliability organization (ERO) later this year.***
3. What are the reserve requirements in neighbouring control areas?
  - ***NYISO runs MARS (Multi-Area Reliability Simulation Program) to arrive at an installed capacity reserve requirement (approximately 18%).***

#### Agenda Item 6: Next Steps

- IESO staff requested that market participants provide written feedback on the changes to the 18-Month Outlook by May 4, 2006.

## Attachment A

For the period January 2002 to December 2005 we produced two forecasts of daily peak demand - one based on Weekly Normal weather and one based on Monthly Normal weather. With the other independent variables represented by actuals, we could isolate the impact of the two weather scenarios on forecast accuracy.

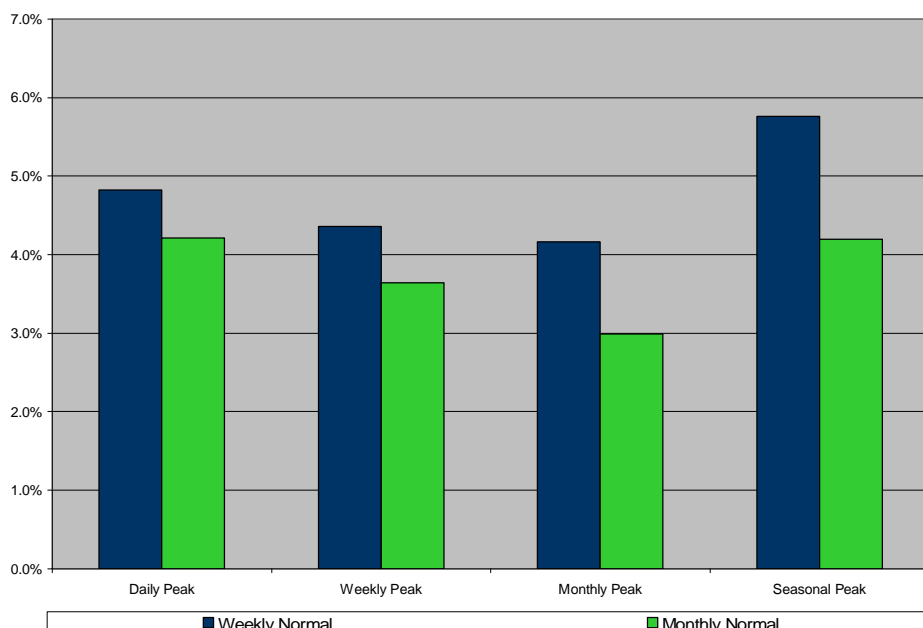
We evaluated the accuracy of the competing forecasts at four levels; the daily peak demand, the weekly peak demand, the monthly peak demand and the seasonal peak demand. Although the question was intended that the accuracy be measured at the daily peak level, the peak demand forecast is primarily used by the IESO at the weekly or seasonal level.

At each of these levels we calculated the Mean Absolute Percent Error (MAPE) to determine whether the Weekly Normal or Monthly normal weather yielded more accurate forecasts. Table 1 contains the results and Figure 1 displays them.

**Table 1 – Mean Absolute Percent Error**

	Peak Demand (Weekly Normal Weather)	Peak Demand (Monthly Normal Weather)
Daily Peak	4.82%	4.21%
Weekly Peak	4.36%	3.64%
Monthly Peak	4.17%	2.99%
Seasonal Peak	5.76%	4.19%

**Figure 1 – Mean Absolute Percent Error**



As can be seen in both the table and the graph, the move to Monthly Normal weather from Weekly Normal weather leads to more accurate peak demand forecasts at each of the levels.