



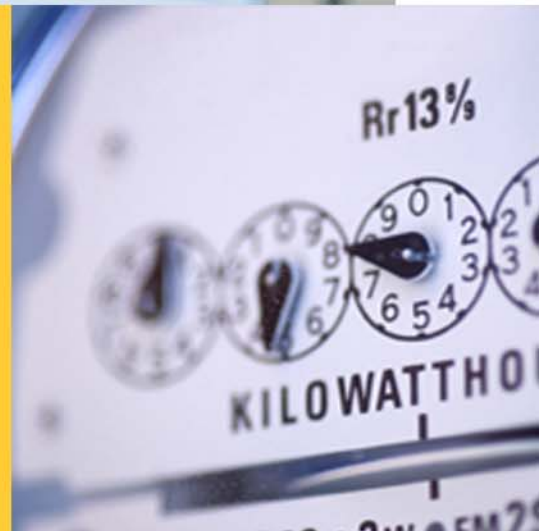
Independent Electricity Market Operator



18-MONTH OUTLOOK:

## Ontario Demand Forecast

From January 2005 to June 2006



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## Executive Summary

The IMO has a responsibility to forecast the demand for electricity on the IMO-controlled grid and to assess whether the existing and proposed generation and transmission facilities are adequate to meet Ontario's needs. This document presents the demand forecast for the 18-month period from January 2005 to June 2006 and supersedes that portion of the previous 18-month forecast released in September 2004.

### Economic Outlook

The economic assumptions that underpin the forecast have been updated to reflect the most recent outlook for the Ontario economy. The outlook remains much the same with modest economic growth and global economic uncertainty the two main themes. Economic growth has been robust due to high commodity prices and strong manufacturing performance. However, higher industrial input prices, a lower U.S. dollar, large U.S. budget deficits and the political world climate has cast a dark cloud over exporter and consumer confidence. One positive aspect of the appreciation of the dollar is that it has deferred potential interest rate hikes allowing domestic consumption and business investment to continue unabated. Expansion of the Ontario economy in 2005 will therefore rely on more on Canadian consumers and businesses as demand south of the border weakens.

### Actual Demand

Total actual and weather-corrected energy demand for the months of September, October and November were higher than forecasted in the previous publication. The weather-corrected energy demand for the period of September through November has shown an increase of 3.2% on a year-over-year basis while actual demand showed growth of 0.5% for the same period. All three months were milder than normal. Manufacturing activity has been up, on a year-over basis, since July but the rate of growth has continued to slow as higher input costs and a higher dollar are starting to squeeze profits and demand.

The weather-corrected monthly peak demands for the period of September through November were all lower than forecasted. Only the actual peak for September was higher than anticipated.

### Methodology

The methodology utilized to generate this forecast has not changed from the previous Outlook. The models were updated to incorporate the data for the months of July, August and September. A correction was made to the variables that define the Christmas holiday period for 2005-06.

### Demand Forecast

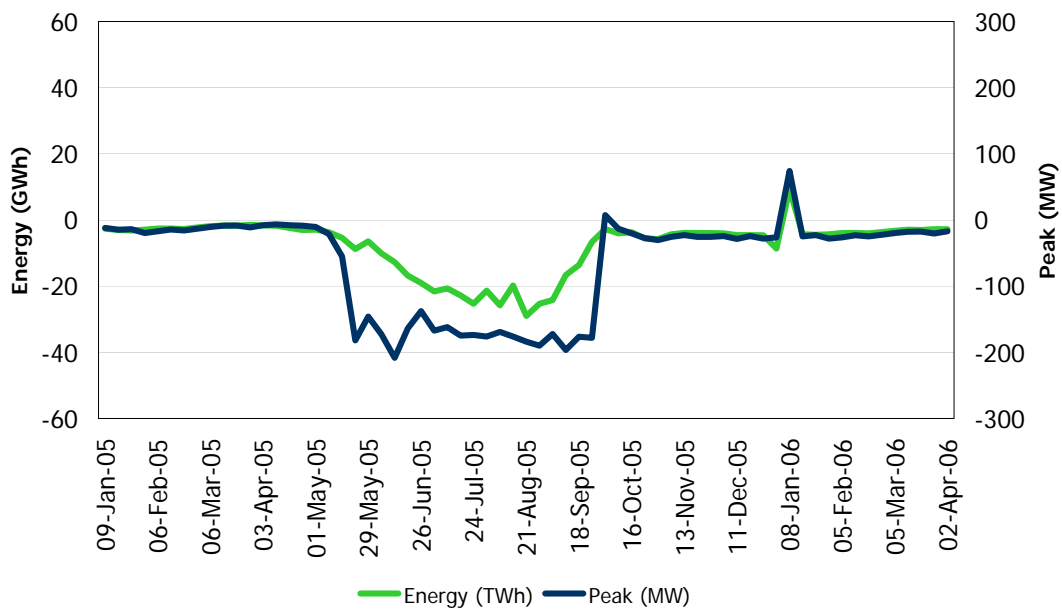
Energy demand is expected to show a modest increase over the weather-corrected total for 2004. The 0.6% growth rate for 2005 is not dissimilar to the 1.1% growth for 2004 once the rate is adjusted for the impact of the leap year. Adjusting for the leap year gives growth rates of 0.9% and 0.8% for 2004 and 2005 respectively. Peak demands are generally lower throughout the forecast compared to the previous forecast due to the incorporation of actual data and the updated economic forecast. Table 1 has the Normal weather, Expected seasonal and Extreme weather peak demands for the seasons of the 18-month forecast.

**Table 1: Forecasted Peak Demands**

Season	Normal Weather Peak (MW)	Expected Seasonal Peak (MW)	Extreme Weather Peak (MW)
Winter 2005	23,891	24,721	25,594
Summer 2005	23,636	25,412	26,583
Winter 2006	23,991	24,750	25,611

Figure 1 graphically displays the difference in weekly energy and peak demand between this forecast and the previous 18-month forecast. Generally the values are lower due to the change in the economic outlook. Demand is lower throughout the summer due to the inclusion of actual demand and the model re-estimation. Finally the spike towards the end of the graph is a result of the change in the holiday specification. These changes are relatively small.

**Figure 1: Comparison of Current and Previous Forecast (Current less Previous)**



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## 1.0 Introduction

### 1.1 Outlook Documents

The Ontario Electricity Market Rules (Chapter 5 Section 7.1) require that the Independent Electricity Market Operator (IMO) produce and publish demand forecasts on a quarterly basis for the next 18 months. This Ontario Demand Forecast meets this requirement and covers the 18-month period from January 2005 to June 2006. It supersedes those common portions of the previous forecast released September 24, 2004 for the period January 2004 to March 2005.

### 1.2 Demand Forecast Document

This document provides an 18-Month forecast of electricity demand for Ontario, based on the stated assumptions and using the methodology described in the document entitled “Methodology to Perform Long Term Assessments” (IMO\_REP\_0044) (found on the IMO web site at [http://www.theimo.com/imoweb/pubs/marketReports/Methodology\\_RTAA\\_2004sep.pdf](http://www.theimo.com/imoweb/pubs/marketReports/Methodology_RTAA_2004sep.pdf)). Readers may envision other possible scenarios, recognizing the uncertainties associated with various input assumptions, and are encouraged to use their own judgement in considering possible future scenarios. This forecast provides a base upon which changes in assumptions can be considered.

The Ontario demand is the sum of coincident loads plus the losses on the IMO-controlled grid. This demand forecast was based on actual demand, weather and economic data as of the end of September 2004. Actuals reported since the time of the forecast (October and November) have been incorporated into the tables and figures of this document.

Section 2.0 briefly looks at historical demand. A more detailed discussion of historical demand and the factors that shape it can be found in the 10-Year Ontario Demand Forecast (IMO\_REP\_0173) document. Section 3.0 describes the assumptions used in this forecast of electricity demand and Section 4.0 presents the forecast. Appendices A through C contains additional demand forecast details and analysis.

Readers are invited to provide comments on this report or to give suggestions as to the content of future reports. To do so, please call the IMO Help Centre at 905-403-6900 or 1-888-448-7777 or send an email to [helpcentre@theIMO.com](mailto:helpcentre@theIMO.com), or to [forecasts.demand@theIMO.com](mailto:forecasts.demand@theIMO.com). Copies of the forecast and weather scenarios are available upon request.

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## 2.0 Historical Demand

This section looks at recent historical weekly energy and peak demand. Ontario measures peak demand as the average over the course of a clock hour. The weather-corrected numbers are generated based on Normal weather. Weather-corrected demand for August 2003 has been adjusted to incorporate an estimate of the demand lost over the period August 14<sup>th</sup> to August 24<sup>th</sup>. Actual figures for August 2003 represent the true consumption for that time period.

### 2.1 Historical Energy Demand

Actual energy demand has averaged annual growth of 1.5% over the 1997 to 2003 time frame. Demand is a function of the level of economic activity, the rate of population growth and the use and number of end-use appliances. Energy demand peaked in the spring of 2003 remaining flat until this past summer where it has started to increase again. This corresponds with the appreciation of the Canadian dollar and the level of industrial activity.

Figure 2.1 shows the 52-week moving average of actual and weather corrected energy demand. As noted above, energy demand had been quite strong before softening to close out 2003.

**Figure 2.1: Energy Demand – 52-Week Moving Average**

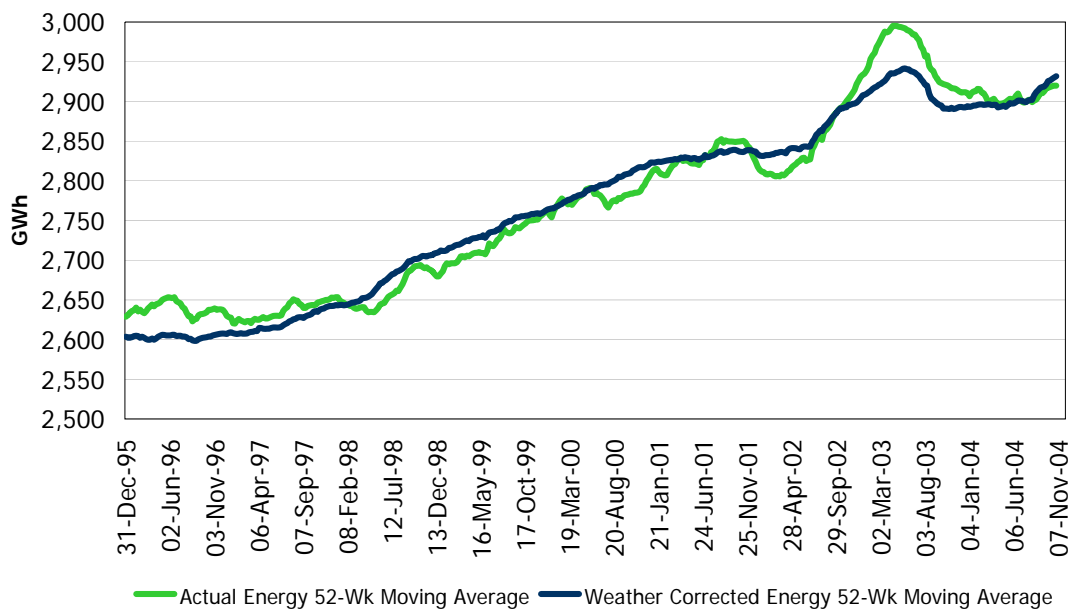


Table 2.1: Actual and Weather Corrected Weekly Energy Demand

Week Ending	Actual Energy (GWh)	Weather Corrected Energy (GWh)	Weather Correction (GWh)	Week Number	Notes for Week
07-Sep-03	2,689	2,733	44	36	Labour Day
14-Sep-03	2,868	2,782	-87	37	
21-Sep-03	2,772	2,799	27	38	
28-Sep-03	2,679	2,731	52	39	
05-Oct-03	2,731	2,631	-100	40	
12-Oct-03	2,695	2,774	79	41	
19-Oct-03	2,667	2,653	-14	42	
26-Oct-03	2,794	2,711	-83	43	
02-Nov-03	2,796	2,835	39	44	
09-Nov-03	2,891	2,849	-43	45	Rememberance Day
16-Nov-03	2,918	2,937	18	46	
23-Nov-03	2,871	3,042	171	47	
30-Nov-03	2,973	3,029	56	48	
07-Dec-03	3,146	3,109	-37	49	
14-Dec-03	3,162	3,162	0	50	
21-Dec-03	3,135	3,150	15	51	
28-Dec-03	2,703	2,887	185	52	
04-Jan-04	2,707	2,913	205	1	
11-Jan-04	3,369	3,226	-143	2	
18-Jan-04	3,445	3,345	-99	3	
25-Jan-04	3,446	3,263	-183	4	
01-Feb-04	3,419	3,300	-119	5	
08-Feb-04	3,239	3,284	45	6	
15-Feb-04	3,215	3,189	-26	7	
22-Feb-04	3,158	3,148	-10	8	
29-Feb-04	3,039	3,122	82	9	
07-Mar-04	2,961	3,118	158	10	
14-Mar-04	3,027	3,038	11	11	
21-Mar-04	3,069	2,974	-95	12	
28-Mar-04	2,921	2,956	35	13	
04-Apr-04	2,847	2,874	27	14	Good Friday Easter Monday
11-Apr-04	2,746	2,685	-61	15	
18-Apr-04	2,741	2,755	14	16	
25-Apr-04	2,692	2,712	20	17	
02-May-04	2,726	2,732	6	18	
09-May-04	2,706	2,651	-55	19	
16-May-04	2,746	2,751	5	20	
23-May-04	2,670	2,685	15	21	
30-May-04	2,607	2,637	30	22	
06-Jun-04	2,661	2,691	30	23	Victoria Day
13-Jun-04	2,893	2,814	-78	24	
20-Jun-04	2,894	2,869	-25	25	
27-Jun-04	2,774	2,881	107	26	
04-Jul-04	2,757	2,825	68	27	
11-Jul-04	2,792	2,846	54	28	
18-Jul-04	2,913	2,926	14	29	
25-Jul-04	2,983	2,974	-9	30	
01-Aug-04	2,933	2,938	5	31	
08-Aug-04	2,843	2,871	28	32	
15-Aug-04	2,828	2,936	109	33	
22-Aug-04	2,809	2,846	37	34	
29-Aug-04	3,029	2,940	-89	35	
05-Sep-04	2,949	2,896	-53	36	Canada Day
12-Sep-04	2,847	2,831	-16	37	
19-Sep-04	2,878	2,826	-52	38	
26-Sep-04	2,893	2,870	-23	39	
03-Oct-04	2,780	2,854	74	40	
10-Oct-04	2,745	2,813	68	41	
17-Oct-04	2,716	2,760	44	42	
24-Oct-04	2,826	2,796	-31	43	
31-Oct-04	2,796	2,917	120	44	
07-Nov-04	2,859	2,913	53	45	Civic Holiday
14-Nov-04	2,964	2,947	-17	46	
21-Nov-04	2,885	3,050	165	47	
28-Nov-04	3,005	3,063	58	48	
05-Sep-04	2,949	2,896	-53	36	Thanksgiving
12-Sep-04	2,847	2,831	-16	37	
19-Sep-04	2,878	2,826	-52	38	
26-Sep-04	2,893	2,870	-23	39	
03-Oct-04	2,780	2,854	74	40	
10-Oct-04	2,745	2,813	68	41	
17-Oct-04	2,716	2,760	44	42	
24-Oct-04	2,826	2,796	-31	43	
31-Oct-04	2,796	2,917	120	44	
07-Nov-04	2,859	2,913	53	45	Rememberance Day
14-Nov-04	2,964	2,947	-17	46	
21-Nov-04	2,885	3,050	165	47	
28-Nov-04	3,005	3,063	58	48	

Table 2.1 shows the actual and weather-corrected energy demand along with any notes for the week. Since July, the weather-corrections have been positive indicating that the weather has been milder than normal. The exception was September where the weather was warmer than normal.

## 2.2 Historical Peak Demand

The actual annual peak demand has averaged growth of 1.8% over the 1997 to 2004 time frame. For that period, five of the eight annual peaks have been summer peaks. However on a weather-corrected basis only 2002 was summer peaking. For 2004, the year was winter peaking both in terms of actual peak demand and weather-corrected peak demand. The winter peak tends to be more consistent than the summer peak which tends to be more volatile. This is not surprising given that demand is much more heat sensitive than cold sensitive. As well, the winter peaks have a significant amount of lighting load embedded in them which the summer peaks do not. Therefore, under Normal weather the system is winter peaking but as we move towards Extreme weather the system becomes summer peaking.

Figure 2.2 displays the 52-week moving average of both actual and weather-corrected peak demands. The profile is similar to that of the energy demand, with the highpoint occurring in the spring of 2003.

**Figure 2.2: Peak Demand – 52-Week Moving Average**

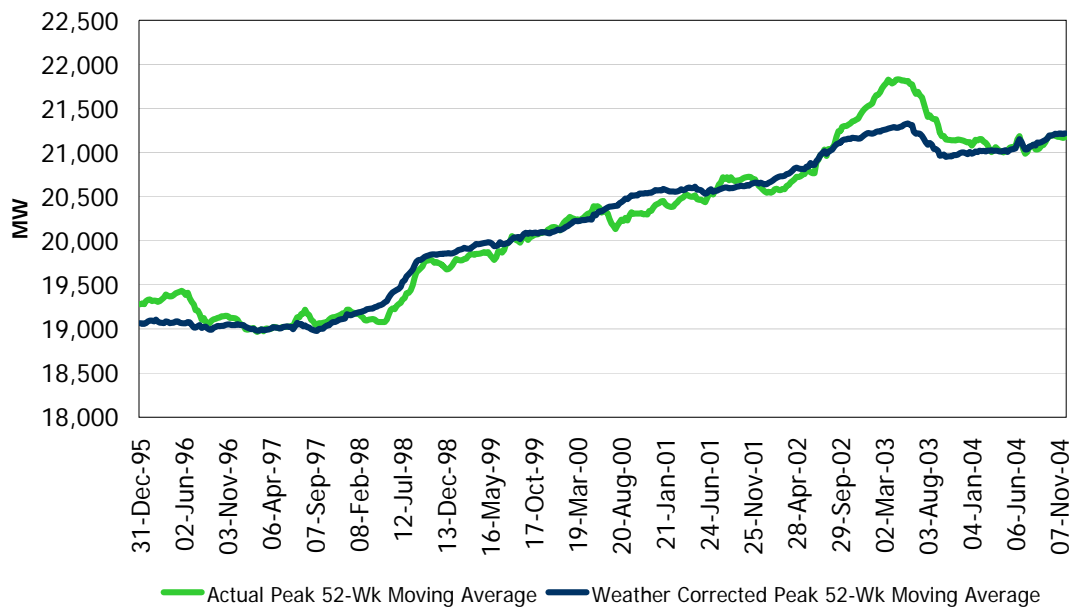


Table 2.2 contains the actual and weather-corrected weekly peak demands since June 2003. The table also shows the daily afternoon maximum temperature for both the actual peak day and the Normal peak day. This allows readers to see whether the peak was above or below Normal.

Table 2.2: Actual and Weather Corrected Weekly Peak Demand

Week Ending	Week Number	Peak Day	Actual Peak (MW)	Weather Corrected Peak (MW)	Actual Peak Day Temperature (°C)	Normal Peak Day Temperature (°C)
07-Sep-03	36	Wed	19,761	20,274	23.2	24.2
14-Sep-03	37	Thu	20,700	19,426	26.8	26.9
21-Sep-03	38	Mon	20,243	20,243	19.6	19.6
28-Sep-03	39	Mon	19,194	19,796	18.4	12.8
05-Oct-03	40	Thu	19,062	18,691	9.4	10.1
12-Oct-03	41	Thu	19,033	19,822	23.6	9.5
19-Oct-03	42	Tue	19,339	19,420	16.2	9.8
26-Oct-03	43	Thu	19,764	19,404	5.4	8.3
02-Nov-03	44	Tue	20,408	20,979	9.7	4.8
09-Nov-03	45	Tue	20,872	20,646	4.7	3.5
16-Nov-03	46	Thu	21,289	21,272	2.0	1.0
23-Nov-03	47	Mon	21,051	22,167	5.3	-0.3
30-Nov-03	48	Mon	21,584	21,864	13.4	0.0
07-Dec-03	49	Tue	22,798	22,488	-5.6	-3.1
14-Dec-03	50	Mon	22,664	22,860	1.4	-1.2
21-Dec-03	51	Mon	22,769	22,640	1.1	-4.7
28-Dec-03	52	Mon	21,276	22,363	5.9	-4.8
04-Jan-04	1	Tue	19,971	21,341	3.0	-8.3
11-Jan-04	2	Fri	23,957	23,055	-18.3	-10.3
18-Jan-04	3	Thu	24,937	23,960	-19.7	-14.7
25-Jan-04	4	Thu	23,740	22,744	-7.9	-9.5
01-Feb-04	5	Mon	24,843	24,320	-12.8	-10.6
08-Feb-04	6	Wed	22,608	22,917	-3.9	-9.4
15-Feb-04	7	Wed	22,141	22,205	-3.2	-6.1
22-Feb-04	8	Mon	22,591	22,437	-5.7	-6.0
29-Feb-04	9	Mon	21,397	22,215	-1.2	-4.3
07-Mar-04	10	Thu	20,576	21,586	6.8	-4.9
14-Mar-04	11	Mon	21,033	21,322	0.2	-2.4
21-Mar-04	12	Tue	21,634	21,043	-3.1	-2.1
28-Mar-04	13	Mon	21,411	20,623	-2.8	-0.2
04-Apr-04	14	Thu	19,867	20,052	5.2	0.2
11-Apr-04	15	Mon	19,911	19,499	3.2	1.9
18-Apr-04	16	Tue	19,287	19,298	4.2	5.0
25-Apr-04	17	Wed	18,456	19,185	20.0	7.1
02-May-04	18	Mon	18,934	19,032	15.3	7.1
09-May-04	19	Mon	18,664	18,234	8.3	12.0
16-May-04	20	Thu	20,327	19,657	27.3	11.2
23-May-04	21	Thu	19,003	19,040	23.6	27.5
30-May-04	22	Thu	18,395	19,097	17.7	25.0
06-Jun-04	23	Mon	18,593	19,006	13.2	24.8
13-Jun-04	24	Wed	23,163	22,101	31.3	30.7
20-Jun-04	25	Mon	21,921	22,855	27.3	31.3
27-Jun-04	26	Thu	20,212	21,110	25.8	28.5
04-Jul-04	27	Wed	19,602	19,857	23.9	30.4
11-Jul-04	28	Mon	19,990	20,561	20.8	28.1
18-Jul-04	29	Mon	22,142	22,512	27.4	31.8
25-Jul-04	30	Thu	23,976	23,273	30.1	28.7
01-Aug-04	31	Thu	21,790	21,546	26.7	27.5
08-Aug-04	32	Tue	23,159	22,823	28.6	26.6
15-Aug-04	33	Tue	21,171	22,162	26.5	29.6
22-Aug-04	34	Wed	20,570	21,117	25.5	28.0
29-Aug-04	35	Fri	22,613	21,679	27.6	29.3
05-Sep-04	36	Fri	21,467	20,490	28.4	24.2
12-Sep-04	37	Tue	21,067	20,260	24.6	26.9
19-Sep-04	38	Wed	21,911	20,766	25.8	19.6
26-Sep-04	39	Thu	21,545	20,786	27.5	12.8
03-Oct-04	40	Mon	20,063	20,401	23.6	10.1
10-Oct-04	41	Thu	19,594	19,649	26.8	9.5
17-Oct-04	42	Thu	19,478	19,952	13.4	9.8
24-Oct-04	43	Mon	19,829	20,110	8.8	8.3
31-Oct-04	44	Wed	19,538	20,688	11.4	4.8
07-Nov-04	45	Thu	20,768	21,028	6.2	3.5
14-Nov-04	46	Mon	21,136	21,216	5.2	1.0
21-Nov-04	47	Mon	20,691	22,017	13.4	-0.3
28-Nov-04	48	Wed	21,881	22,186	3.4	0.0

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## 3.0 Forecasting Process and Assumptions

A detailed description of the forecasting methodology can be found in the document entitled "Methodology to Perform Long Term Assessments" (IMO\_REP\_0044) (found on the IMO web site at [http://www.theimo.com/imoweb/pubs/marketReports/Methodology\\_RTAA\\_2004sep.pdf](http://www.theimo.com/imoweb/pubs/marketReports/Methodology_RTAA_2004sep.pdf)). Other than the regular activities of updating and re-estimating the model, the weather scenarios were updated to reflect data through the end of June.

The forecast of electricity demand requires inputs and/or assumptions with respect to the three classes of drivers. This section looks at how each of the drivers is generated for the forecast.

### 3.1 Weather Drivers for Forecast

Since forecasting long-term weather is not possible, weather scenarios are generated based on historical data. For the purposes of assessing the adequacy of the system, the IMO uses Weekly normalized weather for three weather scenarios - Normal, Normal + 1 LFU and Extreme. Load Forecast Uncertainty (LFU) represents one standard deviation in the weather elements underpinning the peak demand.

Weekly normalized weather is created using the following steps. First, the daily weather history is grouped into weeks within each year. Next, each day is then assigned a "weather impact" based on its weather conditions (temperature, wind speed, cloud cover and humidity). Within each week the daily weather factors are then sorted from highest to lowest. Then the highest ranked days for each Week 1 of the 31 years of history are combined to create the first day of Week 1 of the weather scenario. The second highest ranked days for Week 1 of the 31 years of history are combined to create the second day of Week 1 of the weather scenario. The process is repeated until all days of all weeks have been created for the weather scenario.

To generate the Normal weather scenario the median value is selected for each day of the week. To create the Extreme weather scenario the maximum value is selected. To create the Mild scenario the minimum value is selected.

Load Forecast Uncertainty (LFU), a measure of demand fluctuations due to weather variability, is also a critical part of the analysis. LFU is generated by taking the difference between the Normal weather scenario and the Normal + 1 LFU weather scenario. As stated earlier, LFU represents one standard deviation in the weather elements underpinning the peak demand.

The Normal weather scenario, in conjunction with LFU is valuable in determining a distribution of potential outcomes under various weather conditions. It should be recognized that for resource adequacy assessments, the Weekly Normal weather forecast is used in conjunction with a measure of Weekly LFU to consider a full range of peak demands that can occur with various weather conditions with varying probability of occurrence.

The Extreme weather scenario is valuable for studying situations where the system is under duress. The Weekly Extreme weather scenario is valuable when examining peak conditions but is unrealistic from an energy demand standpoint, as severe weather conditions do not persist over a longer time period.

Most of the analysis in the Outlook documents uses weekly normalization. Seasonally normalized weather is used to produce the Expected seasonal demand. Seasonal Normal weather is constructed using the same approach as weekly Normal weather. Each historical day is once again assigned its "weather impact". The days are then sorted for each season. The seasonal Normal weather underlying the Expected summer peak would be generated by selecting the median of the highest weather impact day of each of the last 31 summers.

Figures 3.1 and 3.2 present temperature data for the winter and summer seasons of 1985 to 2004. Figure 3.1 displays data for the winter, plotting the peak day temperature and the coldest temperature against the coldest day from the Normal weather scenario. The peak day does not necessarily occur on the coldest day. Weekends and holidays will mute the impact of cold weather. This is particularly true with the Christmas holiday season. The latest December peak occurred on the 22<sup>nd</sup> and the earliest January peak occurred on the 4<sup>th</sup>. When building the weather scenarios, the coldest day of the week is always set to occur on a Wednesday in order to avoid holidays and weekends. This gives rise to a more consistent demand profile. If the coldest day occurs either early or late in the season, the weather's impact on peak demand is somewhat diminished. Finally, the sheer size of the province means that the system can be subject to a variety of weather impacts at any given time.

The winter peak has occurred as early as December 8<sup>th</sup> and as late as February 6<sup>th</sup>. The winter peak occurs most frequently in week 50 (mid-December) and week 3 (mid-January). For the purposes of the weather scenarios the coldest Normal weather is found in the 3<sup>rd</sup> week.

**Figure 3.1: Winter Peak Demand and Temperature**

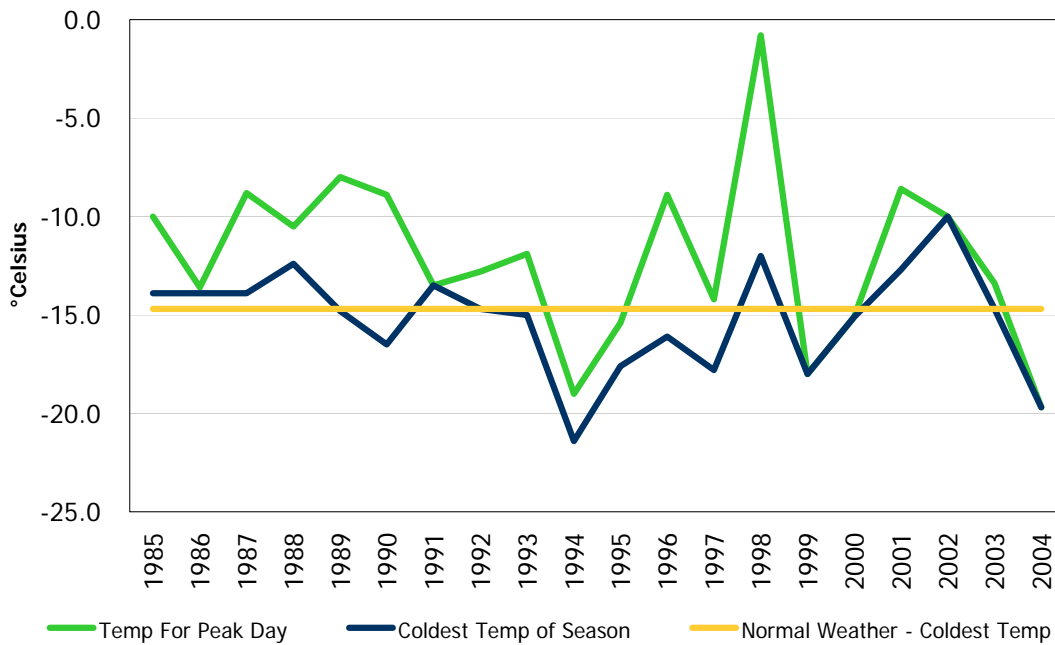


Figure 3.2 displays data for the summer, plotting the peak day temperature and the hottest temperature against the hottest day from the Normal weather scenario. The peak day does not necessarily occur on the hottest day. Like the winter data, the hottest day and the peak day only



coincide roughly 30% of the time. This is due once again to the impact of weekends and holidays. The week with Canada Day has a similar, but smaller, impact to that of the Christmas holidays. The weather scenarios have the hottest day as Wednesday to avoid weekends and holidays. The hottest days and the peak day also will not tend to coincide as humidity is very influential in contributing to the peak demand. The summer peak has occurred as early as June 17<sup>th</sup> and as late as August 31<sup>st</sup>. The summer peak is not as consistent as the winter peak in terms of frequency of certain weeks. For the Normal weather scenario the hottest day is placed in the 29<sup>th</sup> week or mid-July.

**Figure 3.2: Summer Peak Demand and Temperature**

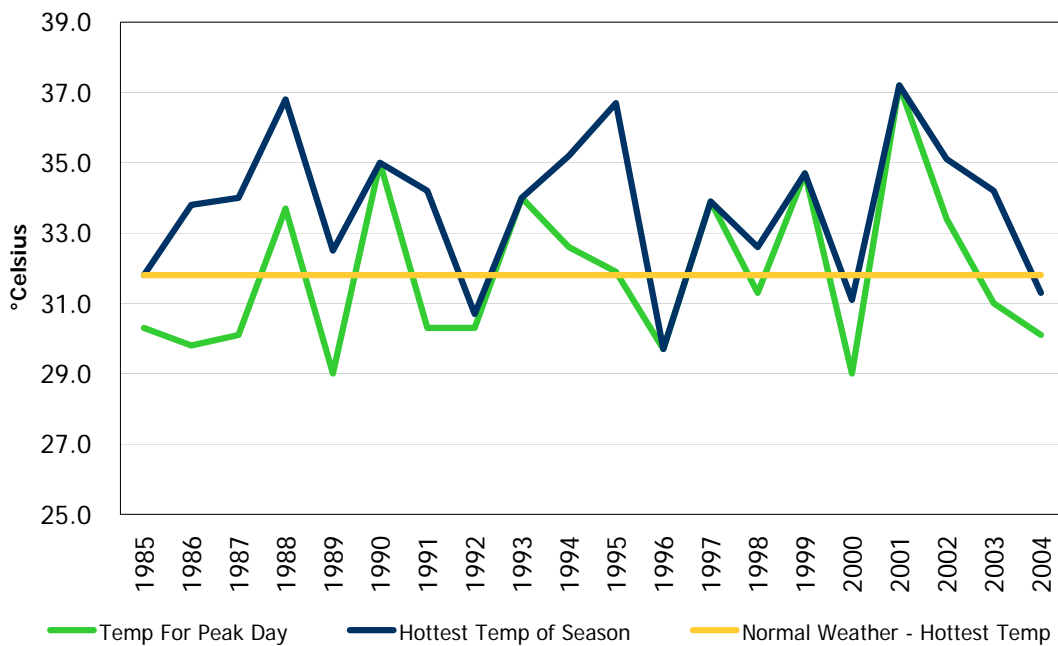


Table 3.1 contains information about the Weekly Normal and Extreme weather scenarios. For each week, the table shows the historical weather used for the peak day of that week. The table shows the daily high (temperature) and wind speed. Not shown but used in forecasting demand are humidity and cloud cover. The IMO uses six weather stations. The data in the table below is for Toronto

**Table 3.1: Normal and Extreme Weather**

Week	Normal Peak Date	Normal Temperature (°C)	Normal Wind Speed (km/hr)	Extreme Peak Date	Extreme Temperature (°C)	Extreme Wind Speed (km/hr)
1	04-Jan-76	-8.3	28.7	10-Jan-82	-15.8	41.3
2	13-Jan-00	-10.3	33.3	15-Jan-94	-21.4	19.5
3	17-Jan-03	-14.7	23.3	19-Jan-94	-19.0	35.7
4	29-Jan-78	-9.5	12.0	23-Jan-76	-18.3	10.7
5	30-Jan-76	-10.6	14.0	05-Feb-95	-17.6	40.7
6	09-Feb-75	-9.4	15.5	06-Feb-95	-15.4	18.7
7	13-Feb-95	-6.1	31.5	17-Feb-79	-19.4	14.7
8	19-Feb-79	-6.0	6.8	25-Feb-90	-15.9	27.8
9	28-Feb-01	-4.3	27.3	29-Feb-80	-14.4	35.0
10	07-Mar-78	-4.9	19.8	03-Mar-03	-14.3	6.3
11	12-Mar-01	-2.4	32.7	12-Mar-84	-11.3	7.0
12	21-Mar-98	-2.1	22.5	20-Mar-86	-11.1	29.2
13	29-Mar-91	-0.2	19.7	25-Mar-02	-3.5	15.2
14	08-Apr-00	0.2	38.2	06-Apr-82	-7.4	38.0
15	12-Apr-92	1.9	37.3	07-Apr-03	-2.0	35.5
16	22-Apr-89	5.0	23.8	18-Apr-83	1.9	25.7
17	27-Apr-88	7.1	27.8	22-Apr-86	1.0	19.0
18	01-May-79	7.1	25.7	26-Apr-76	3.9	33.8
19	05-May-92	12.0	13.7	09-May-79	29.7	21.5
20	19-May-00	11.2	23.2	19-May-96	28.8	38.8
21	22-May-84	27.5	26.7	23-May-75	27.8	7.3
22	01-Jun-95	25.0	15.7	29-May-87	32.0	18.2
23	10-Jun-83	24.8	6.2	07-Jun-99	32.9	22.2
24	13-Jun-92	30.7	26.3	18-Jun-94	35.2	9.8
25	21-Jun-94	31.3	36.7	19-Jun-95	35.1	20.2
26	26-Jun-95	28.5	26.0	04-Jul-99	34.4	23.3
27	14-Jul-84	30.4	20.7	14-Jul-95	36.7	17.3
28	05-Jul-77	28.1	9.2	02-Jul-02	34.3	21.7
29	18-Jul-83	31.8	12.2	20-Jul-77	33.8	16.3
30	27-Jul-97	28.7	18.0	30-Jul-99	34.4	18.0
31	02-Aug-00	27.5	21.5	01-Aug-75	34.4	17.5
32	04-Aug-03	26.6	18.8	07-Aug-01	35.3	28.0
33	13-Aug-91	29.6	10.7	15-Aug-95	31.9	9.2
34	24-Aug-80	28.0	9.0	27-Aug-93	34.0	25.8
35	30-Aug-79	29.3	22.3	28-Aug-73	35.6	26.7
36	01-Sep-97	24.2	10.5	03-Sep-73	32.8	9.3
37	13-Sep-90	26.9	15.3	09-Sep-02	33.5	14.8
38	15-Sep-03	19.6	16.3	16-Sep-91	31.2	30.3
39	24-Sep-76	12.8	11.7	22-Sep-70	26.7	21.3
40	04-Oct-94	10.1	20.7	01-Oct-02	28.8	34.2
41	07-Oct-81	9.5	40.2	12-Oct-88	4.6	23.5
42	17-Oct-03	9.8	19.0	20-Oct-74	2.2	27.3
43	21-Oct-74	8.3	25.3	26-Oct-79	2.5	26.7
44	02-Nov-88	4.8	34.2	07-Nov-93	2.6	26.0
45	05-Nov-98	3.5	16.7	12-Nov-95	0.5	34.3
46	13-Nov-95	1.0	7.3	13-Nov-86	-4.2	11.5
47	22-Nov-81	-0.3	22.5	21-Nov-87	-8.0	22.7
48	25-Nov-75	0.0	24.7	03-Dec-89	-9.2	34.8
49	06-Dec-03	-3.1	5.5	11-Dec-77	-14.1	8.5
50	09-Dec-02	-1.2	33.0	15-Dec-89	-8.5	17.8
51	17-Dec-02	-4.7	12.3	26-Dec-93	-17.0	33.0
52	25-Dec-96	-4.8	21.0	27-Dec-93	-9.5	22.5

## 3.2 Calendar Drivers for Forecast

Calendar variables are addressed in the Methodology document.

### 3.3 Economic Drivers for Forecast

To produce an energy and peak demand forecast, an economic forecast of various drivers is required. A consensus of four major, publicly available provincial forecasts was utilized to generate the economic drivers used in the demand forecast. Table 3.2 summarizes the key economic drivers for energy and peak demand on the IMO-controlled grid. The Ontario growth index is a weighting of the economic drivers as they relate to electricity demand. The 18-Month outlook only considers the median economic growth scenario. High and low scenarios are used only in the 10-Year assessment.

Table 3.2: Forecast of Ontario Economic Drivers

Year	Ontario Employment		Ontario Housing Starts		Ontario Growth Index	
	Thousands	Annual Growth (%)	Thousands	Annual Growth (%)	Index	Annual Growth (%)
1995	5,129	2.0	31.9	-23.3	1.029	1.49
1996	5,176	0.9	39.5	23.9	1.038	0.89
1997	5,298	2.4	50.0	26.5	1.056	1.75
1998	5,476	3.4	50.1	0.2	1.081	2.31
1999	5,672	3.6	62.9	25.6	1.108	2.47
2000	5,856	3.2	67.4	7.1	1.134	2.41
2001	5,962	1.8	70.3	4.2	1.154	1.73
2002	6,052	1.5	79.6	13.3	1.173	1.64
2003	6,219	2.8	80.9	1.7	1.200	2.31
2004 (f)	6,328	1.8	77.9	-3.8	1.221	1.78
2005 (f)	6,412	1.3	67.4	-13.4	1.239	1.48
2006 (f)	6,491	1.2	67.2	-0.4	1.256	1.36

- End of Section -

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## 4.0 Demand Forecast

This section presents information on the total system, more detailed information for the individual zones can be found in Appendices A and B.

The predicted weekly system energy demand forecast is illustrated in Figure 4.1. Also in the chart are the actual and weather-corrected peak demands. The large decline just before the mid-point of the winter is the week between Christmas and New Years Day. The cold snap of January 2004 is evident in the divergence between the two lines.

**Figure 4.1: Weekly Energy Demand – History and Forecast**

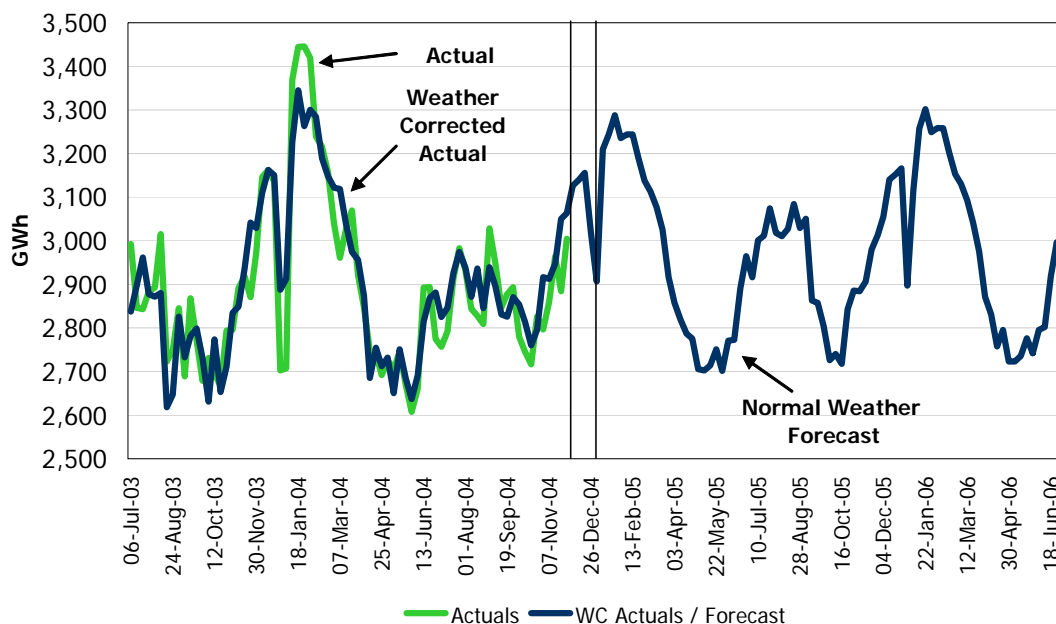


Figure 4.2 shows the range of weekly peak demands. The bottom of the peak demand range is generated via a Mild weather scenario. The Mild weather scenario is the opposite of the Extreme weather scenario, based on warm temperatures in the winter and cool summer temperatures. The middle of the range (the heavy line) represents the Normal weather peak demand. The top of the range is representative of the Extreme weather scenario. In general, it is the top half of the range that is the thrust of the analysis in the resource and transmission assessments.

The resource adequacy assessments take into consideration the full range of possible weather conditions on a probabilistic basis for each week. Allowance for the probability of demand being higher than that under Normal weather is made in the calculation of the required reserve.

**Figure 4.2: Weekly Peak Demand Forecast – Weather Scenarios**

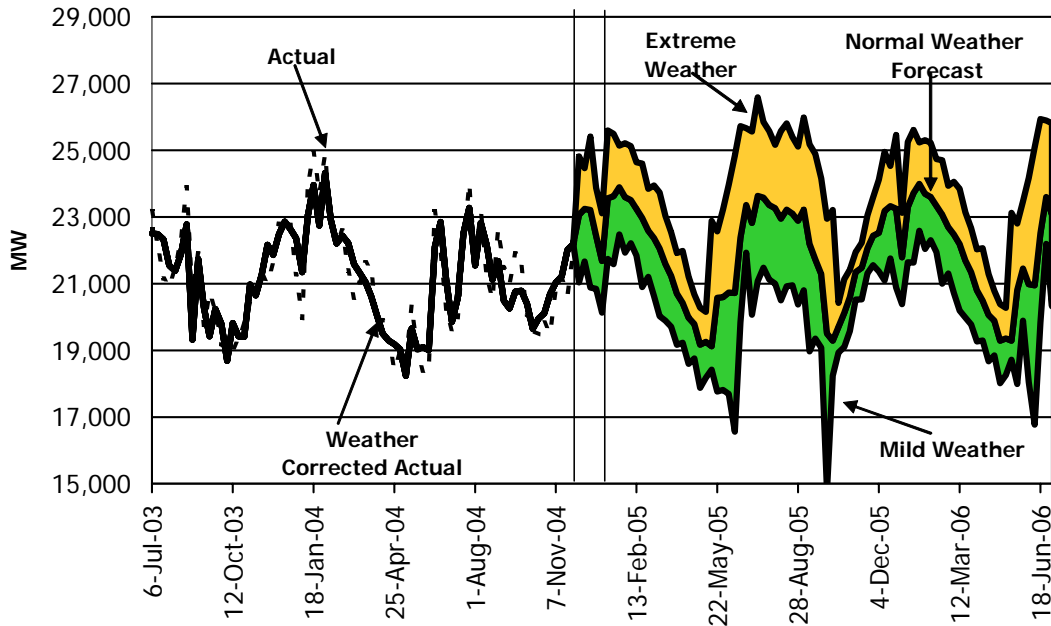


Table 4.1 contains the weekly forecast of energy and peak demand. As well, the table includes the week number and the Weekly Normal weather peak day temperature for Toronto. The table has the weekly peak demands for each of the Normal, Normal + 1 Load Forecast Uncertainty and Extreme weather scenarios (Weekly normalized). The last column of the table has the weekly energy demand forecast under Normal weather.

Table 4.1: Forecasted Ontario Weekly Demand

Week Number	Week Ending	Normal Peak Day Temperature (°C)	Normal Peak (MW)	Normal + 1 LFU Peak (MW)	Extreme Peak (MW)	Normal Energy (GWh)
1	09-Jan-05	-8.3	23,561	24,472	25,594	3,209
2	16-Jan-05	-10.3	23,625	24,643	25,493	3,243
3	23-Jan-05	-14.7	23,891	24,598	25,138	3,288
4	30-Jan-05	-9.5	23,595	24,426	25,209	3,235
5	06-Feb-05	-10.6	23,507	24,154	25,124	3,244
6	13-Feb-05	-9.4	23,240	23,937	24,641	3,244
7	20-Feb-05	-6.1	22,969	24,005	24,600	3,189
8	27-Feb-05	-6.0	22,597	23,295	23,841	3,137
9	06-Mar-05	-4.3	22,370	23,244	23,945	3,112
10	13-Mar-05	-4.9	22,058	23,076	23,737	3,077
11	20-Mar-05	-2.4	21,595	22,448	23,033	3,025
12	27-Mar-05	-2.1	21,236	21,997	22,540	2,917
13	03-Apr-05	-0.2	20,700	21,468	21,924	2,858
14	10-Apr-05	0.2	20,418	21,015	21,985	2,820
15	17-Apr-05	1.9	19,987	20,683	21,212	2,787
16	24-Apr-05	5.0	19,787	20,303	20,681	2,775
17	01-May-05	7.1	19,173	19,822	20,279	2,706
18	08-May-05	7.1	19,256	19,796	20,160	2,702
19	15-May-05	12.0	19,124	19,475	22,880	2,714
20	22-May-05	11.2	20,581	21,990	22,571	2,751
21	29-May-05	27.5	20,593	21,984	23,219	2,702
22	05-Jun-05	25.0	20,733	22,250	23,968	2,771
23	12-Jun-05	24.8	20,718	22,795	24,838	2,773
24	19-Jun-05	30.7	22,380	23,651	25,729	2,890
25	26-Jun-05	31.3	23,363	24,078	25,665	2,965
26	03-Jul-05	28.5	22,820	24,193	25,561	2,916
27	10-Jul-05	30.4	23,636	24,914	26,583	3,001
28	17-Jul-05	28.1	23,577	24,629	25,849	3,012
29	24-Jul-05	31.8	23,356	24,470	25,577	3,074
30	31-Jul-05	28.7	23,262	24,394	25,167	3,018
31	07-Aug-05	27.5	22,954	24,182	25,582	3,010
32	14-Aug-05	26.6	23,218	24,368	25,807	3,027
33	21-Aug-05	29.6	23,101	24,174	25,402	3,084
34	28-Aug-05	28.0	22,891	24,150	25,110	3,029
35	04-Sep-05	29.3	23,218	24,424	25,985	3,050
36	11-Sep-05	24.2	22,198	23,812	25,180	2,863
37	18-Sep-05	26.9	21,730	22,920	24,891	2,857
38	25-Sep-05	19.6	21,290	22,394	24,154	2,805
39	02-Oct-05	12.8	19,505	21,866	22,949	2,726
40	09-Oct-05	10.1	19,289	19,811	23,210	2,740

(Table 4.1 – continued)

Week Number	Week Ending	Normal Peak Day Temperature (°C)	Normal Peak (MW)	Normal + 1 LFU Peak (MW)	Extreme Peak (MW)	Normal Energy (GWh)
41	16-Oct-05	9.5	19,712	20,101	20,423	2,718
42	23-Oct-05	9.8	20,127	20,638	21,132	2,843
43	30-Oct-05	8.3	20,603	21,116	21,423	2,886
44	06-Nov-05	4.8	21,348	21,759	21,946	2,884
45	13-Nov-05	3.5	21,477	21,950	22,227	2,906
46	20-Nov-05	1.0	22,060	22,433	23,058	2,980
47	27-Nov-05	-0.3	22,437	22,878	23,586	3,013
48	04-Dec-05	0.0	22,520	23,096	24,116	3,055
49	11-Dec-05	-3.1	23,176	24,218	24,956	3,140
50	18-Dec-05	-1.2	23,332	24,118	24,535	3,152
51	25-Dec-05	-4.7	23,249	24,431	25,463	3,166
52	01-Jan-06	-4.8	21,787	22,489	23,123	2,897
1	08-Jan-06	-8.3	23,300	24,131	25,253	3,117
2	15-Jan-06	-10.3	23,717	24,761	25,611	3,257
3	22-Jan-06	-14.7	23,991	24,695	25,235	3,301
4	29-Jan-06	-9.5	23,695	24,524	25,306	3,249
5	05-Feb-06	-10.6	23,604	24,254	25,224	3,259
6	12-Feb-06	-9.4	23,339	24,034	24,737	3,258
7	19-Feb-06	-6.1	23,071	24,108	24,704	3,203
8	26-Feb-06	-6.0	22,696	23,392	23,938	3,153
9	05-Mar-06	-4.3	22,474	23,352	24,053	3,130
10	12-Mar-06	-4.9	22,185	23,180	23,841	3,093
11	19-Mar-06	-2.4	21,699	22,557	23,141	3,041
12	26-Mar-06	-2.1	21,340	22,123	22,667	2,975
13	02-Apr-06	-0.2	20,804	21,572	22,028	2,871
14	09-Apr-06	0.2	20,495	21,093	22,062	2,831
15	16-Apr-06	1.9	20,064	20,759	21,288	2,757
16	23-Apr-06	5.0	19,888	20,405	20,782	2,795
17	30-Apr-06	7.1	19,289	19,924	20,380	2,723
18	07-May-06	7.1	19,358	19,910	20,274	2,723
19	14-May-06	12.0	19,292	19,578	23,126	2,736
20	21-May-06	11.2	20,816	22,226	22,807	2,776
21	28-May-06	27.5	21,452	22,234	23,469	2,742
22	04-Jun-06	25.0	20,982	22,451	24,169	2,795
23	11-Jun-06	24.8	20,955	23,046	25,090	2,802
24	18-Jun-06	30.7	22,518	23,860	25,939	2,918
25	25-Jun-06	31.3	23,599	24,301	25,888	2,996
26	02-Jul-06	28.5	23,070	24,444	25,811	2,948

#### 4.1 Comparison of Current and Previous Forecast

This section compares the current forecast with that released September 24, 2004.

The forecasting methodology has not been modified since the previous forecast. The only changes were items that are part of the regular routine of producing a forecast. The demand models were re-estimated to include the latest weather, demand and economic data and the economic forecast was updated to reflect the most recent outlook.

The inclusion of actual data in the demand models has had downward impact as demand has been lower than anticipated. Finally, the economic forecast has deteriorated slightly for 2005.

Combined, the changes are relatively modest but have a consistent downward impact on peak and



energy demand. Table 4.2 shows the difference between the current and previous forecast for selected weeks.

**Table 4.2: Current Versus Previous Forecast**

Week Ending	Energy Demand	Normal Weather Peak Demand	Extreme Weather Peak Demand
	(GWh)	(MW)	(MW)
09-Jan-05	3,209	23,561	25,594
Difference (Current - Previous)	-3	-12	-22
10-Apr-05	2,820	20,418	21,985
Difference (Current - Previous)	-2	-7	-10
10-Jul-05	3,001	23,636	26,583
Difference (Current - Previous)	-21	-162	-141
09-Oct-05	2,740	19,289	23,210
Difference (Current - Previous)	-4	-13	-104
08-Jan-06	3,117	23,300	25,253
Difference (Current - Previous)	9	74	68

**- End of Section -**

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**Appendix A - Energy Demand Forecast Details****Table A1: Weekly Zonal Energy Forecast, Normal Weather**

Week Ending	Weekly Energy (GWh)										
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	Total System
09-Jan-05	161	264	216	200	242	1,028	118	9	619	351	3,209
16-Jan-05	164	266	218	203	242	1,037	120	10	628	357	3,243
23-Jan-05	165	265	221	205	247	1,054	121	10	638	362	3,288
30-Jan-05	162	264	215	200	235	1,040	119	10	633	357	3,235
06-Feb-05	163	265	217	202	238	1,039	119	10	634	358	3,244
13-Feb-05	164	260	216	201	236	1,039	120	10	636	360	3,244
20-Feb-05	165	252	211	197	226	1,025	119	10	626	356	3,189
27-Feb-05	159	252	206	190	224	1,016	118	10	613	350	3,137
06-Mar-05	158	252	205	192	224	1,003	117	10	606	346	3,112
13-Mar-05	157	248	199	189	217	994	116	10	602	344	3,077
20-Mar-05	155	245	194	187	214	974	115	10	593	338	3,025
27-Mar-05	153	238	185	182	206	929	112	9	575	328	2,917
03-Apr-05	149	234	177	177	199	912	111	9	568	323	2,858
10-Apr-05	145	230	175	163	192	910	108	9	563	324	2,820
17-Apr-05	146	231	176	169	191	886	107	8	551	320	2,787
24-Apr-05	145	222	175	168	189	896	107	8	550	316	2,775
01-May-05	143	214	168	162	180	874	106	7	539	314	2,706
08-May-05	142	211	164	161	183	878	104	7	540	311	2,702
15-May-05	142	210	167	161	187	881	106	6	540	314	2,714
22-May-05	143	212	169	160	187	903	105	7	547	318	2,751
29-May-05	141	209	167	150	184	898	103	7	527	316	2,702
05-Jun-05	144	208	169	153	193	916	106	6	551	325	2,771
12-Jun-05	145	201	163	147	191	914	109	7	555	340	2,773
19-Jun-05	149	201	173	153	200	976	110	7	578	343	2,890
26-Jun-05	147	201	176	157	207	1,013	115	8	588	353	2,965
03-Jul-05	136	195	173	152	197	999	115	8	587	355	2,916
10-Jul-05	143	197	178	159	216	1,032	115	7	602	351	3,001
17-Jul-05	142	196	177	157	210	1,040	118	7	599	366	3,012
24-Jul-05	142	199	183	162	212	1,072	120	6	598	381	3,074
31-Jul-05	143	198	178	161	212	1,042	119	6	578	381	3,018
07-Aug-05	145	201	179	157	214	1,038	118	6	581	371	3,010
14-Aug-05	146	206	180	161	218	1,042	116	6	586	365	3,027
21-Aug-05	149	213	186	162	221	1,050	120	7	599	378	3,084
28-Aug-05	149	217	184	158	214	1,018	120	6	590	373	3,029
04-Sep-05	147	221	182	156	211	1,031	120	7	596	378	3,050
11-Sep-05	141	217	167	139	201	967	110	7	568	346	2,863
18-Sep-05	143	215	158	132	201	968	112	7	567	354	2,857
25-Sep-05	143	218	158	128	205	947	106	7	557	334	2,805
02-Oct-05	141	215	151	125	199	914	104	7	542	326	2,726
09-Oct-05	144	220	158	137	201	902	106	8	542	322	2,740

(Table A1 – continued)

	Weekly Energy (GWh)										Total System
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	
16-Oct-05	142	225	160	143	198	886	105	8	534	317	2,718
23-Oct-05	150	229	173	158	208	921	111	8	557	327	2,843
30-Oct-05	149	236	180	167	210	928	111	9	565	331	2,886
06-Nov-05	150	233	173	159	209	933	112	9	573	333	2,884
13-Nov-05	151	239	176	162	212	940	111	9	574	332	2,906
20-Nov-05	154	244	185	170	216	965	113	10	585	338	2,980
27-Nov-05	154	242	189	175	213	980	115	10	591	343	3,013
04-Dec-05	155	252	195	181	220	990	115	10	593	344	3,055
11-Dec-05	158	252	206	191	234	1,021	116	10	608	345	3,140
18-Dec-05	157	256	207	194	235	1,018	117	10	608	349	3,152
25-Dec-05	157	254	209	196	238	1,021	117	10	613	350	3,166
01-Jan-06	142	244	192	192	219	913	100	9	562	324	2,897
08-Jan-06	154	260	209	193	230	995	111	10	611	344	3,117
15-Jan-06	163	269	216	205	246	1,037	119	10	633	360	3,257
22-Jan-06	165	268	219	207	250	1,055	119	10	643	365	3,301
29-Jan-06	161	267	213	202	238	1,041	118	10	638	360	3,249
05-Feb-06	163	268	215	204	241	1,040	118	10	639	361	3,259
12-Feb-06	164	263	214	203	239	1,040	118	11	642	364	3,258
19-Feb-06	164	255	209	199	229	1,025	118	11	632	360	3,203
26-Feb-06	158	255	204	193	227	1,016	116	11	619	353	3,153
05-Mar-06	157	255	203	194	227	1,005	116	11	612	350	3,130
12-Mar-06	156	251	197	191	220	996	115	10	608	348	3,093
19-Mar-06	155	248	192	189	217	975	114	10	599	342	3,041
26-Mar-06	153	243	185	187	212	947	113	10	589	336	2,975
02-Apr-06	148	237	175	179	202	913	109	9	573	326	2,871
09-Apr-06	144	232	173	164	195	911	107	9	569	327	2,831
16-Apr-06	145	233	171	166	192	870	104	9	549	319	2,757
23-Apr-06	144	226	174	170	192	899	106	8	557	320	2,795
30-Apr-06	143	218	167	164	182	875	104	8	545	317	2,723
07-May-06	142	215	163	164	186	881	103	8	547	315	2,723
14-May-06	142	213	166	163	190	885	105	7	546	318	2,736
21-May-06	143	215	168	163	190	908	104	7	554	323	2,776
28-May-06	142	213	167	153	189	908	103	7	537	322	2,742
04-Jun-06	144	212	169	157	196	920	105	7	557	329	2,795
11-Jun-06	145	205	163	150	195	921	108	7	563	345	2,802
18-Jun-06	149	205	173	155	203	981	109	8	586	348	2,918
25-Jun-06	148	205	177	160	210	1,019	114	8	596	359	2,996
02-Jul-06	137	199	173	155	200	1,005	114	8	595	361	2,948

- End of Section -

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**Appendix B - Peak Demand Forecast Details****Table B1: Weekly Zonal Coincident Peak Demand Forecast, Normal Weather**

Week Ending	Hourly Coincident Peak Demand (MW)											Load Forecast Uncertainty
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	Total System	
09-Jan-05	905	1,633	1,523	1,630	1,730	6,828	759	59	4,163	2,293	21,523	919
16-Jan-05	994	1,725	1,655	1,650	1,832	7,677	860	65	4,535	2,568	23,561	911
23-Jan-05	992	1,723	1,675	1,660	1,858	7,735	841	66	4,588	2,488	23,625	1,018
30-Jan-05	969	1,732	1,661	1,658	1,885	7,869	851	67	4,659	2,539	23,891	707
06-Feb-05	967	1,701	1,632	1,617	1,814	7,822	844	67	4,608	2,524	23,595	831
13-Feb-05	969	1,716	1,633	1,618	1,848	7,766	833	68	4,573	2,482	23,507	647
20-Feb-05	998	1,731	1,553	1,544	1,777	7,665	839	68	4,526	2,539	23,240	697
27-Feb-05	979	1,615	1,541	1,533	1,724	7,659	829	70	4,530	2,489	22,969	1,036
06-Mar-05	959	1,596	1,525	1,551	1,746	7,481	835	68	4,382	2,455	22,597	697
13-Mar-05	965	1,615	1,505	1,539	1,692	7,436	814	70	4,356	2,378	22,370	873
20-Mar-05	931	1,566	1,446	1,491	1,647	7,336	824	66	4,309	2,443	22,058	1,017
27-Mar-05	946	1,555	1,415	1,468	1,660	7,140	794	64	4,228	2,325	21,595	854
03-Apr-05	926	1,468	1,377	1,438	1,603	7,057	795	61	4,187	2,324	21,236	760
10-Apr-05	910	1,462	1,287	1,357	1,512	6,906	789	57	4,112	2,308	20,700	768
17-Apr-05	900	1,457	1,292	1,268	1,511	6,798	768	60	4,067	2,296	20,418	598
24-Apr-05	908	1,490	1,259	1,260	1,479	6,593	751	57	3,985	2,205	19,987	696
01-May-05	887	1,443	1,243	1,260	1,491	6,519	749	54	3,933	2,207	19,787	517
08-May-05	868	1,363	1,165	1,189	1,328	6,405	741	53	3,856	2,206	19,173	649
15-May-05	856	1,348	1,199	1,238	1,283	6,499	729	50	3,866	2,188	19,256	540
22-May-05	948	1,315	1,177	1,197	1,323	6,367	738	40	3,793	2,226	19,124	351
29-May-05	907	1,315	1,360	1,217	1,421	7,366	706	40	3,961	2,289	20,581	1,409
05-Jun-05	843	1,293	1,290	1,212	1,377	7,390	770	43	3,895	2,479	20,593	1,391
12-Jun-05	878	1,337	1,342	1,223	1,458	7,352	743	45	3,945	2,411	20,733	1,518
19-Jun-05	851	1,280	1,273	1,105	1,356	7,265	824	44	4,032	2,689	20,718	2,076
26-Jun-05	898	1,249	1,393	1,299	1,548	8,079	839	50	4,338	2,688	22,380	1,271
03-Jul-05	885	1,284	1,448	1,378	1,638	8,400	918	49	4,391	2,971	23,363	716
10-Jul-05	820	1,238	1,457	1,344	1,494	8,309	873	56	4,453	2,775	22,820	1,374
17-Jul-05	865	1,232	1,456	1,387	1,629	8,623	909	48	4,599	2,888	23,636	1,278
24-Jul-05	851	1,220	1,395	1,339	1,503	8,531	958	50	4,617	3,112	23,577	1,052
31-Jul-05	852	1,236	1,428	1,392	1,545	8,593	868	47	4,550	2,845	23,356	1,113
07-Aug-05	862	1,250	1,403	1,383	1,571	8,373	928	47	4,370	3,075	23,262	1,132
14-Aug-05	874	1,257	1,412	1,384	1,654	8,262	871	46	4,327	2,866	22,954	1,228
21-Aug-05	889	1,301	1,457	1,409	1,706	8,375	853	46	4,394	2,788	23,218	1,149
28-Aug-05	895	1,334	1,453	1,361	1,664	8,252	877	43	4,379	2,845	23,101	1,072
04-Sep-05	889	1,334	1,452	1,326	1,639	8,127	882	41	4,360	2,840	22,891	1,259
11-Sep-05	897	1,385	1,417	1,309	1,618	8,266	919	45	4,388	2,975	23,218	1,205
18-Sep-05	864	1,375	1,353	1,182	1,515	7,951	847	44	4,305	2,760	22,198	1,614
25-Sep-05	866	1,344	1,253	1,077	1,424	7,936	838	44	4,226	2,722	21,730	1,190
02-Oct-05	882	1,380	1,295	1,134	1,698	7,525	761	48	4,108	2,459	21,290	1,104
09-Oct-05	828	1,338	1,083	977	1,399	6,911	755	44	3,730	2,441	19,505	2,360

(Table B1 – continued)

Week Ending	Hourly Coincident Peak Demand (MW)											Load Forecast Uncertainty
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	Total System	
16-Oct-05	845	1,343	1,119	1,091	1,500	6,560	736	58	3,856	2,182	19,289	522
23-Oct-05	844	1,454	1,185	1,165	1,510	6,611	757	60	3,904	2,222	19,712	389
30-Oct-05	899	1,461	1,249	1,229	1,557	6,710	767	60	3,955	2,238	20,127	512
06-Nov-05	876	1,496	1,315	1,312	1,618	6,795	791	61	4,048	2,290	20,603	514
13-Nov-05	939	1,513	1,311	1,254	1,586	7,175	807	67	4,263	2,434	21,348	411
20-Nov-05	936	1,561	1,314	1,235	1,585	7,266	808	65	4,258	2,449	21,477	474
27-Nov-05	958	1,643	1,400	1,319	1,688	7,396	819	65	4,295	2,478	22,060	373
04-Dec-05	945	1,616	1,449	1,374	1,671	7,561	832	68	4,402	2,520	22,437	441
11-Dec-05	969	1,688	1,475	1,402	1,700	7,531	826	69	4,385	2,474	22,520	577
18-Dec-05	993	1,679	1,543	1,461	1,793	7,775	842	70	4,479	2,540	23,176	1,042
25-Dec-05	964	1,654	1,611	1,636	1,832	7,639	861	72	4,517	2,547	23,332	786
01-Jan-06	935	1,646	1,592	1,605	1,775	7,749	846	69	4,544	2,488	23,249	1,182
08-Jan-06	902	1,662	1,531	1,654	1,763	6,903	758	63	4,224	2,327	21,787	702
15-Jan-06	954	1,709	1,649	1,660	1,748	7,557	820	66	4,581	2,556	23,300	831
22-Jan-06	982	1,741	1,664	1,666	1,880	7,752	834	68	4,623	2,507	23,717	1,044
29-Jan-06	960	1,752	1,652	1,667	1,909	7,887	843	69	4,693	2,558	23,991	705
05-Feb-06	957	1,723	1,624	1,626	1,837	7,839	837	69	4,641	2,542	23,695	829
12-Feb-06	960	1,739	1,624	1,626	1,871	7,780	826	70	4,608	2,501	23,604	650
19-Feb-06	988	1,752	1,544	1,554	1,801	7,682	832	71	4,559	2,557	23,339	695
26-Feb-06	969	1,637	1,534	1,543	1,747	7,672	822	73	4,567	2,507	23,071	1,038
05-Mar-06	951	1,614	1,511	1,559	1,769	7,498	828	70	4,422	2,474	22,696	695
12-Mar-06	956	1,633	1,494	1,546	1,715	7,456	808	72	4,397	2,397	22,474	878
19-Mar-06	922	1,585	1,439	1,502	1,671	7,367	818	69	4,348	2,464	22,185	995
26-Mar-06	937	1,573	1,404	1,475	1,683	7,162	787	66	4,265	2,346	21,699	858
02-Apr-06	919	1,485	1,366	1,445	1,627	7,079	789	63	4,224	2,344	21,340	783
09-Apr-06	902	1,480	1,277	1,364	1,535	6,927	783	60	4,148	2,328	20,804	768
16-Apr-06	889	1,473	1,277	1,272	1,535	6,815	761	62	4,100	2,311	20,495	598
23-Apr-06	897	1,509	1,244	1,263	1,503	6,609	743	59	4,016	2,222	20,064	695
30-Apr-06	879	1,465	1,230	1,265	1,516	6,535	742	57	3,971	2,228	19,888	517
07-May-06	859	1,388	1,153	1,194	1,354	6,423	735	56	3,899	2,228	19,289	634
14-May-06	848	1,372	1,195	1,246	1,298	6,510	721	53	3,906	2,209	19,358	552
21-May-06	949	1,334	1,172	1,208	1,345	6,409	730	42	3,846	2,257	19,292	286
28-May-06	907	1,342	1,377	1,231	1,439	7,437	697	41	4,026	2,320	20,816	1,409
04-Jun-06	868	1,359	1,346	1,262	1,436	7,682	788	46	4,076	2,588	21,452	782
11-Jun-06	879	1,368	1,361	1,235	1,477	7,429	738	46	3,992	2,456	20,982	1,468
18-Jun-06	845	1,313	1,290	1,116	1,375	7,340	820	45	4,078	2,733	20,955	2,091
25-Jun-06	896	1,278	1,406	1,303	1,557	8,084	832	50	4,393	2,718	22,518	1,342
02-Jul-06	889	1,311	1,464	1,388	1,656	8,466	912	50	4,443	3,020	23,599	702

**Table B2: Weekly Zonal Non-Coincident Peak Demand Forecast, Normal Weather**

Week	Hourly Non-Coincident Peak Demand (MW)											Zonal Total
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	System	
09-Jan-05	1,109	1,822	1,655	1,683	1,832	7,733	860	69	4,535	2,601	21,523	23,899
16-Jan-05	1,107	1,808	1,684	1,696	1,898	7,811	841	69	4,588	2,531	23,561	24,033
23-Jan-05	1,136	1,810	1,661	1,719	1,901	7,869	851	72	4,659	2,539	23,625	24,217
30-Jan-05	1,112	1,785	1,632	1,667	1,814	7,822	844	71	4,608	2,527	23,891	23,882
06-Feb-05	1,120	1,817	1,633	1,674	1,848	7,766	835	73	4,573	2,538	23,595	23,877
13-Feb-05	1,135	1,844	1,570	1,619	1,777	7,665	842	74	4,527	2,539	23,507	23,592
20-Feb-05	1,156	1,680	1,554	1,601	1,736	7,659	829	75	4,530	2,489	23,240	23,309
27-Feb-05	1,088	1,706	1,538	1,558	1,753	7,501	835	77	4,393	2,480	22,969	22,929
06-Mar-05	1,097	1,744	1,505	1,555	1,692	7,470	814	76	4,369	2,455	22,597	22,777
13-Mar-05	1,049	1,707	1,452	1,517	1,647	7,336	824	75	4,309	2,459	22,370	22,375
20-Mar-05	1,040	1,648	1,415	1,503	1,660	7,140	794	71	4,228	2,338	22,058	21,837
27-Mar-05	1,016	1,631	1,377	1,473	1,603	7,057	795	68	4,187	2,324	21,595	21,531
03-Apr-05	1,018	1,541	1,309	1,405	1,530	6,906	789	64	4,112	2,308	21,236	20,982
10-Apr-05	991	1,527	1,292	1,315	1,511	6,798	768	67	4,067	2,296	20,700	20,632
17-Apr-05	1,008	1,545	1,291	1,338	1,479	6,593	761	65	3,985	2,276	20,418	20,341
24-Apr-05	976	1,499	1,315	1,363	1,491	6,519	751	64	3,933	2,207	19,987	20,118
01-May-05	978	1,450	1,240	1,296	1,357	6,431	748	61	3,856	2,223	19,787	19,640
08-May-05	969	1,420	1,199	1,260	1,367	6,520	747	57	3,866	2,200	19,173	19,605
15-May-05	972	1,407	1,181	1,261	1,360	6,381	745	56	3,793	2,226	19,256	19,382
22-May-05	965	1,422	1,360	1,266	1,437	7,366	741	55	3,961	2,289	19,124	20,862
29-May-05	939	1,398	1,293	1,223	1,388	7,390	770	66	3,895	2,479	20,581	20,841
05-Jun-05	961	1,377	1,348	1,241	1,466	7,352	744	56	3,945	2,411	20,593	20,901
12-Jun-05	988	1,366	1,273	1,220	1,373	7,265	827	60	4,032	2,692	20,733	21,096
19-Jun-05	975	1,345	1,397	1,318	1,556	8,079	844	55	4,338	2,701	20,718	22,608
26-Jun-05	979	1,313	1,449	1,396	1,641	8,400	922	56	4,391	2,972	22,380	23,519
03-Jul-05	902	1,301	1,457	1,346	1,507	8,309	966	58	4,453	3,121	23,363	23,420
10-Jul-05	949	1,301	1,462	1,402	1,672	8,623	916	52	4,599	2,888	22,820	23,864
17-Jul-05	940	1,304	1,414	1,351	1,636	8,531	966	52	4,617	3,113	23,636	23,924
24-Jul-05	932	1,363	1,428	1,399	1,571	8,593	931	47	4,558	3,036	23,577	23,858
31-Jul-05	938	1,374	1,403	1,383	1,595	8,373	937	48	4,387	3,082	23,356	23,520
07-Aug-05	942	1,370	1,412	1,387	1,672	8,262	877	47	4,347	2,867	23,262	23,183
14-Aug-05	964	1,350	1,457	1,413	1,723	8,399	871	49	4,417	2,809	22,954	23,452
21-Aug-05	994	1,439	1,453	1,368	1,685	8,252	900	48	4,397	2,901	23,218	23,437
28-Aug-05	987	1,462	1,453	1,334	1,674	8,127	886	45	4,360	2,845	23,101	23,173
04-Sep-05	977	1,484	1,421	1,318	1,663	8,266	921	53	4,390	2,977	22,891	23,470
11-Sep-05	970	1,458	1,353	1,199	1,570	7,959	849	49	4,305	2,760	23,218	22,472
18-Sep-05	958	1,486	1,253	1,098	1,475	7,936	842	56	4,226	2,722	22,198	22,052
25-Sep-05	946	1,461	1,296	1,158	1,749	7,525	765	56	4,114	2,459	21,730	21,529
02-Oct-05	948	1,436	1,104	1,043	1,482	6,967	755	63	3,836	2,442	21,290	20,076
09-Oct-05	972	1,494	1,144	1,124	1,528	6,650	737	64	3,856	2,240	19,505	19,809

(Table B2 – continued)

Week	Hourly Non-Coincident Peak Demand (MW)											Zonal Total
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	System	
16-Oct-05	966	1,514	1,199	1,202	1,510	6,851	757	64	3,904	2,338	19,289	20,305
23-Oct-05	996	1,525	1,249	1,271	1,557	6,710	767	64	3,955	2,262	19,712	20,356
30-Oct-05	980	1,627	1,315	1,374	1,618	6,795	791	65	4,048	2,290	20,127	20,903
06-Nov-05	1,020	1,619	1,364	1,345	1,624	7,175	807	72	4,263	2,434	20,603	21,723
13-Nov-05	1,023	1,643	1,366	1,317	1,647	7,266	808	71	4,258	2,449	21,348	21,848
20-Nov-05	1,062	1,692	1,439	1,413	1,696	7,396	819	70	4,295	2,478	21,477	22,360
27-Nov-05	1,032	1,700	1,485	1,479	1,673	7,561	833	72	4,402	2,520	22,060	22,757
04-Dec-05	1,058	1,740	1,510	1,515	1,700	7,531	829	72	4,385	2,474	22,437	22,814
11-Dec-05	1,078	1,764	1,580	1,590	1,793	7,775	847	75	4,481	2,540	22,520	23,523
18-Dec-05	1,066	1,813	1,611	1,648	1,832	7,696	861	75	4,517	2,563	23,176	23,682
25-Dec-05	1,043	1,799	1,612	1,626	1,800	7,853	846	73	4,549	2,521	23,332	23,722
01-Jan-06	1,009	1,776	1,531	1,678	1,785	6,978	758	67	4,224	2,348	23,249	22,154
08-Jan-06	1,060	1,843	1,649	1,713	1,748	7,639	823	72	4,581	2,590	21,787	23,718
15-Jan-06	1,104	1,827	1,672	1,702	1,920	7,825	834	72	4,624	2,551	23,300	24,131
22-Jan-06	1,132	1,821	1,652	1,727	1,923	7,887	843	75	4,693	2,558	23,717	24,311
29-Jan-06	1,108	1,800	1,624	1,674	1,837	7,839	837	74	4,641	2,548	23,991	23,982
05-Feb-06	1,118	1,830	1,624	1,683	1,871	7,780	831	75	4,608	2,567	23,695	23,987
12-Feb-06	1,133	1,856	1,563	1,626	1,801	7,682	835	77	4,563	2,557	23,604	23,693
19-Feb-06	1,153	1,696	1,544	1,611	1,758	7,672	822	77	4,567	2,507	23,339	23,407
26-Feb-06	1,086	1,718	1,516	1,564	1,776	7,519	828	79	4,434	2,499	23,071	23,019
05-Mar-06	1,096	1,757	1,494	1,559	1,715	7,495	808	79	4,414	2,482	22,696	22,899
12-Mar-06	1,047	1,720	1,441	1,526	1,671	7,367	818	78	4,348	2,483	22,474	22,499
19-Mar-06	1,038	1,659	1,404	1,508	1,683	7,162	787	74	4,265	2,362	22,185	21,942
26-Mar-06	1,034	1,644	1,366	1,478	1,627	7,079	789	71	4,224	2,344	21,699	21,656
02-Apr-06	1,017	1,555	1,298	1,409	1,554	6,927	783	67	4,148	2,328	21,340	21,086
09-Apr-06	990	1,541	1,277	1,319	1,535	6,815	761	70	4,100	2,311	20,804	20,719
16-Apr-06	1,006	1,567	1,266	1,342	1,503	6,609	752	68	4,016	2,290	20,495	20,419
23-Apr-06	975	1,514	1,291	1,374	1,516	6,535	744	67	3,971	2,228	20,064	20,215
30-Apr-06	980	1,477	1,223	1,310	1,387	6,423	740	64	3,899	2,235	19,888	19,738
07-May-06	971	1,441	1,195	1,273	1,397	6,567	741	60	3,906	2,222	19,289	19,773
14-May-06	974	1,429	1,190	1,271	1,386	6,430	740	59	3,846	2,257	19,358	19,582
21-May-06	971	1,443	1,377	1,276	1,459	7,437	733	58	4,026	2,320	19,292	21,100
28-May-06	939	1,419	1,347	1,275	1,454	7,682	790	67	4,079	2,588	20,816	21,640
04-Jun-06	957	1,406	1,363	1,255	1,489	7,429	740	61	3,993	2,456	21,452	21,149
11-Jun-06	992	1,398	1,290	1,235	1,396	7,340	823	61	4,078	2,737	20,982	21,350
18-Jun-06	982	1,372	1,410	1,322	1,570	8,084	837	56	4,393	2,732	20,955	22,758
25-Jun-06	985	1,336	1,464	1,405	1,663	8,466	916	58	4,443	3,024	22,518	23,760
02-Jul-06	909	1,324	1,476	1,355	1,531	8,384	960	60	4,519	3,172	23,599	23,690

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## Appendix C - Analytical Factors

Table C1: Factors Affecting Demand

Factors Affecting Daily Energy Demand			
Variable Class	Variable	Change in Variable	Impact On Daily Energy Demand (MWh)
Weather	<b>Daily Avg Temperature</b>		
	> 16° C	1°C Increase	6,720 MWh Increase
	< 10°C	1°C Decrease	2,960 MWh Increase
	<b>Daily Humidity - Dewpoint</b>		
	> 16° C	1°C Increase	2,440 MWh Increase
	< 10°C	1°C Decrease	1,080 MWh Increase
	<b>Wind</b>		
Summer	1 km/hr Decrease	370 MWh Increase	
Winter	1 km/hr Increase	160 MWh Increase	
<b>Cloud</b>			
Summer	Decrease of 1 on Scale	1,090 MWh Decrease	
Winter	Increase of 1 on Scale	1,610 MWh Increase	
Economic	<b>Employment</b>	Increase of 1,000 jobs	30 MWh Increase
	<b>Housing Stock</b>	Increase of 1,000 houses	45 MWh Increase
Calendar	<b>Holidays</b>	New Year's Day	70,000 MWh Decrease
		Good Friday	43,000 MWh Decrease
		Victoria Day	52,000 MWh Decrease
		Canada Day	41,000 MWh Decrease
		August Civic Holiday	37,000 MWh Decrease
		Labour Day	60,000 MWh Decrease
		Thanksgiving Day	56,000 MWh Decrease
		Remembrance Day	7,000 MWh Decrease
		Christmas	82,000 MWh Decrease
		Boxing Day	78,000 MWh Decrease
	New Year's Eve	13,000 MWh Decrease	
	<b>Day of Week</b>	Monday vs Sunday	45,000 MWh Increase
		Tuesday vs Sunday	47,000 MWh Increase
		Wednesday vs Sunday	48,000 MWh Increase
		Thursday vs Sunday	47,000 MWh Increase
Friday vs Sunday		44,000 MWh Increase	
Saturday vs Sunday	11,000 MWh Increase		

(Table C1 – continued)

Factors Affecting Daily Peak Demand			
Variable Class	Variable	Change in Variable	Impact On Daily Peak Demand (MW)
Weather	<b>Temperature</b>	> 16° C	380 MW Increase
		< 10° C	120 MW Increase
	<b>Humidity - Dewpoint</b>	> 16° C	140 MW Increase
		< 10° C	40 MW Increase
	<b>Wind</b>	Summer	20 MW Increase
		Winter	10 MW Increase
	<b>Cloud</b>	Summer	90 MW Increase
		Winter	80 MW Increase
Economic	<b>Employment</b>	Increase of 1,000 jobs	1 MW Increase
	<b>Housing Stock</b>	Increase of 1,000 houses	2 MW Increase
Calendar	<b>Holidays</b>	New Year's Day	3,200 MW Decrease
		Good Friday	2,100 MW Decrease
		Victoria Day	2,500 MW Decrease
		Canada Day	1,900 MW Decrease
		August Civic Holiday	1,600 MW Decrease
		Labour Day	2,500 MW Decrease
		Thanksgiving Day	2,600 MW Decrease
		Remembrance Day	200 MW Decrease
		Christmas	4,400 MW Decrease
		Boxing Day	3,700 MW Decrease
		New Year's Eve	900 MW Decrease
		<b>Day of Week</b>	Monday vs Sunday
	Tuesday vs Sunday		2,100 MW Increase
	Wednesday vs Sunday		2,100 MW Increase
		Thursday vs Sunday	2,000 MW Increase
	Friday vs Sunday	1,800 MW Increase	
	Saturday vs Sunday	300 MW Increase	

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