



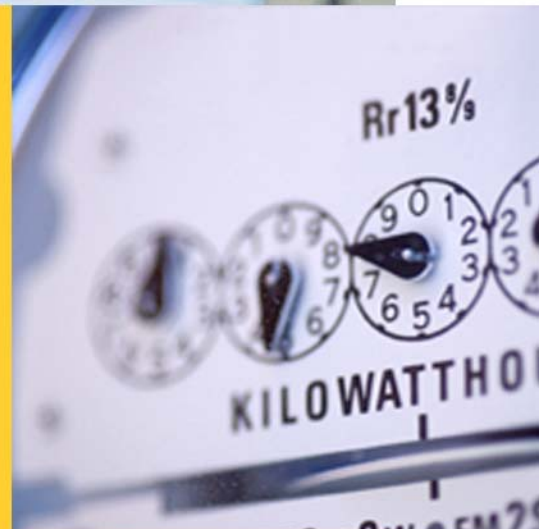
Independent Electricity Market Operator



**18-MONTH OUTLOOK:**

# Ontario Demand Forecast

From April 2004 to September 2005



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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 April 2004 to September 2005 and supercedes that portion of the previous 18-month forecast released in December 2003. This forecast is consistent with the 10-Year forecast - released in April 2004 - for the common time frame of 2005.

### Economic Outlook

The economic assumptions that underpin the forecast have been updated to reflect the most recent outlook for the Ontario economy. Despite the rapid appreciation of the Canadian dollar vis-à-vis its American counterpart, the Ontario economy has shown remarkable strength. In particular, the manufacturing sector has posted positive numbers in the most recent months. As well, some of Ontario's larger exporters have been shielded from the exchange rate impact due to an appreciation in commodity prices. Though it will take some time for the impacts of the devaluation of the U.S. currency to become evident, the Ontario economy appears to not have been as negatively affected as first feared. Given these sets of circumstances the outlook for the economy is slightly more upbeat than in previous outlooks.

### Actual Demand

Actual and weather-corrected demand for the period since the publication of the previous forecast has been lower than expected. The weather-corrected demand for the period of December through February has shown an increase of 0.016% on a year over year basis. Much of this is attributable to the underlying economic trends discussed above. Some of the more energy-intensive industries have been impacted to a greater degree by the rising dollar than the economy as a whole.

For the year 2003, actual energy demand declined by 0.8% to 151.7 TWh compared to 153.0 TWh in 2002. However, the actual figures do not take into account the impacts of the blackout. Taking into consideration the demand lost during and after the blackout with the weather-corrected data demand showed a slight increase from 151.4 TWh in 2002 to 151.6 TWh in 2003.

### Demand Forecast

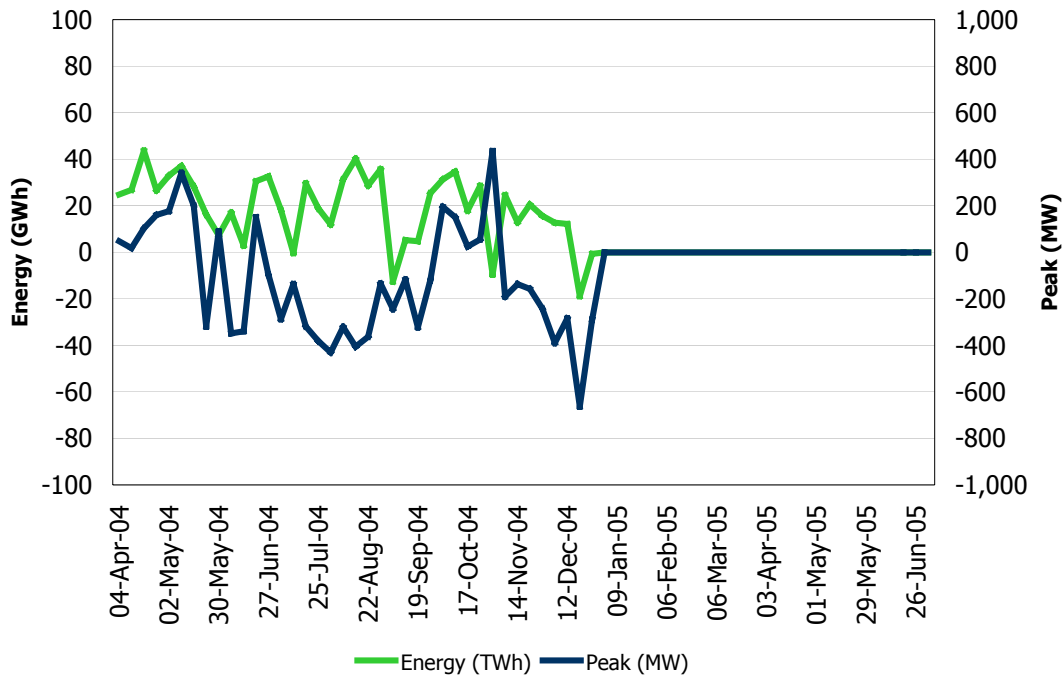
For the remainder of 2004, energy demand is expected to be slightly higher than in the previous forecast. This is due to the improvement in the economic outlook for the province. Peak demands are generally lower throughout the forecast due to the incorporation of actuals for 2003. As well, modifications to the way in which the weather scenarios - Normal and Extreme - are generated also had a slight impact on both energy and peak demand.

**Table 1: Forecasted Peak Demands**

Season	Normal Weather Peak (MW)	Extreme Weather Peak (MW)
Summer 2004	23,668	26,355
Winter 2005	24,153	26,122
Summer 2005	24,147	26,825

Figure 1 graphically displays the difference in weekly energy and peak demand between this forecast and the previous 18-month forecast.

**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 April 2004 to September 2005. It supercedes those common portions of the previous forecast for the period April 2004 to June 2005, dated December 19, 2003.

### 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 titled [Methodology to Perform Long Term Assessments \(IMP\\_REP\\_0044\)](#). 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 January 2004. Actuals reported since the time of the forecast 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, by hour and zone are available upon request.

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## 2.0 Historical Demand

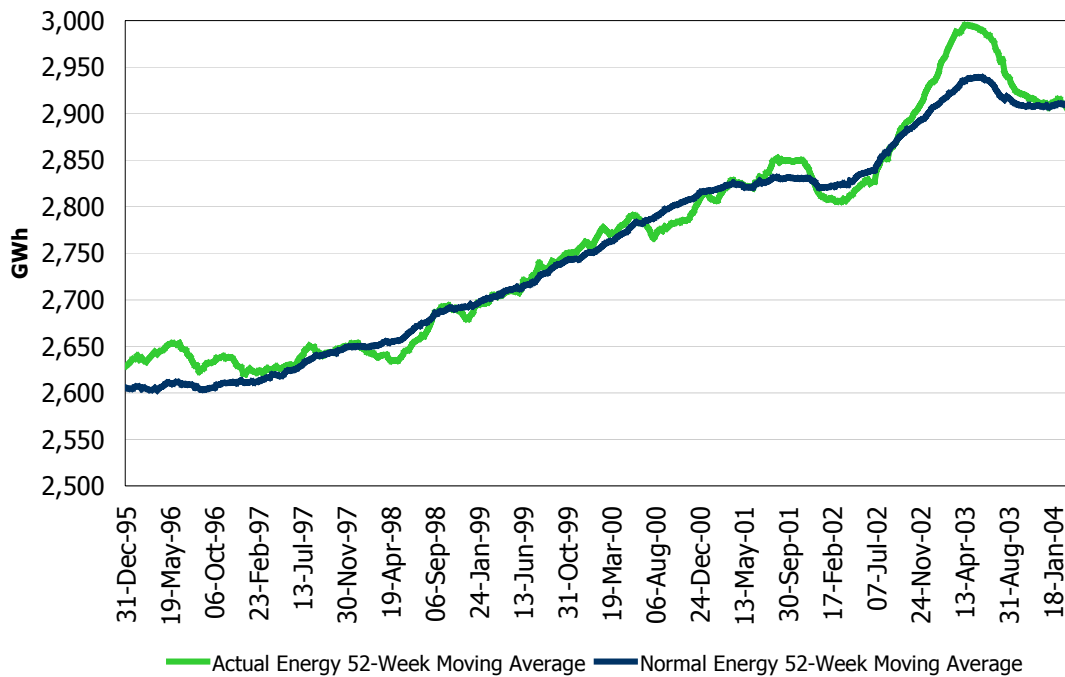
This section looks at recent historical weekly energy and peak demand. Ontario measures peak demand as the average over the course of a clock hour. The weather-corrected numbers for August 2003 have been adjusted to incorporate an estimate of the demand lost over the period August 14<sup>th</sup> to August 24<sup>th</sup>. Actual figures for August 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. Actual 2003 energy demand declined from the levels reached in 2002. This is attributable to more "typical" weather in 2003 and lower industrial demand as the higher dollar had started to impact exporters within the province. Energy demand in the latter parts of 2003 was weak. Recently, cold weather has pushed energy demand higher to start 2004.

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. The highest point in the moving average history was in April 2003. Since that point the average has continued to decline but has shown signs of leveling off in recent weeks.

**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	
05-Jan-03	2,911	3,017	106	1	New Years Day	
12-Jan-03	3,163	3,203	40	2		
19-Jan-03	3,338	3,247	-91	3		
26-Jan-03	3,435	3,289	-146	4		
02-Feb-03	3,270	3,223	-47	5		
09-Feb-03	3,250	3,270	20	6		
16-Feb-03	3,437	3,215	-222	7		
23-Feb-03	3,207	3,180	-28	8		
02-Mar-03	3,254	3,121	-133	9		
09-Mar-03	3,249	3,095	-154	10		
16-Mar-03	3,113	3,035	-78	11		
23-Mar-03	2,907	3,038	130	12		
30-Mar-03	2,851	2,923	72	13		
06-Apr-03	3,058	2,934	-123	14	Good Friday Easter Monday	
13-Apr-03	2,903	2,829	-74	15		
20-Apr-03	2,688	2,700	13	16		
27-Apr-03	2,718	2,677	-40	17		
04-May-03	2,656	2,669	13	18		
11-May-03	2,659	2,698	39	19		
18-May-03	2,625	2,650	25	20		
25-May-03	2,562	2,583	21	21	Victoria Day	
01-Jun-03	2,638	2,680	42	22		
08-Jun-03	2,654	2,682	28	23	Canada Day	
15-Jun-03	2,676	2,722	46	24		
22-Jun-03	2,749	2,806	57	25		
29-Jun-03	3,088	2,875	-213	26		
06-Jul-03	2,993	2,826	-167	27		
13-Jul-03	2,846	2,868	22	28		
20-Jul-03	2,843	2,942	99	29		
27-Jul-03	2,883	2,866	-17	30		
03-Aug-03	2,893	2,882	-11	31		Civic Holiday Blackout Conservation Appeals
10-Aug-03	3,015	2,889	-127	32		
17-Aug-03	2,723	3,006	283	33		
24-Aug-03	2,749	3,108	359	34		
31-Aug-03	2,845	2,827	-19	35		
07-Sep-03	2,689	2,700	11	36	Labour Day	
14-Sep-03	2,868	2,752	-116	37		
21-Sep-03	2,772	2,726	-46	38		
28-Sep-03	2,679	2,703	24	39		
05-Oct-03	2,731	2,711	-21	40		
12-Oct-03	2,695	2,726	31	41		
19-Oct-03	2,667	2,671	4	42		Thanksgiving
26-Oct-03	2,794	2,780	-14	43		
02-Nov-03	2,796	2,827	31	44		
09-Nov-03	2,891	2,866	-26	45	Remembrance Day	
16-Nov-03	2,918	2,935	17	46		
23-Nov-03	2,871	3,000	130	47		
30-Nov-03	2,973	3,038	65	48		
07-Dec-03	3,146	3,066	-80	49		
14-Dec-03	3,162	3,153	-9	50		
21-Dec-03	3,135	3,158	22	51	Christmas & Boxing Day New Years Day New All-Time Peak	
28-Dec-03	2,703	2,867	165	52		
04-Jan-04	2,707	2,940	232	1		
11-Jan-04	3,369	3,230	-139	2		
18-Jan-04	3,445	3,319	-126	3		
25-Jan-04	3,447	3,288	-159	4		
01-Feb-04	3,419	3,292	-127	5		
08-Feb-04	3,239	3,292	53	6		
15-Feb-04	3,215	3,202	-13	7		
22-Feb-04	3,158	3,132	-26	8		
29-Feb-04	3,039	3,087	47	9		

Table 2.1 shows the actual and weather-corrected energy demand along with any notes for the week. The weather corrected energy for the period August 14<sup>th</sup> to August 24<sup>th</sup> 2003 has been adjusted to include an estimate of lost demand due to the blackout.

## 2.2 Historical Peak Demand

The actual annual peak demand has averaged growth of 2.0% over the 1997 to 2003 time frame. For that period, five of the seven annual peaks have been summer peaks. This represents a departure from the longer system history. Prior to 1998, the system was always winter peaking. On a weather-corrected basis, the system was summer peaking only in 2002. The system has shown substantial growth in cooling load, while heating load has remained almost stagnant.

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 April 2003. Since the beginning of 2004, the moving average of peak demand has started to increase.

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

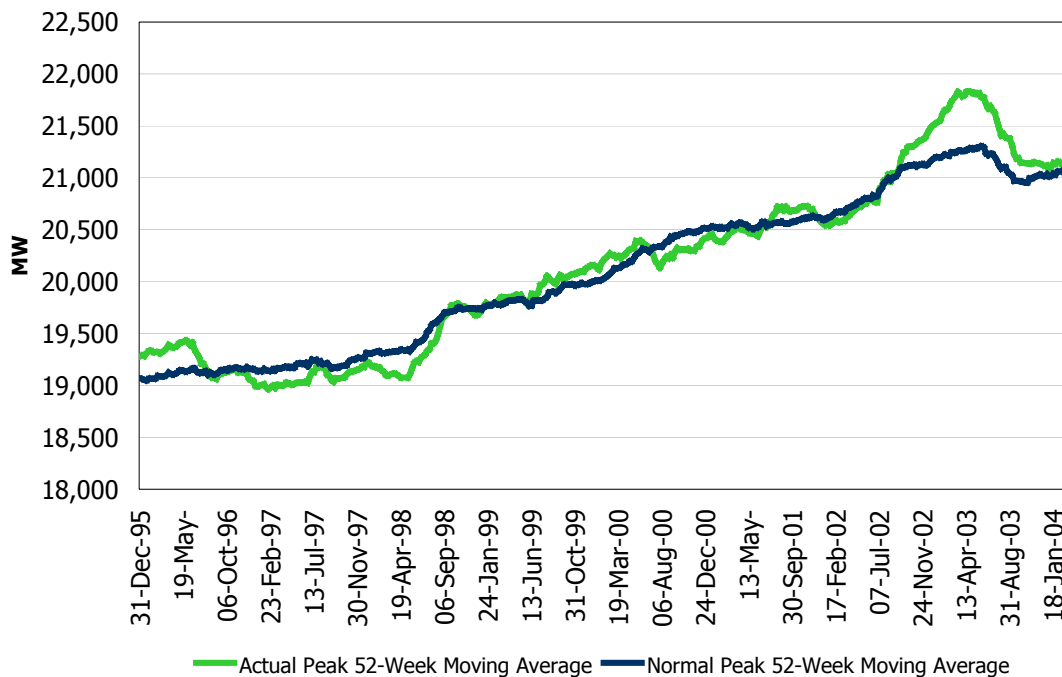


Table 2.2 contains the actual and weather-corrected weekly peak demands since January 2003. The table also shows the daily afternoon maximum temperature for both the actual peak day and the Normal peak day. This allows readers to see whether the peak was above or below Normal.

**Table 2.2: Actual and Weather Corrected Weekly Peak Demand**

Week Ending	Peak Day	Actual Peak (MW)	Weather Corrected Peak (MW)	Week Number	Actual Peak Day Temperature (°C)	Normal Peak Day Temperature (°C)
05-Jan-03	Thu	22,092	22,594	1	-6.1	-5.2
12-Jan-03	Tue	22,435	22,647	2	-1.3	-10.3
19-Jan-03	Wed	23,013	22,760	3	-5.6	-10.8
26-Jan-03	Wed	24,158	23,386	4	-13.4	-6.5
02-Feb-03	Mon	23,916	23,106	5	-11.4	-10.6
09-Feb-03	Wed	22,839	22,844	6	-6.9	-6.9
16-Feb-03	Thu	23,469	22,062	7	-10.0	-6.7
23-Feb-03	Mon	23,290	23,431	8	-7.1	-6.0
02-Mar-03	Mon	22,831	22,131	9	-8.5	-8.6
09-Mar-03	Mon	23,117	21,524	10	-14.3	-4.9
16-Mar-03	Mon	22,599	21,487	11	-11.2	-2.4
23-Mar-03	Thu	20,417	21,425	12	6.9	-1.5
30-Mar-03	Mon	19,675	20,290	13	11.4	2.2
06-Apr-03	Thu	21,010	20,197	14	-1.8	1.9
13-Apr-03	Mon	20,921	20,154	15	-2.0	5.8
20-Apr-03	Thu	19,555	19,181	16	2.7	5.1
27-Apr-03	Tue	19,075	18,856	17	7.1	8.2
04-May-03	Thu	18,191	18,298	18	19.0	9.7
11-May-03	Mon	18,741	18,915	19	13.1	11.0
18-May-03	Mon	18,362	18,755	20	11.1	23.9
25-May-03	Tue	18,599	19,307	21	15.7	23.5
01-Jun-03	Thu	18,226	19,778	22	24.2	22.5
08-Jun-03	Wed	18,410	18,577	23	16.1	26.7
15-Jun-03	Wed	19,042	20,209	24	24.6	30.7
22-Jun-03	Wed	19,935	20,918	25	22.6	31.3
29-Jun-03	Thu	24,753	22,892	26	33.3	28.5
06-Jul-03	Fri	23,175	22,273	27	31.3	31.4
13-Jul-03	Tue	22,137	22,283	28	28.6	29.1
20-Jul-03	Mon	21,149	22,180	29	28.0	31.1
27-Jul-03	Fri	20,937	20,887	30	28.7	29.8
03-Aug-03	Wed	21,438	21,464	31	28.3	28.3
10-Aug-03	Thu	22,380	22,097	32	26.9	26.6
17-Aug-03	Thu	23,891	23,236	33	31.0	29.6
24-Aug-03	Thu	20,726	19,244	34	31.7	26.6
31-Aug-03	Tue	21,910	21,432	35	30.0	29.2
07-Sep-03	Wed	19,761	20,251	36	23.2	26.1
14-Sep-03	Thu	20,700	19,564	37	26.8	29.6
21-Sep-03	Mon	20,243	19,470	38	19.6	24.6
28-Sep-03	Mon	19,194	18,842	39	18.4	12.7
05-Oct-03	Thu	19,062	19,120	40	9.4	7.2
12-Oct-03	Thu	19,033	19,176	41	23.6	8.9
19-Oct-03	Tue	19,339	19,248	42	16.2	7.6
26-Oct-03	Thu	19,764	19,582	43	5.4	8.1
02-Nov-03	Tue	20,408	21,264	44	9.7	2.2
09-Nov-03	Tue	20,872	20,925	45	4.7	3.5
16-Nov-03	Thu	21,289	21,383	46	2.0	1.0
23-Nov-03	Mon	21,051	21,819	47	5.3	-0.3
30-Nov-03	Mon	21,584	22,093	48	13.4	0.0
07-Dec-03	Tue	22,798	22,678	49	-5.6	-3.1
14-Dec-03	Mon	22,664	22,758	50	1.4	-1.2
21-Dec-03	Mon	22,769	22,957	51	1.1	-4.7
28-Dec-03	Mon	21,276	21,858	52	5.9	-4.8
04-Jan-04	Tue	19,971	21,489	1	3.0	-5.2
11-Jan-04	Fri	23,957	22,957	2	-18.3	-10.3
18-Jan-04	Thu	24,937	23,742	3	-19.7	-10.8
25-Jan-04	Thu	23,740	23,006	4	-7.9	-6.5
01-Feb-04	Mon	24,843	24,608	5	-12.8	-10.6
08-Feb-04	Wed	22,608	22,884	6	-3.9	-6.9
15-Feb-04	Wed	22,141	22,190	7	-3.2	-6.7
22-Feb-04	Mon	22,591	22,700	8	-5.7	-6.0
29-Feb-04	Mon	21,397	22,389	9	-1.2	-8.6

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## 3.0 Forecasting Process and Assumptions

A detailed description of the forecasting methodology can be found in the document [Methodology to Perform Long Term Assessments \(IMP\\_REP\\_0044\)](#). In addition to the methodology described in the document, 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 problematic, weather scenarios are generated based on historical data. Two scenarios – Normal and Extreme – are utilized in the IMO’s assessments. As well, Load Forecast Uncertainty (LFU), a measure of demand fluctuations due to weather variability, is also a critical part of the analysis.

Normal weather is based on historical data and is composed by ranking the weather within each historical week, then taking the median of each of the ranked days. In this way, the Normal weather for each week would have both hotter and colder days.

The Extreme weather scenario is also based on historical weather but uses minimums and maximums rather than the median values used in the Normal weather scenario.

Load Forecast Uncertainty (LFU) represents one standard deviation in the weather elements underpinning the peak demand. LFU could be expressed in terms of °C, km/h or MW depending on whether you are discussing temperature, wind speed or 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 “Normal” weather forecast is used in conjunction with a measure of 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 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.

Table 3.1 contains information about the 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 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	02-Jan-78	-5.2	22.3	10-Jan-82	-15.8	41.3
2	13-Jan-00	-10.3	33.3	17-Jan-82	-20.8	35.8
3	20-Jan-78	-10.8	28.7	19-Jan-94	-19.0	35.7
4	27-Jan-88	-6.5	11.5	23-Jan-76	-18.3	10.7
5	30-Jan-76	-10.6	14.0	05-Feb-95	-17.6	40.7
6	11-Feb-88	-6.9	23.2	06-Feb-95	-15.4	18.7
7	12-Feb-92	-6.7	5.7	17-Feb-79	-19.4	14.7
8	19-Feb-79	-6.0	6.8	25-Feb-90	-15.9	27.8
9	01-Mar-88	-8.6	9.0	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	10-Mar-03	-11.2	35.3
12	24-Mar-90	-1.5	12.2	20-Mar-86	-11.1	29.2
13	29-Mar-78	2.2	26.7	25-Mar-02	-3.5	15.2
14	07-Apr-90	1.9	31.2	31-Mar-87	-4.1	30.0
15	12-Apr-91	5.8	11.8	09-Apr-97	-0.3	23.3
16	17-Apr-90	5.1	38.0	17-Apr-02	28.2	22.0
17	24-Apr-95	8.2	13.3	27-Apr-90	29.4	19.8
18	30-Apr-87	9.7	26.8	07-May-00	29.0	39.5
19	09-May-77	11.0	35.0	09-May-79	29.7	21.5
20	19-May-82	23.9	20.7	19-May-96	28.8	38.8
21	24-May-81	23.5	11.8	21-May-75	29.4	12.5
22	29-May-81	22.5	9.3	29-May-87	32.0	18.2
23	06-Jun-76	26.7	20.7	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	13-Jul-97	31.4	16.5	14-Jul-95	36.7	17.3
28	30-Jun-97	29.1	18.8	02-Jul-02	34.3	21.7
29	17-Jul-75	31.1	13.5	20-Jul-77	33.8	16.3
30	26-Jul-78	29.8	18.8	30-Jul-99	34.4	18.0
31	01-Aug-80	28.3	21.2	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	18-Aug-86	26.6	18.3	28-Aug-77	30.6	25.3
35	27-Aug-01	29.2	14.3	28-Aug-73	35.6	26.7
36	08-Sep-91	26.1	11.0	03-Sep-73	32.8	9.3
37	11-Sep-78	29.6	19.3	10-Sep-02	34.2	29.7
38	18-Sep-79	24.6	26.0	16-Sep-91	31.2	30.3
39	27-Sep-89	12.7	7.3	22-Sep-70	26.7	21.3
40	05-Oct-84	7.2	11.7	01-Oct-02	28.8	34.2
41	08-Oct-74	8.9	14.2	09-Oct-97	23.9	17.5
42	15-Oct-96	7.6	13.2	21-Oct-79	23.5	25.8
43	25-Oct-87	8.1	20.3	22-Oct-79	24.6	25.3
44	27-Oct-76	2.2	13.0	07-Nov-93	2.6	26.0
45	05-Nov-98	3.5	16.7	12-Nov-95	0.5	34.3
46	20-Nov-93	1.0	35.7	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
53	02-Jan-78	-5.2	22.3	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 both 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 3.1 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	1.5
1996	5,176	0.9	39.5	23.9	1.038	1.0
1997	5,298	2.4	50.0	26.5	1.057	1.8
1998	5,476	3.4	50.1	0.2	1.082	2.3
1999	5,672	3.6	62.9	25.6	1.109	2.6
2000	5,856	3.2	67.4	7.1	1.136	2.4
2001	5,962	1.8	70.3	4.2	1.156	1.7
2002	6,052	1.5	79.6	13.3	1.176	1.7
2003	6,195	2.4	80.9	1.7	1.203	2.3
2004 (f)	6,320	2.0	70.0	-13.5	1.223	1.6
2005 (f)	6,396	1.2	71.8	2.6	1.240	1.4

- 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 large divergence between the weather-corrected and actual values in late summer is the impact of the blackout. The weather-corrected values have been adjusted to include an estimate of unsupplied demand (a result of the blackout) whereas the actuals do not.

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

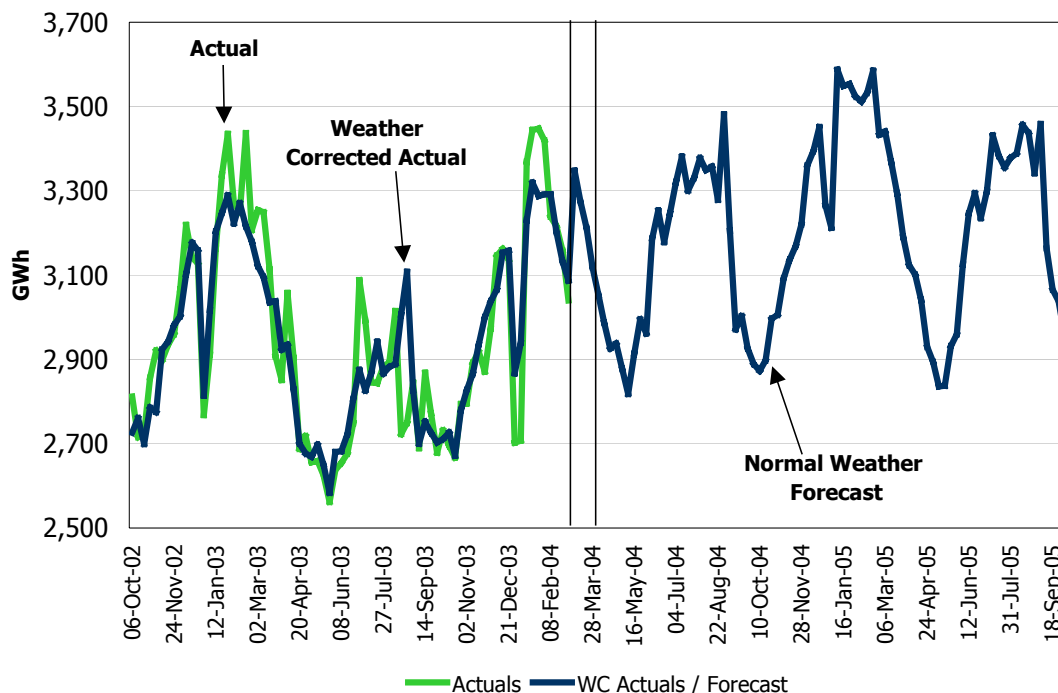
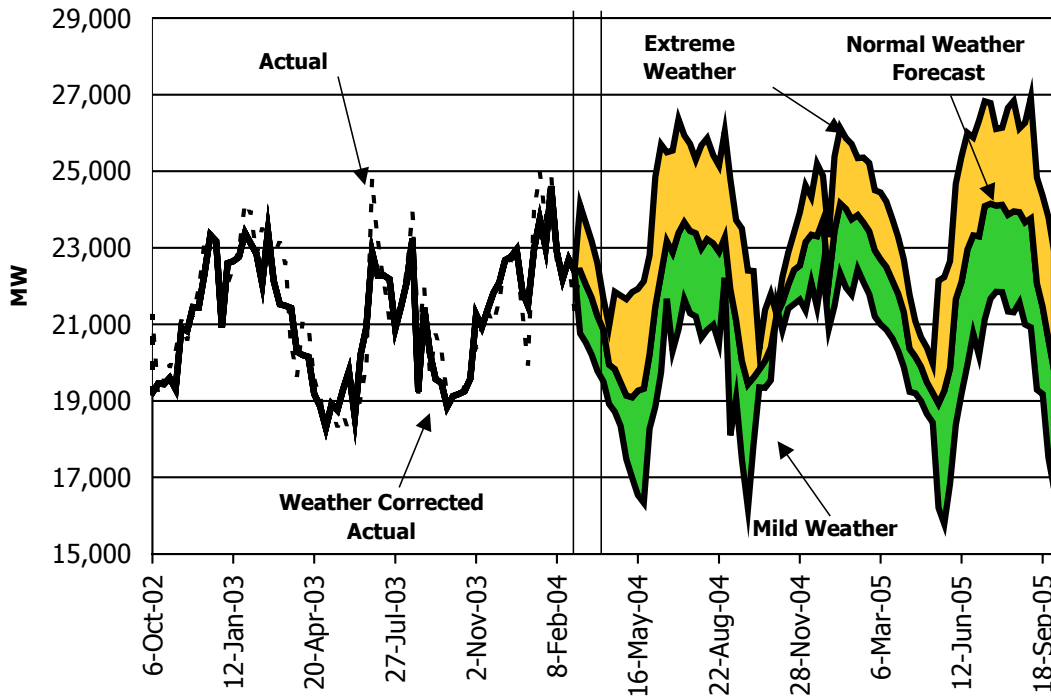


Figure 4.2 shows the range of weekly peak demands. The bottom of the peak demand range is generated via a Mild weather scenario. The Mild weather scenario is the opposite of the Extreme weather scenario, based on warm temperatures in the winter and cool summer temperatures. The middle of the range (the 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 thrust of the analysis in the resource and transmission assessments.

Table 4.1 contains the weekly forecast of energy and peak demand. As well, the table includes the week number and the 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. The last column of the table has the weekly energy demand forecast under Normal weather.

Figure 4.2: Weekly Peak Demand Forecast – Weather Scenarios



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. Up to 300 MW of price sensitive demand is treated as an additional resource in the assessments.

**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)
14	04-Apr-04	1.9	20,851	21,524	21,671	3,052
15	11-Apr-04	5.8	19,946	20,461	20,957	2,987
16	18-Apr-04	5.1	19,829	20,388	21,849	2,926
17	25-Apr-04	8.2	19,483	20,053	21,751	2,937
18	02-May-04	9.7	19,145	19,981	21,653	2,877
19	09-May-04	11.0	19,093	20,141	21,841	2,818
20	16-May-04	23.9	19,264	20,627	21,925	2,913
21	23-May-04	23.5	19,321	20,814	22,124	2,995
22	30-May-04	22.5	20,217	21,189	22,803	2,961
23	06-Jun-04	26.7	21,464	22,774	24,852	3,186
24	13-Jun-04	30.7	22,314	23,600	25,694	3,253
25	20-Jun-04	31.3	23,176	23,928	25,490	3,179
26	27-Jun-04	28.5	22,879	24,168	25,540	3,246
27	04-Jul-04	31.4	23,383	24,643	26,355	3,321
28	11-Jul-04	29.1	23,668	24,675	25,932	3,381
29	18-Jul-04	31.1	23,441	24,519	25,717	3,300
30	25-Jul-04	29.8	23,378	24,464	25,301	3,330
31	01-Aug-04	28.3	22,994	24,168	25,678	3,378
32	08-Aug-04	26.6	23,225	24,410	25,862	3,349
33	15-Aug-04	29.6	23,112	24,175	25,418	3,358
34	22-Aug-04	26.6	22,894	24,090	25,148	3,279
35	29-Aug-04	29.2	23,271	23,798	26,036	3,481
36	05-Sep-04	26.1	21,917	23,826	24,792	3,205
37	12-Sep-04	29.6	21,107	22,123	23,719	2,971
38	19-Sep-04	24.6	20,045	21,332	23,505	3,003
39	26-Sep-04	12.7	19,438	21,066	22,404	2,926
40	03-Oct-04	7.2	19,611	20,485	22,390	2,889
41	10-Oct-04	8.9	19,823	20,058	20,357	2,872
42	17-Oct-04	7.6	20,045	20,397	21,379	2,898
43	24-Oct-04	8.1	20,396	20,827	21,791	2,996
44	31-Oct-04	2.2	21,242	21,359	21,262	3,006
45	07-Nov-04	3.5	21,565	21,927	22,226	3,092
46	14-Nov-04	1.0	22,040	22,355	22,875	3,136
47	21-Nov-04	-0.3	22,421	22,868	23,394	3,169
48	28-Nov-04	0.0	22,538	22,987	23,917	3,220
49	05-Dec-04	-3.1	23,147	24,038	24,625	3,360
50	12-Dec-04	-1.2	23,340	23,964	24,329	3,395
51	19-Dec-04	-4.7	23,304	24,234	25,191	3,451
52	26-Dec-04	-4.8	23,719	24,343	24,879	3,265
53	02-Jan-05	-4.8	22,421	23,243	24,172	3,212

(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)
1	09-Jan-05	-5.2	23,444	24,425	25,385	3,587
2	16-Jan-05	-10.3	24,153	25,069	26,122	3,549
3	23-Jan-05	-10.8	24,011	25,040	25,858	3,554
4	30-Jan-05	-6.5	23,750	24,739	25,707	3,524
5	06-Feb-05	-10.6	23,857	24,565	25,344	3,512
6	13-Feb-05	-6.9	23,656	24,434	25,356	3,533
7	20-Feb-05	-6.7	23,434	24,258	25,215	3,585
8	27-Feb-05	-6.0	22,934	23,800	24,502	3,433
9	06-Mar-05	-8.6	22,698	23,549	24,444	3,441
10	13-Mar-05	-4.9	22,500	23,322	24,206	3,368
11	20-Mar-05	-2.4	22,140	22,898	23,750	3,294
12	27-Mar-05	-1.5	21,800	22,547	23,279	3,191
13	03-Apr-05	2.2	21,325	22,045	22,699	3,124
14	10-Apr-05	1.9	20,369	20,936	21,774	3,101
15	17-Apr-05	5.8	20,157	20,636	21,083	3,041
16	24-Apr-05	5.1	19,890	20,340	20,659	2,929
17	01-May-05	8.2	19,490	19,907	20,394	2,894
18	08-May-05	9.7	19,209	19,598	19,970	2,836
19	15-May-05	11.0	18,934	20,299	22,140	2,837
20	22-May-05	23.9	19,266	21,006	22,233	2,931
21	29-May-05	23.5	19,849	21,358	22,650	2,960
22	05-Jun-05	22.5	21,654	23,295	24,671	3,126
23	12-Jun-05	26.7	22,111	23,571	25,388	3,246
24	19-Jun-05	30.7	22,957	24,461	26,002	3,294
25	26-Jun-05	31.3	23,328	24,615	25,880	3,235
26	03-Jul-05	28.5	23,296	24,852	26,322	3,299
27	10-Jul-05	31.4	24,089	25,571	26,825	3,432
28	17-Jul-05	29.1	24,147	25,386	26,779	3,382
29	24-Jul-05	31.1	24,105	25,233	26,105	3,355
30	31-Jul-05	29.8	24,119	25,259	26,142	3,378
31	07-Aug-05	28.3	23,861	25,124	26,655	3,389
32	14-Aug-05	26.6	23,949	25,265	26,831	3,456
33	21-Aug-05	29.6	23,928	25,107	26,119	3,437
34	28-Aug-05	26.6	23,665	24,999	26,271	3,342
35	04-Sep-05	29.2	23,768	25,191	26,923	3,459
36	11-Sep-05	26.1	22,072	23,461	24,830	3,164
37	18-Sep-05	29.6	21,454	22,594	24,354	3,066
38	25-Sep-05	24.6	20,606	22,151	23,802	3,038
39	02-Oct-05	12.7	19,806	21,349	22,915	2,955

#### 4.1 Comparison of Current and Previous Forecast

This section compares the current forecast with that released December 19, 2003. Both this forecast and the previous forecast are consistent with the 10-year forecast for the common time frame.

There were a number of updates and modifications that have had an impact on the demand forecast. First the model incorporated actual demand, weather and economic data from November 2003 through to January 2004. Incorporating this actual data into the model put downward pressure on the peak forecast and to a lesser extent the energy demand forecast. The economic assumptions underpinning the forecast have improved compared to the previous forecast increasing the energy demand forecast. Finally, some modification to the weather scenarios has impacted both peak and energy demand. Essentially the weather scenarios were changed to median rather than an average approach. This change was made to incorporate a more appropriate representation of the interaction of the four weather elements, in turn properly representing the joint probability of the four weather elements. This change contributed to a

lower peak demand forecast. As well, the weather scenarios were also updated to include actual weather for 2003.

All of these changes led to an overall lower peak demand forecast and a higher energy demand forecast. The system continues to exhibit increased heat sensitivity through increased space cooling penetration and growth. Table 4.2 shows some of the differences between the current and previous forecast.

**Table 4.2: Current Versus Previous Forecast**

Week Ending	Energy Demand	Normal Weather Peak Demand	Extreme Weather Peak Demand
	(GWh)	(MW)	(MW)
Apr-04	11,971	19,946	21,849
Difference (Current - Previous)	-48	18	995
Jul-04	13,423	23,668	25,932
Difference (Current - Previous)	44	-137	-506
Oct-04	12,498	21,242	21,791
Difference (Current - Previous)	-57	435	162
Jan-05	14,240	24,153	26,122
Difference (Current - Previous)	0	0	0
Apr-05	12,091	20,369	21,774
Difference (Current - Previous)	0	0	0

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## Appendix A - Energy Demand Forecast Details

**Table A1: Weekly Zonal Energy Forecast, Normal Weather**

Week Ending	Weekly Energy (GWh)										Total System
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	
04-Apr-04	152	222	182	175	216	936	119	7	556	330	2,896
11-Apr-04	153	217	176	156	209	913	114	7	537	320	2,801
18-Apr-04	152	216	177	164	202	914	116	7	541	322	2,811
25-Apr-04	149	207	171	159	196	902	113	7	533	316	2,754
02-May-04	148	200	171	161	195	889	114	6	530	318	2,732
09-May-04	148	198	172	164	192	886	111	6	530	313	2,721
16-May-04	144	197	168	158	189	884	112	6	526	319	2,704
23-May-04	143	198	170	157	191	879	113	6	522	321	2,699
30-May-04	140	200	168	150	194	869	111	7	511	314	2,663
06-Jun-04	143	193	167	145	214	951	120	6	539	342	2,821
13-Jun-04	143	187	166	143	216	978	123	7	560	353	2,876
20-Jun-04	144	185	170	147	218	1,011	121	7	584	347	2,934
27-Jun-04	142	183	172	150	223	1,015	124	8	591	350	2,959
04-Jul-04	139	182	174	150	222	1,044	128	7	602	358	3,007
11-Jul-04	137	183	173	151	229	1,052	126	7	599	359	3,018
18-Jul-04	139	186	178	155	234	1,075	129	6	594	377	3,073
25-Jul-04	139	187	172	152	230	1,057	128	6	580	389	3,040
01-Aug-04	140	185	173	153	233	1,059	126	6	582	382	3,040
08-Aug-04	143	189	171	150	233	1,045	125	7	575	372	3,009
15-Aug-04	142	192	171	150	232	1,059	129	7	583	385	3,050
22-Aug-04	144	195	168	147	230	1,039	129	7	576	381	3,016
29-Aug-04	145	202	172	148	232	1,043	133	7	580	390	3,051
05-Sep-04	140	204	161	141	210	970	124	7	555	364	2,876
12-Sep-04	136	203	155	130	205	930	114	7	532	337	2,749
19-Sep-04	144	206	154	127	213	935	113	7	535	328	2,762
26-Sep-04	146	211	157	131	215	925	113	7	532	324	2,761
03-Oct-04	148	210	157	130	219	935	112	7	534	322	2,774
10-Oct-04	149	215	166	140	218	937	114	7	537	323	2,805
17-Oct-04	149	217	170	146	214	918	112	7	533	316	2,782
24-Oct-04	151	223	181	158	217	947	116	7	554	329	2,883
31-Oct-04	151	225	186	165	215	949	116	7	560	329	2,903
07-Nov-04	156	233	181	164	229	958	119	9	560	336	2,943
14-Nov-04	157	232	185	168	232	977	120	9	569	342	2,991
21-Nov-04	159	235	191	174	233	991	121	9	576	344	3,031
28-Nov-04	159	238	196	180	236	997	121	9	584	345	3,064
05-Dec-04	161	238	207	190	244	1,024	121	9	601	345	3,141
12-Dec-04	162	239	209	193	245	1,024	123	9	603	352	3,158
19-Dec-04	161	240	211	196	247	1,027	123	9	605	353	3,172
26-Dec-04	153	236	205	194	241	985	117	8	581	348	3,070

(Table A1 – continued)

	Weekly Energy (GWh)										Total System
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	
02-Jan-05	155	242	201	188	239	945	113	8	556	329	2,976
09-Jan-05	168	251	216	201	257	1,045	125	8	611	358	3,239
16-Jan-05	168	254	220	205	260	1,048	125	9	617	361	3,266
23-Jan-05	168	254	223	206	262	1,053	126	9	620	360	3,282
30-Jan-05	167	252	215	201	253	1,045	125	9	616	360	3,244
06-Feb-05	167	254	220	204	253	1,041	126	9	615	359	3,247
13-Feb-05	168	248	219	204	255	1,052	127	9	620	362	3,264
20-Feb-05	169	245	216	200	248	1,039	126	9	614	358	3,225
27-Feb-05	166	245	209	194	241	1,020	125	9	599	349	3,157
06-Mar-05	164	241	206	194	242	1,017	125	10	596	349	3,145
13-Mar-05	163	241	201	192	234	1,007	124	9	591	347	3,109
20-Mar-05	160	234	197	191	231	992	123	9	586	342	3,065
27-Mar-05	154	229	191	187	227	950	120	8	567	332	2,965
03-Apr-05	153	225	184	178	221	942	119	7	560	331	2,920
10-Apr-05	156	222	182	162	216	956	118	7	558	336	2,914
17-Apr-05	153	216	182	167	210	938	117	7	552	328	2,871
24-Apr-05	151	213	179	167	201	922	116	7	546	325	2,826
01-May-05	148	204	172	162	196	911	113	6	538	319	2,770
08-May-05	149	198	173	164	195	899	114	6	537	322	2,756
15-May-05	147	199	174	165	192	896	112	6	535	317	2,743
22-May-05	144	198	170	158	190	895	113	6	531	323	2,727
29-May-05	142	200	170	154	189	867	112	7	513	319	2,673
05-Jun-05	143	194	169	147	211	958	119	6	545	343	2,837
12-Jun-05	144	190	167	143	218	974	122	7	557	350	2,870
19-Jun-05	143	184	168	143	216	996	124	7	577	356	2,916
26-Jun-05	144	182	172	148	219	1,031	123	7	597	350	2,975
03-Jul-05	140	182	174	151	226	1,039	126	7	604	355	3,007
10-Jul-05	138	181	175	151	228	1,069	130	7	610	370	3,059
17-Jul-05	139	184	174	152	233	1,076	128	6	601	372	3,066
24-Jul-05	140	188	179	156	237	1,096	131	6	597	393	3,123
31-Jul-05	140	186	174	154	233	1,079	130	6	590	401	3,094
07-Aug-05	143	187	173	151	234	1,065	129	7	584	389	3,061
14-Aug-05	144	191	176	154	240	1,090	129	7	597	387	3,114
21-Aug-05	144	196	173	151	236	1,083	132	7	596	396	3,113
28-Aug-05	146	199	171	148	233	1,063	132	7	589	392	3,079
04-Sep-05	142	205	171	149	227	1,023	129	7	579	386	3,018
11-Sep-05	135	203	158	134	207	954	120	7	544	361	2,821
18-Sep-05	142	203	156	130	212	970	118	8	552	348	2,838
25-Sep-05	145	205	153	125	217	953	114	7	543	334	2,796
02-Oct-05	148	211	157	130	218	941	114	7	539	329	2,796

- End of Section -

## Appendix B - Peak Demand Forecast Details

**Table B1: Weekly Zonal Coincident Peak Demand Forecast, Normal Weather**

Week	Hourly Coincident Peak Demand (MW)										Total System	Load Forecast Uncertainty
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West		
04-Apr-04	915	1,373	1,424	1,561	1,599	6,759	820	52	4,015	2,333	20,851	794
11-Apr-04	944	1,343	1,301	1,266	1,518	6,632	791	48	3,851	2,252	19,946	515
18-Apr-04	938	1,361	1,323	1,284	1,476	6,525	802	47	3,805	2,268	19,829	559
25-Apr-04	913	1,310	1,301	1,270	1,428	6,470	779	45	3,784	2,183	19,483	569
02-May-04	902	1,267	1,283	1,258	1,417	6,327	771	41	3,715	2,164	19,145	836
09-May-04	926	1,270	1,234	1,279	1,361	6,261	762	40	3,738	2,222	19,093	1,048
16-May-04	856	1,171	1,176	1,157	1,373	6,581	794	40	3,696	2,420	19,264	1,362
23-May-04	859	1,210	1,234	1,177	1,463	6,461	809	40	3,625	2,443	19,321	1,493
30-May-04	856	1,232	1,327	1,264	1,513	7,029	782	44	3,838	2,332	20,217	972
06-Jun-04	885	1,206	1,323	1,262	1,689	7,590	856	44	4,080	2,529	21,464	1,310
13-Jun-04	878	1,166	1,346	1,312	1,700	7,970	907	46	4,291	2,698	22,314	1,286
20-Jun-04	874	1,163	1,395	1,366	1,754	8,218	967	50	4,448	2,941	23,176	752
27-Jun-04	871	1,126	1,383	1,360	1,691	8,228	922	53	4,540	2,705	22,879	1,288
04-Jul-04	871	1,124	1,417	1,409	1,734	8,460	931	54	4,665	2,718	23,383	1,006
11-Jul-04	846	1,155	1,462	1,454	1,805	8,636	885	52	4,702	2,671	23,668	1,259
18-Jul-04	844	1,154	1,432	1,441	1,822	8,412	937	47	4,517	2,835	23,441	1,079
25-Jul-04	836	1,134	1,341	1,411	1,738	8,377	977	46	4,431	3,087	23,378	1,086
01-Aug-04	844	1,105	1,323	1,376	1,693	8,193	980	46	4,364	3,070	22,994	1,174
08-Aug-04	876	1,160	1,404	1,454	1,877	8,284	901	47	4,423	2,799	23,225	1,184
15-Aug-04	880	1,191	1,397	1,395	1,852	8,178	927	48	4,388	2,856	23,112	1,063
22-Aug-04	893	1,167	1,341	1,336	1,769	8,256	902	49	4,404	2,777	22,894	1,196
29-Aug-04	881	1,220	1,377	1,327	1,776	8,276	966	51	4,428	2,969	23,271	1,071
05-Sep-04	880	1,199	1,215	1,167	1,618	7,873	897	47	4,241	2,780	21,917	1,607
12-Sep-04	835	1,230	1,200	1,115	1,454	7,520	893	51	4,035	2,774	21,107	1,016
19-Sep-04	871	1,227	1,150	1,074	1,585	7,021	792	52	3,848	2,425	20,045	1,288
26-Sep-04	909	1,296	1,149	1,134	1,556	6,566	772	47	3,765	2,244	19,438	1,628
03-Oct-04	920	1,302	1,169	1,175	1,612	6,644	752	46	3,793	2,198	19,611	874
10-Oct-04	915	1,333	1,264	1,212	1,600	6,673	763	46	3,803	2,214	19,823	234
17-Oct-04	901	1,340	1,325	1,288	1,600	6,715	762	48	3,863	2,203	20,045	352
24-Oct-04	925	1,392	1,373	1,349	1,586	6,746	782	48	3,912	2,283	20,396	431
31-Oct-04	934	1,400	1,473	1,465	1,587	7,071	798	48	4,117	2,349	21,242	642
07-Nov-04	984	1,430	1,402	1,414	1,653	7,190	835	60	4,149	2,448	21,565	362
14-Nov-04	1,011	1,445	1,450	1,481	1,720	7,330	840	61	4,221	2,481	22,040	315
21-Nov-04	986	1,485	1,588	1,503	1,764	7,405	853	61	4,269	2,507	22,421	447
28-Nov-04	995	1,536	1,617	1,549	1,787	7,371	849	64	4,301	2,469	22,538	449
05-Dec-04	1,037	1,495	1,606	1,663	1,835	7,596	866	64	4,454	2,531	23,147	892
12-Dec-04	1,019	1,491	1,641	1,721	1,871	7,581	879	64	4,485	2,588	23,340	624
19-Dec-04	996	1,501	1,622	1,708	1,833	7,664	864	63	4,516	2,537	23,304	930
26-Dec-04	1,044	1,570	1,677	1,766	1,885	7,677	888	64	4,510	2,638	23,719	624

(Table B1 – continued)

Hourly Coincident Peak Demand (MW)												
Week	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	Total System	Load Forecast Uncertainty
04-Apr-04	915	1,373	1,424	1,561	1,599	6,759	820	52	4,015	2,333	20,851	794
11-Apr-04	944	1,343	1,301	1,266	1,518	6,632	791	48	3,851	2,252	19,946	515
18-Apr-04	938	1,361	1,323	1,284	1,476	6,525	802	47	3,805	2,268	19,829	559
25-Apr-04	913	1,310	1,301	1,270	1,428	6,470	779	45	3,784	2,183	19,483	569
02-May-04	902	1,267	1,283	1,258	1,417	6,327	771	41	3,715	2,164	19,145	836
09-May-04	926	1,270	1,234	1,279	1,361	6,261	762	40	3,738	2,222	19,093	1,048
16-May-04	856	1,171	1,176	1,157	1,373	6,581	794	40	3,696	2,420	19,264	1,362
23-May-04	859	1,210	1,234	1,177	1,463	6,461	809	40	3,625	2,443	19,321	1,493
30-May-04	856	1,232	1,327	1,264	1,513	7,029	782	44	3,838	2,332	20,217	972
06-Jun-04	885	1,206	1,323	1,262	1,689	7,590	856	44	4,080	2,529	21,464	1,310
13-Jun-04	878	1,166	1,346	1,312	1,700	7,970	907	46	4,291	2,698	22,314	1,286
20-Jun-04	874	1,163	1,395	1,366	1,754	8,218	967	50	4,448	2,941	23,176	752
27-Jun-04	871	1,126	1,383	1,360	1,691	8,228	922	53	4,540	2,705	22,879	1,288
04-Jul-04	871	1,124	1,417	1,409	1,734	8,460	931	54	4,665	2,718	23,383	1,006
11-Jul-04	846	1,155	1,462	1,454	1,805	8,636	885	52	4,702	2,671	23,668	1,259
18-Jul-04	844	1,154	1,432	1,441	1,822	8,412	937	47	4,517	2,835	23,441	1,079
25-Jul-04	836	1,134	1,341	1,411	1,738	8,377	977	46	4,431	3,087	23,378	1,086
01-Aug-04	844	1,105	1,323	1,376	1,693	8,193	980	46	4,364	3,070	22,994	1,174
08-Aug-04	876	1,160	1,404	1,454	1,877	8,284	901	47	4,423	2,799	23,225	1,184
15-Aug-04	880	1,191	1,397	1,395	1,852	8,178	927	48	4,388	2,856	23,112	1,063
22-Aug-04	893	1,167	1,341	1,336	1,769	8,256	902	49	4,404	2,777	22,894	1,196
29-Aug-04	881	1,220	1,377	1,327	1,776	8,276	966	51	4,428	2,969	23,271	1,071
05-Sep-04	880	1,199	1,215	1,167	1,618	7,873	897	47	4,241	2,780	21,917	1,607
12-Sep-04	835	1,230	1,200	1,115	1,454	7,520	893	51	4,035	2,774	21,107	1,016
19-Sep-04	871	1,227	1,150	1,074	1,585	7,021	792	52	3,848	2,425	20,045	1,288
26-Sep-04	909	1,296	1,149	1,134	1,556	6,566	772	47	3,765	2,244	19,438	1,628
03-Oct-04	920	1,302	1,169	1,175	1,612	6,644	752	46	3,793	2,198	19,611	874
10-Oct-04	915	1,333	1,264	1,212	1,600	6,673	763	46	3,803	2,214	19,823	234
17-Oct-04	901	1,340	1,325	1,288	1,600	6,715	762	48	3,863	2,203	20,045	352
24-Oct-04	925	1,392	1,373	1,349	1,586	6,746	782	48	3,912	2,283	20,396	431
31-Oct-04	934	1,400	1,473	1,465	1,587	7,071	798	48	4,117	2,349	21,242	642
07-Nov-04	984	1,430	1,402	1,414	1,653	7,190	835	60	4,149	2,448	21,565	362
14-Nov-04	1,011	1,445	1,450	1,481	1,720	7,330	840	61	4,221	2,481	22,040	315
21-Nov-04	986	1,485	1,588	1,503	1,764	7,405	853	61	4,269	2,507	22,421	447
28-Nov-04	995	1,536	1,617	1,549	1,787	7,371	849	64	4,301	2,469	22,538	449
05-Dec-04	1,037	1,495	1,606	1,663	1,835	7,596	866	64	4,454	2,531	23,147	892
12-Dec-04	1,019	1,491	1,641	1,721	1,871	7,581	879	64	4,485	2,588	23,340	624
19-Dec-04	996	1,501	1,622	1,708	1,833	7,664	864	63	4,516	2,537	23,304	930
26-Dec-04	1,044	1,570	1,677	1,766	1,885	7,677	888	64	4,510	2,638	23,719	624

**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	
04-Apr-04	955	1,440	1,424	1,561	1,607	6,759	820	54	4,015	2,345	20,851	20,980
11-Apr-04	972	1,425	1,330	1,273	1,543	6,724	802	54	3,851	2,253	19,946	20,227
18-Apr-04	959	1,407	1,325	1,293	1,476	6,622	812	51	3,805	2,271	19,829	20,021
25-Apr-04	957	1,366	1,301	1,283	1,429	6,594	794	49	3,784	2,198	19,483	19,755
02-May-04	943	1,300	1,283	1,278	1,423	6,496	788	47	3,727	2,192	19,145	19,477
09-May-04	930	1,292	1,286	1,279	1,388	6,473	784	45	3,738	2,222	19,093	19,437
16-May-04	924	1,304	1,278	1,259	1,383	6,627	799	42	3,696	2,423	19,264	19,735
23-May-04	910	1,308	1,294	1,282	1,501	6,461	809	43	3,663	2,443	19,321	19,714
30-May-04	885	1,311	1,327	1,282	1,551	7,029	784	63	3,840	2,365	20,217	20,437
06-Jun-04	928	1,279	1,324	1,262	1,689	7,627	860	46	4,080	2,555	21,464	21,650
13-Jun-04	915	1,233	1,346	1,329	1,737	7,970	907	48	4,296	2,699	22,314	22,480
20-Jun-04	919	1,249	1,395	1,384	1,790	8,218	967	53	4,459	2,941	23,176	23,375
27-Jun-04	906	1,225	1,383	1,384	1,766	8,228	1,013	54	4,544	3,049	22,879	23,552
04-Jul-04	901	1,203	1,436	1,409	1,740	8,504	940	55	4,665	2,809	23,383	23,662
11-Jul-04	882	1,229	1,471	1,454	1,805	8,669	942	52	4,702	2,840	23,668	24,046
18-Jul-04	894	1,253	1,439	1,441	1,822	8,437	982	48	4,517	3,015	23,441	23,848
25-Jul-04	878	1,231	1,389	1,416	1,829	8,407	979	46	4,431	3,087	23,378	23,693
01-Aug-04	896	1,260	1,353	1,376	1,770	8,227	983	46	4,364	3,070	22,994	23,345
08-Aug-04	912	1,264	1,411	1,454	1,877	8,321	932	50	4,423	2,924	23,225	23,568
15-Aug-04	913	1,295	1,401	1,395	1,852	8,233	947	48	4,388	2,967	23,112	23,439
22-Aug-04	906	1,303	1,345	1,336	1,804	8,300	917	49	4,404	2,777	22,894	23,141
29-Aug-04	930	1,373	1,377	1,361	1,880	8,323	972	50	4,428	3,024	23,271	23,718
05-Sep-04	893	1,357	1,293	1,243	1,618	7,946	898	52	4,241	2,780	21,917	22,321
12-Sep-04	883	1,354	1,200	1,135	1,507	7,520	893	53	4,037	2,774	21,107	21,356
19-Sep-04	922	1,346	1,169	1,074	1,610	7,070	800	52	3,849	2,425	20,045	20,317
26-Sep-04	926	1,379	1,189	1,134	1,560	6,586	773	52	3,765	2,244	19,438	19,608
03-Oct-04	955	1,401	1,225	1,175	1,621	6,709	766	51	3,793	2,235	19,611	19,931
10-Oct-04	946	1,406	1,264	1,212	1,600	6,682	774	51	3,810	2,246	19,823	19,991
17-Oct-04	939	1,406	1,325	1,288	1,600	6,715	774	50	3,863	2,251	20,045	20,211
24-Oct-04	947	1,446	1,374	1,349	1,586	6,746	788	50	3,921	2,289	20,396	20,496
31-Oct-04	949	1,472	1,473	1,465	1,591	7,071	803	51	4,117	2,349	21,242	21,341
07-Nov-04	999	1,562	1,488	1,414	1,695	7,190	835	63	4,149	2,448	21,565	21,843
14-Nov-04	1,014	1,582	1,519	1,481	1,734	7,330	841	64	4,221	2,481	22,040	22,267
21-Nov-04	1,019	1,583	1,588	1,538	1,772	7,438	858	62	4,278	2,519	22,421	22,655
28-Nov-04	1,029	1,611	1,617	1,580	1,787	7,397	856	65	4,319	2,490	22,538	22,751
05-Dec-04	1,045	1,661	1,691	1,663	1,848	7,596	866	65	4,454	2,531	23,147	23,420
12-Dec-04	1,048	1,661	1,710	1,721	1,882	7,581	879	67	4,485	2,588	23,340	23,622
19-Dec-04	1,034	1,660	1,717	1,716	1,846	7,664	865	66	4,516	2,537	23,304	23,621
26-Dec-04	1,055	1,684	1,754	1,766	1,901	7,677	888	64	4,510	2,638	23,719	23,937

(Table B2 – continued)

Week	Hourly Non-Coincident Peak Demand (MW)											Zonal Total
	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	System	
02-Jan-05	1,058	1,754	1,644	1,692	1,823	7,061	819	59	4,166	2,414	19,416	22,490
09-Jan-05	1,065	1,695	1,828	1,798	1,702	7,742	891	61	4,489	2,505	19,673	23,776
16-Jan-05	1,078	1,650	1,897	1,885	1,822	7,860	905	62	4,580	2,583	20,020	24,322
23-Jan-05	1,074	1,632	1,867	1,868	1,802	7,802	905	62	4,553	2,573	20,341	24,138
30-Jan-05	1,066	1,599	1,830	1,843	1,777	7,719	896	63	4,510	2,529	20,807	23,832
06-Feb-05	1,064	1,593	1,841	1,845	1,781	7,777	899	63	4,535	2,531	21,756	23,929
13-Feb-05	1,061	1,574	1,816	1,819	1,752	7,736	898	65	4,507	2,524	22,178	23,752
20-Feb-05	1,062	1,564	1,790	1,793	1,730	7,688	893	66	4,482	2,505	22,578	23,573
27-Feb-05	1,047	1,546	1,738	1,739	1,685	7,531	883	66	4,377	2,465	22,780	23,077
06-Mar-05	1,040	1,533	1,698	1,720	1,668	7,463	875	66	4,319	2,445	23,537	22,827
13-Mar-05	1,029	1,511	1,666	1,718	1,647	7,381	866	64	4,292	2,431	23,625	22,605
20-Mar-05	1,013	1,492	1,630	1,698	1,607	7,242	859	61	4,235	2,401	23,968	22,238
27-Mar-05	995	1,472	1,603	1,679	1,566	7,116	853	58	4,186	2,373	24,009	21,901
03-Apr-05	969	1,439	1,567	1,650	1,525	6,928	846	56	4,103	2,349	22,421	21,432
10-Apr-05	988	1,438	1,398	1,311	1,467	6,854	817	54	3,906	2,288	23,444	20,521
17-Apr-05	974	1,407	1,420	1,330	1,419	6,764	821	52	3,876	2,258	24,153	20,321
24-Apr-05	955	1,342	1,412	1,328	1,390	6,689	817	50	3,829	2,239	24,011	20,051
01-May-05	940	1,306	1,373	1,311	1,336	6,622	807	48	3,779	2,209	23,750	19,731
08-May-05	943	1,280	1,345	1,306	1,307	6,546	801	46	3,753	2,201	23,857	19,528
15-May-05	931	1,323	1,278	1,249	1,311	6,503	769	45	3,644	2,234	23,656	19,287
22-May-05	922	1,315	1,288	1,220	1,345	6,637	789	44	3,685	2,303	23,434	19,548
29-May-05	903	1,303	1,316	1,245	1,405	6,869	812	63	3,758	2,377	22,934	20,051
05-Jun-05	909	1,257	1,340	1,230	1,576	7,695	907	49	4,126	2,694	22,698	21,783
12-Jun-05	907	1,225	1,372	1,259	1,605	7,869	933	48	4,245	2,758	22,500	22,221
19-Jun-05	903	1,200	1,427	1,329	1,640	8,233	956	53	4,501	2,820	22,140	23,062
26-Jun-05	899	1,180	1,453	1,369	1,645	8,373	977	55	4,613	2,867	21,800	23,431
03-Jul-05	893	1,178	1,454	1,382	1,664	8,360	980	55	4,614	2,817	21,325	23,397
10-Jul-05	873	1,181	1,511	1,447	1,721	8,726	1,002	54	4,753	2,939	20,369	24,207
17-Jul-05	881	1,199	1,499	1,454	1,748	8,733	1,009	50	4,682	3,008	20,157	24,263
24-Jul-05	886	1,215	1,492	1,466	1,754	8,728	1,006	47	4,570	3,052	19,890	24,216
31-Jul-05	890	1,205	1,480	1,475	1,756	8,692	1,005	48	4,566	3,097	19,490	24,214
07-Aug-05	901	1,214	1,461	1,440	1,744	8,606	993	49	4,536	3,043	19,209	23,987
14-Aug-05	906	1,244	1,462	1,427	1,753	8,629	1,002	49	4,549	3,061	18,934	24,082
21-Aug-05	910	1,271	1,460	1,403	1,759	8,588	1,008	50	4,541	3,073	19,266	24,063
28-Aug-05	917	1,303	1,438	1,360	1,736	8,475	1,001	51	4,503	3,029	19,849	23,813
04-Sep-05	920	1,342	1,424	1,332	1,736	8,531	1,009	53	4,528	3,058	21,654	23,933
11-Sep-05	895	1,347	1,380	1,302	1,581	7,863	911	54	4,183	2,753	22,111	22,269
18-Sep-05	910	1,355	1,297	1,204	1,570	7,654	889	54	4,078	2,671	22,957	21,682
25-Sep-05	928	1,366	1,214	1,105	1,551	7,331	848	53	3,953	2,525	23,328	20,874
02-Oct-05	942	1,380	1,201	1,076	1,525	7,004	810	52	3,839	2,380	23,296	20,209

- End of Section -

## 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	Daily Avg Temperature > 16° C 10°C > and < 16° C < 10°C	1°C Increase	6,780 MWh Increase
		1°C Increase	430 MWh Increase
		1°C Decrease	2,590 MWh Increase
	Daily Avg Humidity - Dewpoint > 16° C 10°C > and < 16° C < 10°C	1°C Increase	2,470 MWh Increase
		1°C Increase	160 MWh Increase
		1°C Decrease	940 MWh Increase
	Wind		
	Summer	1 km/hr Decrease	210 MWh Increase
	Winter	1 km/hr Increase	190 MWh Increase
	Cloud		
Summer	Decrease of 1 on Scale	1,080 MWh Decrease	
Winter	Increase of 1 on Scale	1,690 MWh Increase	
Economic	Employment	Increase of 1,000 jobs	25 MWh Increase
	Housing Stock	Increase of 1,000 houses	35 MWh Increase
Calendar	Holidays	New Year's Day	68,000 MWh Decrease
		Good Friday	44,000 MWh Decrease
		Victoria Day	49,000 MWh Decrease
		Canada Day	23,000 MWh Decrease
		August Civic Holiday	38,000 MWh Decrease
		Labour Day	55,000 MWh Decrease
		Thanksgiving Day	56,000 MWh Decrease
		Remembrance Day	6,000 MWh Decrease
		Christmas	86,000 MWh Decrease
		Boxing Day	51,000 MWh Decrease
		New Year's Eve	19,000 MWh Decrease
		Week Between Christmas and New Years Eve	37,000 MWh Decrease
	Day of Week	Monday vs Sunday	44,000 MWh Increase
		Tuesday vs Sunday	46,000 MWh Increase
		Wednesday vs Sunday	47,000 MWh Increase
		Thursday vs Sunday	47,000 MWh Increase
	Friday vs Sunday	43,000 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	Temperature		
	> 16° C	1°C Increase	380 MW Increase
	10°C > and < 16° C	1°C Increase	50 MW Increase
	< 10°C	1°C Decrease	110 MW Increase
	Humidity - Dewpoint		
	> 16° C	1°C Increase	140 MW Increase
	10°C > and < 16° C	1°C Increase	20 MW Increase
	< 10°C	1°C Decrease	40 MW Increase
	Wind		
	Summer	1 km/hr Decrease	10 MW Increase
Winter	1 km/hr Increase	10 MW Increase	
Cloud			
Summer	Decrease of 1 on Scale	80 MW Increase	
Winter	Increase of 1 on Scale	70 MW Increase	
Economic	Employment	Increase of 1,000 jobs	1 MW Increase
	Housing Stock	Increase of 1,000 houses	2 MW Increase
Calendar	Holidays	New Year's Day	3,100 MW Decrease
		Good Friday	2,000 MW Decrease
		Victoria Day	2,300 MW Decrease
		Canada Day	800 MW Decrease
		August Civic Holiday	1,600 MW Decrease
		Labour Day	2,300 MW Decrease
		Thanksgiving Day	2,500 MW Decrease
		Remembrance Day	300 MW Decrease
		Christmas	4,700 MW Decrease
		Boxing Day	2,600 MW Decrease
		New Year's Eve	1,100 MW Decrease
		Week Between Christmas and New Years Eve	1,500 MW Decrease
	Day of Week	Monday vs Sunday	2,000 MW Increase
		Tuesday vs Sunday	2,000 MW Increase
		Wednesday vs Sunday	2,000 MW Increase
		Thursday vs Sunday	1,900 MW Increase
Friday vs Sunday	1,600 MW Increase		
Saturday vs Sunday	200 MW Increase		

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