Independent Electricity Market Operator

10-YEAR OUTLOOK:

Ontario Demand Forecast

From January 2005 to December 2014

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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 looks at the demand forecast for the ten-year period from 2005 to 2014.

Economic Outlook

The economic assumptions that underpin the forecast have been updated to reflect the most recent outlook for the Ontario economy. This represents a fairly significant change since the previous 10-Year Outlook. The events of the past year have had a significant impact. The continued war on terrorism, combined with the invasion of Iraq and subsequent transitional efforts towards democracy have led to massive budget deficits for the United States. This in turn led to the devaluation of the U.S. dollar. Over the course of 2003, the Canadian dollar appreciated by 20% against the U.S. currency. Some of Ontario's industries have been shielded from the currency movements as the commodities they produce have similarly increased in their U.S. price. However, for those exporters who are shipping manufactured products south of the border their competitive position has been seriously impaired. The economic indicators have been mixed. Shipments and exports are down, but the economy continues to create jobs. Likewise the U.S. economy has exhibited strong growth numbers but has been unable to create jobs. On the positive side, inflation and interest rates remain low helping to fuel consumption in both countries.

The long-run forecast is not totally dependent on what transpires in 2004. However growth based on interest sensitive consumption and growing U.S. budget deficits do not make for strong fundamentals for long-term sustained growth. Due to these reasons, economic growth in Ontario is expected to be modest over the course of the forecast. This growth is lower than that in the previous forecast.

Actual Demand

Since the release of the last 10-Year forecast the actual demand numbers - both energy and peak have been lower than expected. February 2004 was the first month that had year-over-year growth in excess of the rate posted in April 2003. For the period May 2003 to February 2004, only June 2003 and January 2004 had higher peaks than the previous year. The electricity demand data was as equally mixed as the economic data over the same time period. Additionally, the impact of the blackout in August and the "bounce back" effect in September, as industry made up for lost production, all made 2003 a year of ups and downs without any clear trend.

Demand Forecast

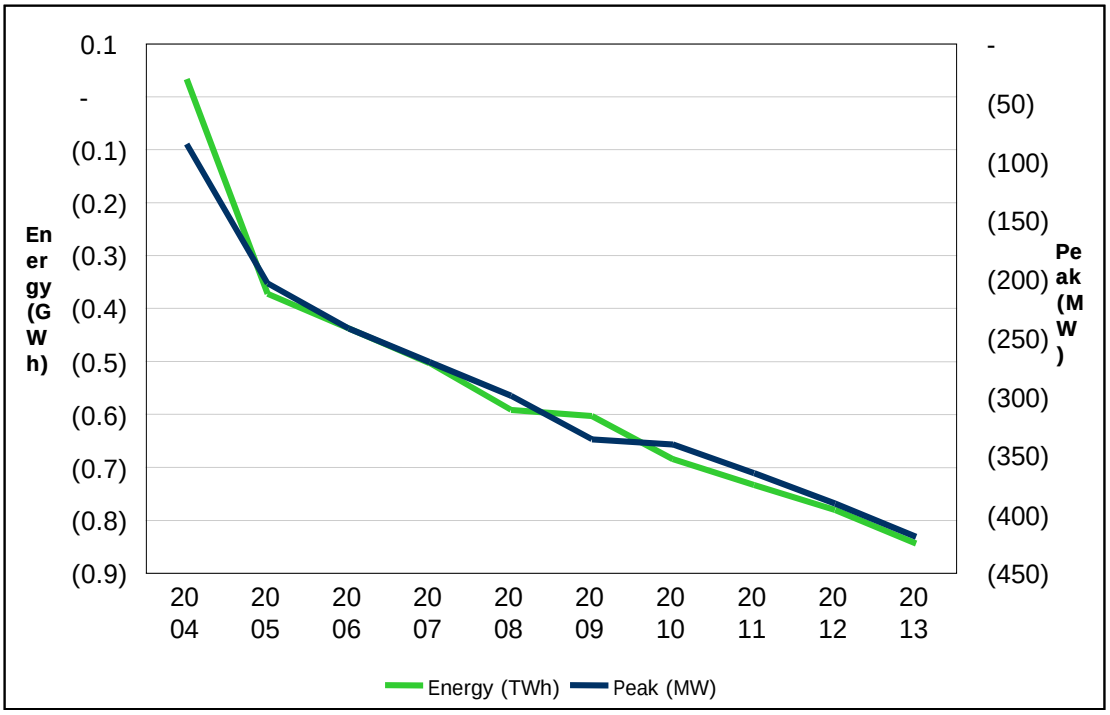
Given a lower economic growth outlook and weak demand in 2003, the forecast of electricity demand is not surprisingly lower than in the previous 10-Year forecast. Energy demand will show average annual growth of 0.9% over the forecast (2005-2014). Total energy demand is expected to be 0.8 TWh lower in 2013.

Likewise, given them same set of circumstances, the peak demand forecast is also lower than those contained in the previous forecast. The winter peak is expected to exhibit average annual

growth of 0.7% (similar to last years 0.7%) over the 2005-2014 time frame. The summer peaks are expected to average growth of 1.1% (versus 1.2%) over the 2005-2014 period. However, given the different starting points and growth rates, the annual peak will be over 400 MW lower in 2013 than in the previous forecast. The updated forecast calls for the system to be summer peaking in 2006 (under Normal weather). The forecast last year had the system summer peaking in 2005.

Figure 1 graphically displays the difference in annual energy and peak demand between this forecast and the previous 10-year 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 an annual basis for the next 10 years. This Ontario Demand Forecast meets this requirement and covers the 10-Year period from January 2005 to December 2014. It supercedes the previous forecast for the period January 2004 to December 2013, dated March 31, 2003.

1.2 Demand Forecast Document

This document provides a 10-Year forecast of electricity demand for Ontario, based on the stated assumptions, and using the methodology described in the 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 September 2003. Actuals reported since the time of the forecast have been incorporated into the tables and figures of this document.

Section 2.0 looks at historical demand and the factors that shape it. Section 3.0 describes the assumptions used in this forecast of electricity demand and Section 4.0 presents the forecast. Appendices A through C contain additional demand forecast details and analysis. The tables in this document can be down loaded in a spreadsheet from the IMO web site.

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, or to 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 historical energy demand, hourly load shapes and peak demand. Each of these items is discussed from the perspective of how they are impacted by the three classes of drivers (weather, calendar and economic).

Energy demand represents the total consumption of electricity over a specified period of time, be it an hour, day, week, month, season or year. The hourly load shape refers to the daily consumption profile and bridges the discussion from energy to peak demand. Finally, peak demand represents the maximum requirement for electricity in an hour. Ontario measures peak demand over the course of a clock hour. Peaks are classified by the time horizon used: daily, weekly, monthly, seasonal or annual peak.

Table 2.1 shows the actual annual energy and peak demand, on a calendar basis, for the period 1987-2003.

Table 2.1: Historic Ontario Annual Energy and Peak Demand

Calendar Year	Annual Demand				
	Actual Energy (TWh)	Weather-Corrected Energy (TWh)	Actual Peak (MW)	Weather-Corrected Peak (MW)	Minimum Hour (MW)
1987	126.46		20,448		8,908
1988	134.39		22,933		8,930
1989	140.77		23,491		9,732
1990	136.74		22,272		9,477
1991	136.97		23,046		9,734
1992	134.38		23,463		9,730
1993	133.48		21,964		9,782
1994	134.87		23,857		9,904
1995	137.04	135.84	22,812	22,120	10,100
1996	137.42	136.66	22,072	21,696	10,123
1997	138.37	138.21	22,030	21,542	10,430
1998	139.93	140.46	*22,403*	21,768	10,971
1999	144.09	143.45	*23,433*	22,187	10,903
2000	146.95	147.18	23,301	22,697	11,624
2001	146.91	147.21	*25,239*	22,659	11,157
2002	152.96	151.54	*25,414*	*23,963*	11,537
2003	151.72	151.71	*24,753*	23,431	2,270

Notes to Table 2.1:
Shaded boxes indicate a summer peak. For 2003, actual energy, peak and minimum hour demand have not been adjusted to exclude the impacts of the blackout. Weather corrected energy and peak demand include an adjustment to estimate the amount of demand lost during the blackout and ensuing calls for conservation.

2.1 Historical Energy Demand

The historical time frame used for this analysis is 1987 through to 2003. Actual energy demand has averaged annual growth of 1.1% over that time frame. This period spans a stretch of long and sustained strong economic growth and the most severe recession Ontario had ever experienced. As well, dramatic electricity price increases in the early 1990's combined with low natural gas prices started to erode the electric heating load in the province. This trend continues today, but has slowed due to increasing natural gas penetration. Since the 1990's there has been a dramatic increase in cooling load as air conditioning has become commonplace in new homes. Therefore, the growth in energy demand has not been consistent across all seasons. Winter energy demand has averaged annual growth of 1.1% whereas summer energy demand has averaged growth of 1.5% per annum (after adjusting 2003 for lost demand due to the blackout). Of course, this is biased by the weather of either the base or most recent year, but gives a fair representation of the fact that demand is not growing evenly throughout the year.

Energy demand is affected by all three classes of drivers but to varying degrees. The next section looks at the impact of weather, followed by calendar and economic impacts.

2.12 Weather Impacts on Energy Demand

Since energy is accrued over a period of time, the impact of weather is mitigated as the time horizon grows. The impact of weather is significant on any particular day but begins to wane in terms of seasons or years. This is due to the fact that the random nature of weather will see periods of extreme heat or cold offset by mild temperatures.

In order to remove the variance of weather from energy demand we standardize or correct demand to a common weather pattern called Normal weather. Table 2.2 shows both annual energy demand and weather-corrected demand for the period of 1995-2003. For 2003, the weather-corrected figure includes an adjustment to account for an estimate of lost demand for the period of the blackout and ensuing week when consumers were asked to reduce electricity consumption.

Table 2.2: Actual and Weather-Corrected Annual Energy Demand

Calendar Year	Annual Energy Demand				
	Actual Energy (TWh)	Annual Growth (%)	Weather-Corrected Energy (TWh)	Annual Growth (%)	Weather Correction Impact
1995	137.0	1.6%	135.8		-0.9%
1996	137.4	0.3%	136.7	0.6%	-0.5%
1997	138.4	0.7%	138.2	1.1%	-0.1%
1998	139.9	1.1%	140.5	1.6%	0.4%
1999	144.1	3.0%	143.5	2.1%	-0.4%
2000	146.9	2.0%	147.2	2.6%	0.2%
2001	146.9	0.0%	147.2	0.0%	0.2%
2002	153.0	4.1%	151.5	2.9%	-0.9%
2003	151.7	-0.8%	151.7	0.1%	0.0%

For each year, the annual energy demand and weather-corrected energy demand in Table 2.2 were within 1.0% of each other. This reaffirms the notion that the random nature of weather effects will be offsetting given a large enough time frame. The years with the biggest deviation were 1995 and 2002. In Figure 2.1 one can see the deviation between the two lines is substantial in 2002. The year 2002 had the hottest summer in the last 30 years and 1995 was the second hottest. Since the system is very sensitive to high temperatures it is reasonable that the years with the hottest summers would have the largest weather-correction.

Figure 2.1: Actual and Weather-Corrected Energy Demand

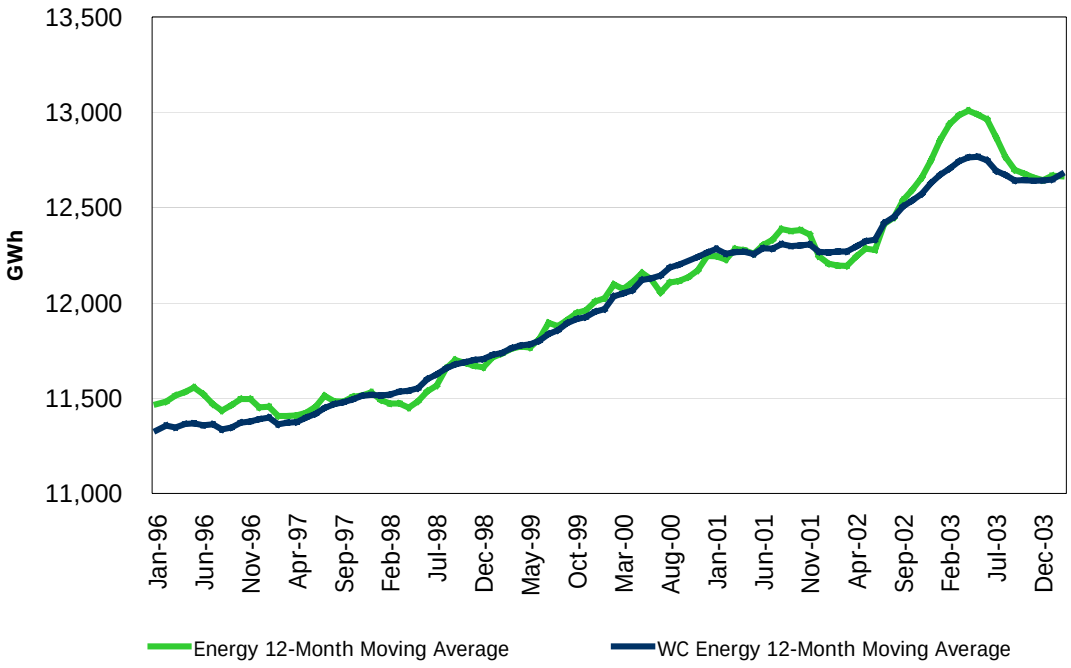


Table 2.3: Weather Impact - Months and Seasons

Rank	Hottest Months	Coldest Months	Hottest Summers	Coldest Winters
1	Jul-99	Jan-94	1995	1982
2	Jul-02	Jan-77	2002	1994
3	Jul-88	Jan-82	1999	1995
4	Jul-87	Jan-04	1994	1976
5	Aug-01	Dec-89	1977	1999
6	Aug-73	Jan-70	1988	1981
7	Jul-83	Jan-76	2001	1971
8	Jul-95	Jan-71	1975	2004
9	Aug-02	Jan-78	1973	1977
10	Jul-89	Jan-81	1987	1979

Table 2.3 shows the 10 Hottest and Coldest months and seasons since 1970. The term hottest or coldest is used to denote the weather impact on demand. The weather impact is a combination of temperature, humidity, cloud cover and wind speed. Note that 8 of the hottest months are also in the hottest summers and 7 of the coldest months are also coldest winters. Recent history has tended to have hotter summers and milder winters. The winter of 2004 is included in the list based on an estimate that includes a typical March.

Table 2.4: Seasonal Demand

Seasonal Energy Demand										
Seasonal Year	Actual Energy Demand					Weather-Corrected Energy Demand				
	Winter (TWh)	Spring (TWh)	Summer (TWh)	Fall (TWh)	Total (TWh)	Winter (TWh)	Spring (TWh)	Summer (TWh)	Fall (TWh)	Total (TWh)
1996	62.0	21.5	32.9	21.5	137.9	60.9	21.2	32.9	21.4	136.4
1997	61.0	21.7	33.6	21.8	138.1	60.9	21.5	33.7	21.7	137.9
1998	60.5	21.8	35.7	22.2	140.2	61.4	21.7	35.0	22.1	140.2
1999	61.4	21.9	37.1	23.0	143.3	62.3	22.0	35.9	22.8	143.0
2000	62.9	22.9	36.5	23.3	145.6	63.9	22.8	36.7	23.2	146.7
2001	64.7	22.6	38.0	23.3	148.6	64.5	22.7	37.3	23.2	147.6
2002	62.4	23.7	40.0	25.0	151.1	64.1	23.4	38.8	24.2	150.4
2003	67.2	23.7	37.3	24.0	152.1	66.6	23.7	37.6	23.9	151.7
Average Daily Energy Demand										
Seasonal Year	Actual Daily Energy Demand					Weather-Corrected Daily Energy Demand				
	Winter (GWh)	Spring (GWh)	Summer (GWh)	Fall (GWh)	Total (GWh)	Winter (GWh)	Spring (GWh)	Summer (GWh)	Fall (GWh)	Total (GWh)
1996	408	352	358	353	377	401	347	358	351	373
1997	404	355	366	358	378	404	353	367	356	378
1998	401	357	388	364	384	407	356	380	362	384
1999	407	359	403	377	393	413	361	390	374	392
2000	414	375	396	382	398	421	374	398	381	401
2001	429	370	413	381	407	427	372	405	380	404
2002	414	388	434	410	414	424	383	422	396	412
2003	445	389	405	393	417	441	388	409	391	416
Growth in Daily Energy Demand										
Seasonal Year	Actual Growth					Weather-Corrected Growth				
	Winter	Spring	Summer	Fall	Total	Winter	Spring	Summer	Fall	Total
1997	-1.1%	0.9%	2.2%	1.3%	0.4%	0.7%	1.6%	2.5%	1.5%	1.4%
1998	-0.7%	0.6%	6.1%	1.6%	1.5%	0.8%	1.0%	3.7%	1.7%	1.7%
1999	1.5%	0.4%	3.8%	3.6%	2.2%	1.5%	1.1%	2.5%	3.1%	1.9%
2000	1.8%	4.6%	-1.6%	1.5%	1.3%	1.9%	3.8%	2.2%	1.9%	2.3%
2001	3.5%	-1.3%	4.3%	-0.3%	2.3%	1.5%	-0.6%	1.7%	-0.3%	0.9%
2002	-3.5%	4.9%	5.1%	7.5%	1.7%	-0.6%	2.9%	4.1%	4.4%	1.9%
2003	7.6%	0.1%	-6.7%	-4.1%	0.7%	3.9%	1.3%	-2.9%	-1.4%	0.9%
Avg	1.2%	1.4%	1.8%	1.5%	1.4%	1.4%	1.6%	1.9%	1.6%	1.6%

Table 2.4 presents energy demand from a seasonal perspective. Note that the impact of weather correction is much larger than 1% for many of the seasons. The table also illustrates the growth in cooling load, while heating load has remained fairly static.

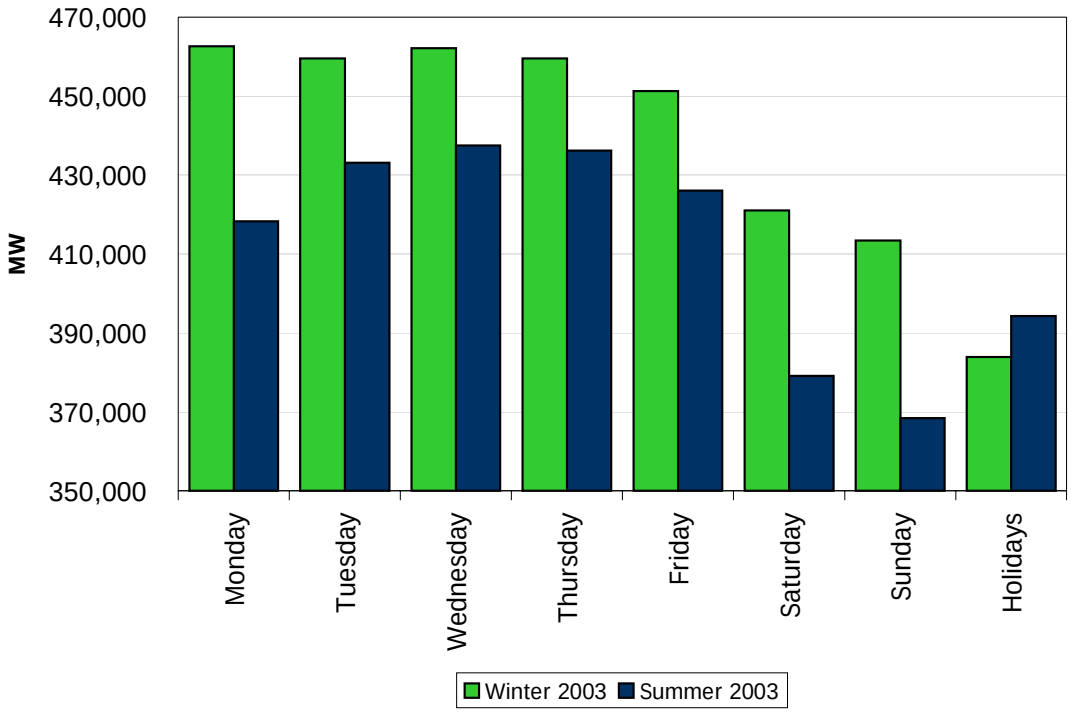
Of course, the impact of the weather correction on the individual seasons is a product of the severity of the weather for that season. For example, we know that the impact of the summer of 2002 would be quite large as both July and August were amongst the 10 Hottest months in Table 2.2. Therefore it is not surprising to see the weather-correction impact for the summer of 2002 at just under 3%.

2.13 Calendar Impacts on Energy Demand

The impact of the calendar on energy demand is inexorably tied to the other two classes of drivers. As seen in Table 2.4, energy demand varies by season, which can be both weather and calendar related. Likewise, energy demand varies by day, the product of calendar and economic activity. Since economic activity is lower on holidays and weekends, energy demand is lower as well.

Figure 2.1 shows the average daily energy demand for the winter and summer of 2002. The figure shows that energy demand is indeed lower on weekends and holidays than on weekdays. The seasonal difference in daily energy demand is a product of the winter of 2002 being mild and the summer of 2002 being hot. July 1st and the August civic holiday, were both extremely hot days in the summer of 2002 so the energy demand for the summer holidays in quite high in Figure 2.1. This reflects the reality that the system is much more heat, rather than cold, sensitive.

Figure 2.2: Average Daily Energy Demand - Summer and Winter of 2003

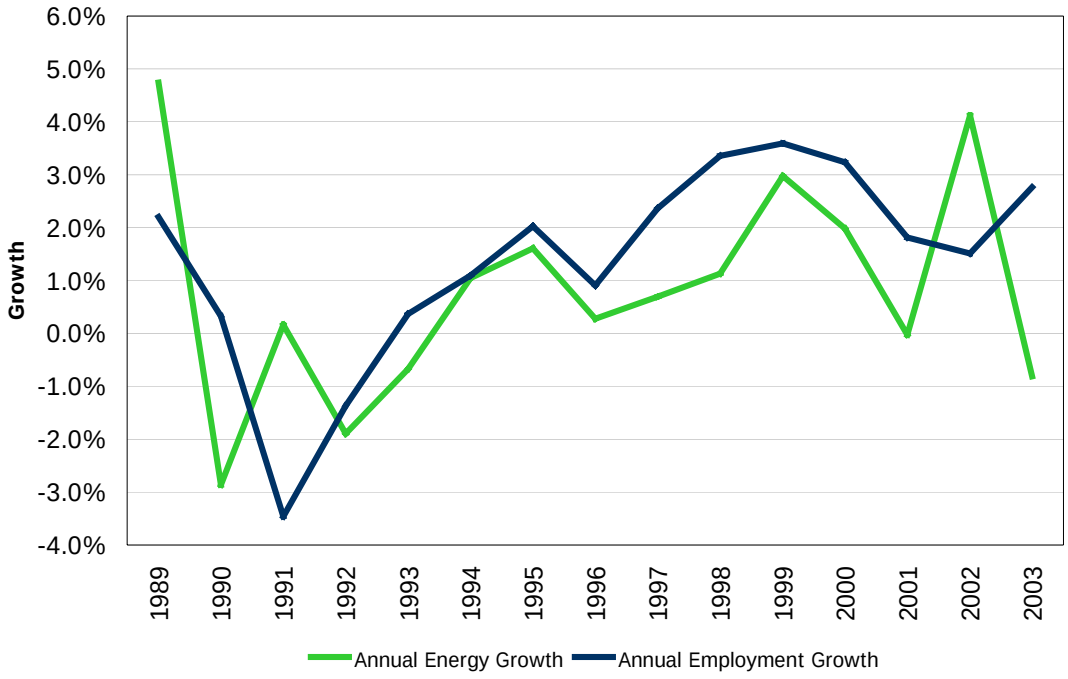


Notes to Figure 2.2: The summer numbers are adjusted for blackout impacts.

2.14 Economic Impacts on Energy Demand

In the previous section, the impacts of economic activity were evident in the weekly profiles of energy demand. On weekends and holidays when stores and factories are closed – or operate for shorter hours – energy demand is lower. This same concept can be applied to the longer-term economic cycle. Periods of economic growth and contraction have a significant impact on energy demand. Figure 2.2 shows the relationship between employment growth - a measure used in determination of economic growth - and the growth in annual energy demand. Over the long-term forecast horizon it is population and economic growth that will determine energy demand.

Figure 2.3: Annual Energy and Employment Growth



2.2 Historical Hourly Load Profiles

The three classes of drivers come together to influence the hourly load profiles. Weather has a number of impacts on the profiles. Hotter and colder temperatures will shift the load profiles up or down depending on the season. During the summer, the peak occurs late in the afternoon as air conditioners combat the build up of heat while economic activity has yet to slow down for the evening. The winter profile is heavily influenced by calendar impacts. The peak occurs late in the day and is primarily triggered by the setting of the sun and subsequent increase in demand due to lighting load. The fall and spring profiles are the flattest profiles. The fall profile shares some of the impacts of lighting load as the winter profile, but to a much subtler degree.

The profiles for weekends and holidays are similar to those for weekdays but lower and flatter. Similarly, economic activity generally shifts the profiles either up and down. Figure 2.5 shows the all-time peak load profiles for each season. The spring and fall the peaks can either be cold or hot weather peaks. The fall peak of September 9th, 2002 has a profile very similar to that of a

summer peak. In fact the temperature topped out at 33.5°C on that day. The profile for April 3rd, 2003 resembles more of a winter peak and was induced by a daily high of -1.8°C. Generally, peaks in October and April are induced by cold weather, while peaks in September and May are influenced by warm temperatures.

Figure 2.4: All Time Seasonal Peak Load Profiles

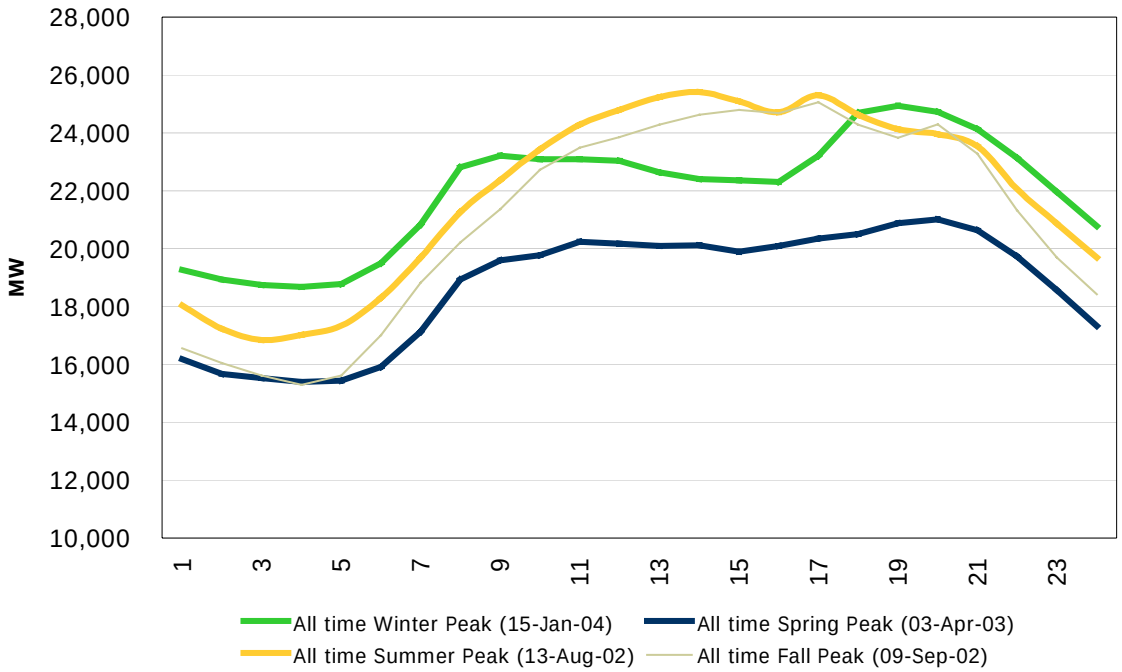


Figure 2.6 shows the winter load profiles for the all-time winter peak as well as for selected historical years. Likewise Figure 2.7 shows the summer load profiles for the all-time summer peak as well as for selected historical years.

Figure 2.5: Winter Load Profiles

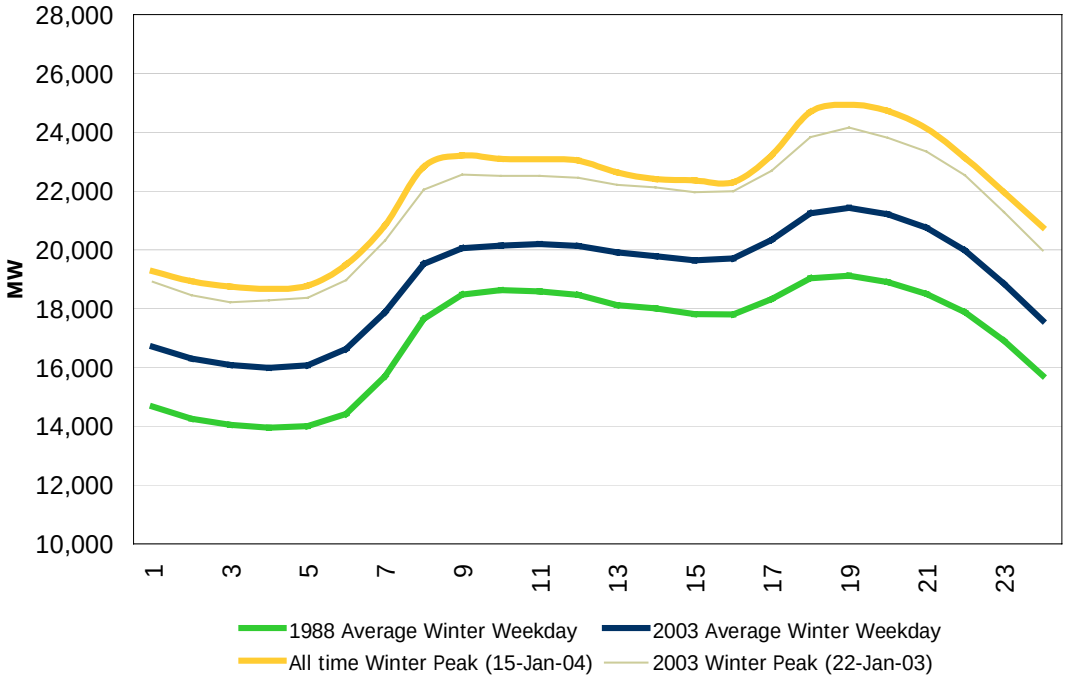
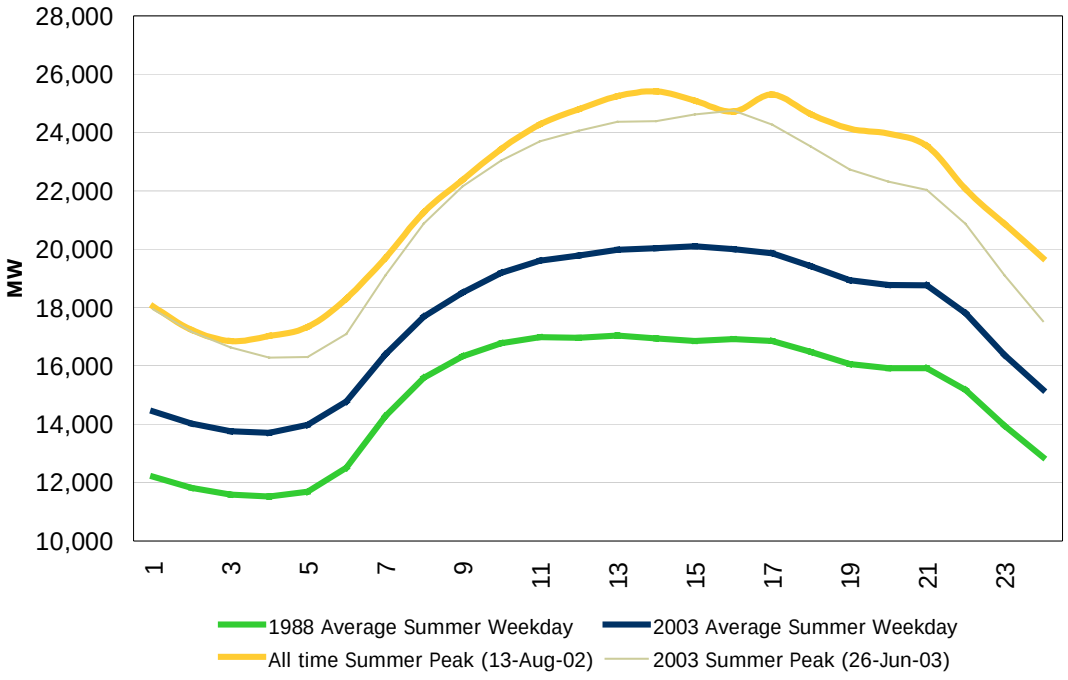


Figure 2.6: Summer Load Profiles



2.3 Historical Peak Demand

Historically, Ontario's electricity peak demand has occurred during the winter, usually in the months of December through February and between the hours of 5 p.m. to 7 p.m. In recent years – 1998, 1999, 2001, 2002 and 2003 - the system has peaked in the summer. The summer peaks of July and August occur late in the afternoon between 3 p.m. and 5 p.m. Peak demand is affected by the three classes of drivers but to varying degrees.

Weather variables, in conjunction with the calendar, have the largest impact on peak demand. Economic activity will push the peak demand up or down, but will have a minimal effect on the time or severity. Table 2.5 shows the actual and weather-corrected monthly peaks as well as the day of the week and the daytime high temperature for the peak day.

Table 2.5: Monthly Peak Demands

Month	Peak Date	Day of Week	Actual Peak (MW)	Weather Corrected Peak (MW)	Actual Peak Day Temperature (°C)	Normal Peak Day Temperature (°C)
Jan-00	Jan-17	Monday	23,301	22,606	-15.1	-10.8
Feb-00	Feb-02	Wednesday	21,759	22,074	-5.9	-10.6
Mar-00	Mar-02	Thursday	20,162	21,832	0.6	-8.6
Apr-00	Apr-11	Tuesday	19,265	18,873	1.3	5.8
May-00	May-08	Monday	20,313	19,228	26.1	11.0
Jun-00	Jun-26	Monday	21,851	22,223	27.9	28.5
Jul-00	Jul-31	Monday	21,616	21,871	26.5	28.3
Aug-00	Aug-31	Thursday	23,160	22,167	29.0	29.2
Sep-00	Sep-01	Friday	23,107	21,964	30.4	29.2
Oct-00	Oct-30	Monday	19,259	19,482	13.9	2.2
Nov-00	Nov-22	Wednesday	21,862	21,248	-2.2	-0.3
Dec-00	Dec-12	Tuesday	23,126	22,697	-8.6	-1.2
Jan-01	Jan-09	Tuesday	22,432	22,659	-4.9	-10.3
Feb-01	Feb-21	Wednesday	21,795	22,091	-8.3	-6.0
Mar-01	Mar-05	Monday	21,165	21,839	-2.5	-4.9
Apr-01	Apr-02	Monday	18,852	19,548	6.0	1.9
May-01	May-03	Thursday	19,144	19,652	30.4	9.7
Jun-01	Jun-27	Wednesday	23,550	22,199	30.9	28.5
Jul-01	Jul-24	Tuesday	23,966	22,471	31.8	29.8
Aug-01	Aug-08	Wednesday	25,239	22,394	37.2	26.6
Sep-01	Sep-07	Friday	21,238	20,737	29.0	26.1
Oct-01	Oct-31	Wednesday	19,591	20,104	8.8	2.2
Nov-01	Nov-29	Thursday	21,178	21,932	2.2	0.0
Dec-01	Dec-17	Monday	21,741	22,179	4.1	-4.7
Jan-02	Jan-14	Monday	22,191	22,822	0.7	-10.8
Feb-02	Feb-04	Monday	22,623	23,095	-10.0	-6.9
Mar-02	Mar-04	Monday	21,886	21,649	-6.8	-4.9
Apr-02	Apr-02	Tuesday	20,386	19,964	1.0	1.9
May-02	May-30	Thursday	20,068	19,376	27.9	22.5
Jun-02	Jun-26	Wednesday	23,578	23,069	30.7	28.5
Jul-02	Jul-03	Wednesday	25,226	23,963	34.7	31.4
Aug-02	Aug-13	Tuesday	25,414	23,379	33.4	29.6
Sep-02	Sep-09	Monday	25,062	22,249	33.5	29.6
Oct-02	Oct-01	Tuesday	21,216	19,599	28.8	7.2
Nov-02	Nov-28	Thursday	21,862	21,452	0.1	0.0
Dec-02	Dec-09	Monday	23,334	23,334	-1.2	-1.2
Jan-03	Jan-22	Wednesday	24,158	23,386	-13.4	-6.5
Feb-03	Feb-13	Thursday	23,469	23,431	-10.0	-6.7
Mar-03	Mar-03	Monday	23,117	21,524	-14.3	-4.9
Apr-03	Apr-03	Thursday	21,010	20,197	-1.8	1.9
May-03	May-05	Monday	18,741	19,778	13.1	11.0
Jun-03	Jun-26	Thursday	24,753	22,892	33.3	28.5
Jul-03	Jul-04	Friday	23,175	22,283	31.3	31.4
Aug-03	Aug-14	Thursday	23,891	23,236	31.0	29.6
Sep-03	Sep-11	Thursday	20,700	20,251	26.8	29.6
Oct-03	Oct-28	Tuesday	20,408	21,264	9.7	2.2
Nov-03	Nov-24	Monday	21,584	22,093	13.4	0.0
Dec-03	Dec-02	Tuesday	22,798	22,957	-5.6	-3.1
Jan-04	Jan-15	Thursday	24,937	24,608	-19.7	-10.8
Feb-04	Feb-04	Wednesday	22,608	22,884	-3.9	-6.9

2.31 Weather Impacts on Peak Demand

Weekly or monthly peak demands usually occur during episodes of severe weather conditions. Any peak is a combination of factors, both weather and non-weather. For instance, temperature and humidity are the main factors in terms of the summer peak. However, humidity is less of a factor in the winter than wind speed. As well, timing plays a big factor in determining the peak. Consecutive days of hot or cold weather will lead to a build-up so that the peak may occur the day after the hottest/coldest day. It is extremely unusual for a peak to occur on a weekend or holiday.

Figure 2.8 shows the 12-month moving average of actual and weather-corrected peak demand. The hot summer of 2002 and the cold winter of 2002-03 is evident in the separation of the two lines. As well, the very mild winter of 2001-02 sees the lines almost touch by the end of March 2002. However, for the most part, the actual peak is higher than the weather corrected peak. Since the Normal weather peak has a 50/50 chance of being exceeded on a weekly basis, it is not surprising that more months have actual peaks higher than the weather-corrected peaks. For the 50 months in Table 2.5, 29 or 58% of the months had actual peaks higher than the weather-corrected peak. Historically, the rate has been just below 62%.

Figure 2.7: Moving Average of Actual and Weather-Corrected Peak Demand

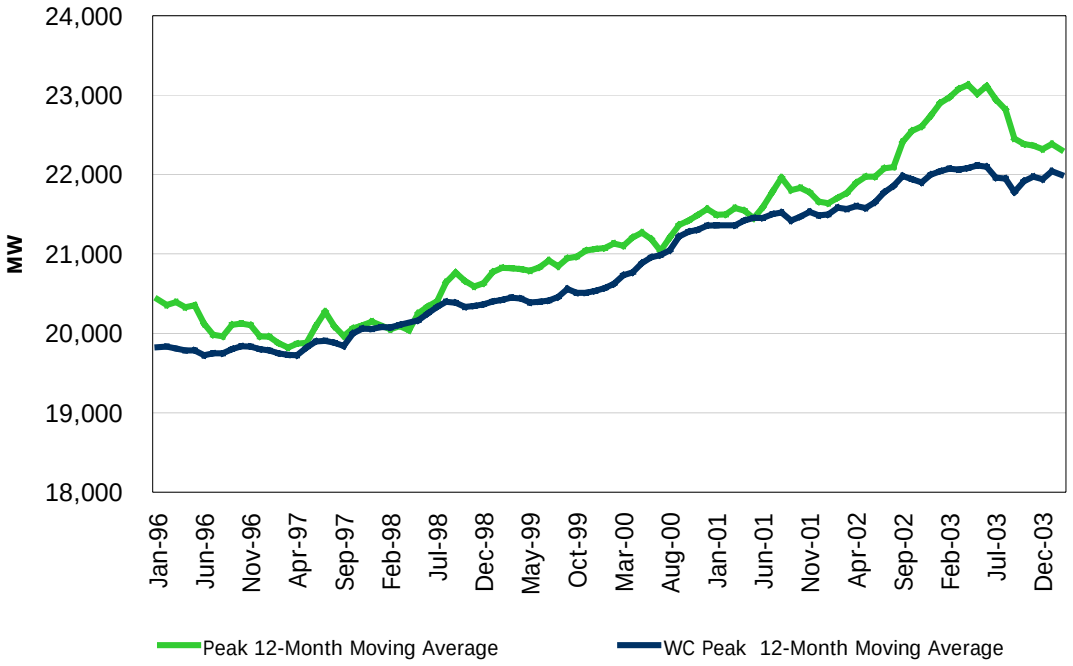


Table 2.6 contains the winter and summer days with the largest weather impact since 1970. Most of these severe weather days were days that led to weekly, monthly or seasonal peaks. Some of them do not since they occurred on holidays or weekends. Note that the summer all-time peak day weather is not on the list. The all-time winter peak day is (January 15th, 2004). As well, many of the days on the list are consecutive - August 7-9, 2001, July 1-3, 2002 and January 15-16 and 18-19, 1994.

Table 2.6: Weather Impact - Days

Rank	Hottest Days	Day of Week	Coldest Days	Day of Week
1	14-Jul-95	Fri	17-Jan-82	Sun
2	02-Jul-02	Tue	15-Jan-94	Sat
3	05-Jul-99	Mon	10-Jan-82	Sun
4	18-Jun-94	Sat	05-Feb-95	Sun
5	20-Jul-77	Wed	23-Jan-76	Fri
6	08-Jul-88	Fri	14-Jan-99	Thu
7	03-Jul-02	Wed	04-Jan-81	Sun
8	07-Aug-01	Tue	19-Jan-94	Wed
9	09-Aug-01	Thu	03-Jan-81	Sat
10	04-Jul-99	Sun	27-Jan-71	Wed
11	01-Aug-75	Fri	16-Jan-94	Sun
12	08-Aug-01	Wed	15-Jan-04	Thu
13	19-Jun-95	Mon	17-Jan-77	Mon
14	01-Jul-02	Mon	11-Jan-82	Mon
15	31-Jul-75	Thu	26-Jan-94	Wed
16	28-Aug-73	Tue	11-Jan-81	Sun
17	12-Jul-87	Sun	26-Dec-93	Sun
18	03-Aug-88	Wed	06-Feb-95	Mon
19	01-Aug-02	Thu	17-Feb-79	Sat
20	17-Jun-94	Fri	29-Jan-77	Sat
21	13-Aug-88	Sat	17-Jan-97	Fri
22	20-Jul-91	Sat	20-Jan-85	Sun
23	30-Jul-99	Fri	18-Jan-94	Tue
24	24-Jul-01	Tue	08-Feb-94	Tue
25	09-Jul-88	Sat	22-Dec-89	Fri

In order to more accurately assess the growth in peak demand the variances of weather need to be removed from the historical data. The peak values are corrected by adjusting demand for the difference between the actual weather and the Normal weather for that week.

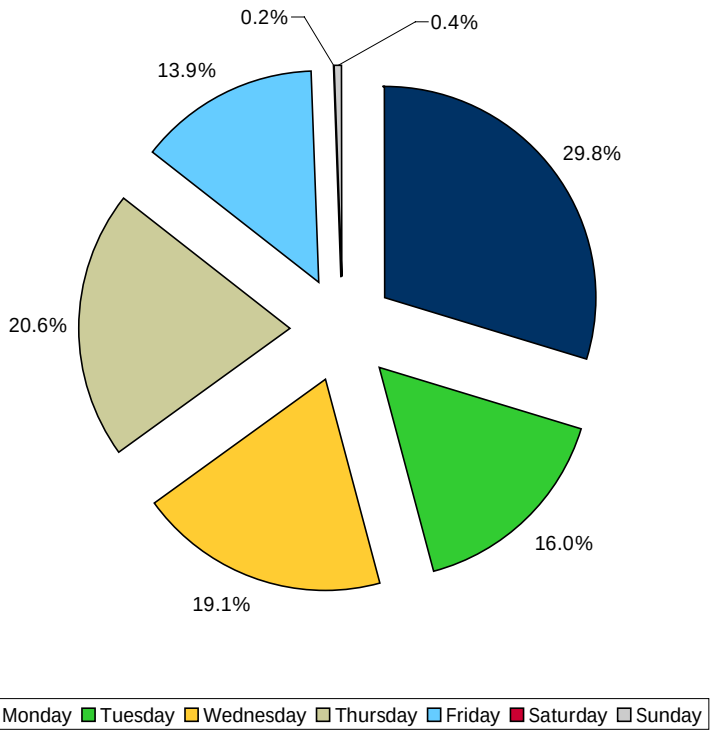
2.32 Calendar Impacts on Peak Demand

The calendar impacts on peak demand have been discussed in the previous section. The weather and calendar combine to influence peak demand. Tables 2.5 and 2.6 show that peak demands do not occur on weekends or holidays. Generally, the peak will fall on the day with the greatest weather impact unless that day is a holiday or on a weekend. As well, if severe weather is sustained over several days, the peak often comes after the day with the greatest weather impact due to a "soak in" effect.

Another key aspect of the calendar impacts can be seen in the hourly load profiles. Since sunrise and sunset times are dependent on the calendar, the winter peak is always tied to the time of day

where the lighting load starts to impact the system. In the summer, the lighting load comes too late in the day and other factors are at play to reduce demand. Figure 2.8 shows the distribution of peak days within the week. Most peak days are Mondays.

Figure 2.8: Weekly Peaks - Day of Week (1995 to Present)



2.33 Economic Impacts on Peak Demand

Economics factors play the smallest part in determining peak demand. Economic activity determines the underlying non-weather sensitive base load upon which peak demand builds, but adds little in determining the day on which peak demand will occur. It could be argued that economic activity ensures that peak demands will not occur overnight, which they do not. Generally continued economic growth will lead to higher peak demand, all other things being equal, but this will be more of a gradual trend than the variability attributable to either weather or calendar effects.

- End of Section -

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 weather, in the detail required to produce an hourly forecast of demand, is quite 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 average 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 average 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 long time horizon.

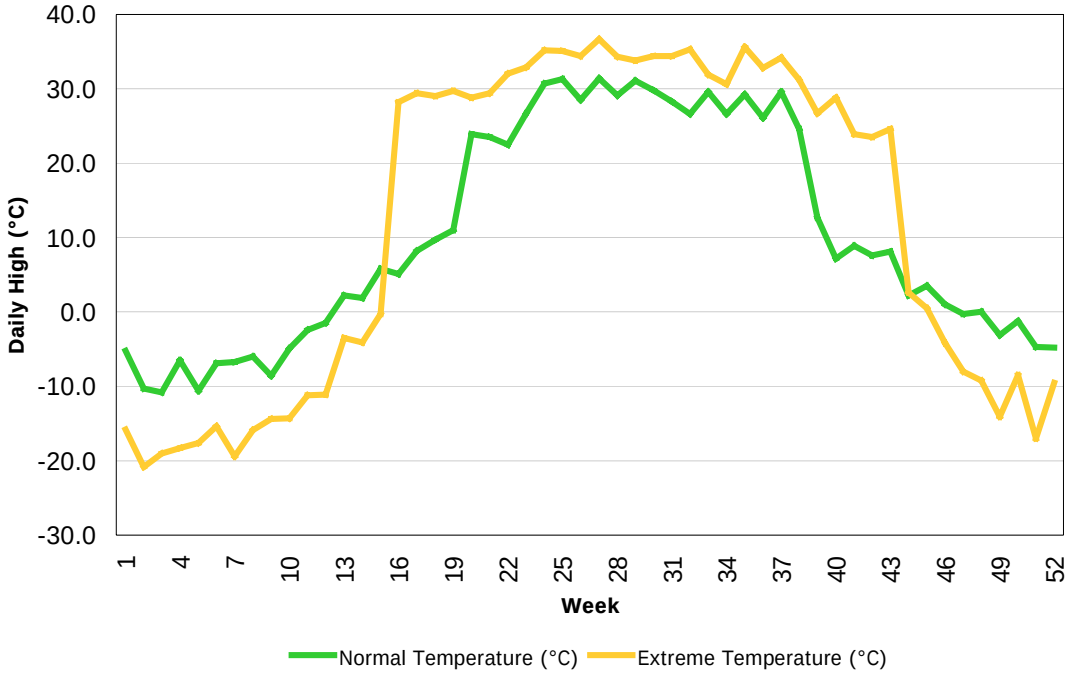
Table 3.1 shows the Normal and Extreme peak day temperature and humidex for each of the weeks. Although only temperature and humidex are shown in the table, the weather scenarios are based on the combined impact on electric demand of the four weather elements - temperature, humidity, cloud cover and wind speed. . Humidity is much less of a factor in the winter than the summer but is kept in the table for consistency. Those weeks that are highlighted are the weather scenarios that will give rise to the winter and summer peaks. The weather in the table is for Toronto. The weather scenarios are based on actual observed weather conditions since 1970. As such the profile is not necessarily smooth.

Figure 3.1 shows the weekly peak day temperatures for the Normal and Extreme weather scenarios.

Table 3.1: Normal and Extreme Weekly Peak Day Weather

Week	Normal Peak Date	Normal Temperature (°C)	Normal Humidex (°C)	Extreme Peak Date	Extreme Temperature (°C)	Extreme Humidex (°C)
1	02-Jan-78	-5.2	-25.2	10-Jan-82	-15.8	-46.8
2	13-Jan-00	-10.3	-36.6	17-Jan-82	-20.8	-56.7
3	20-Jan-78	-10.8	-35.6	19-Jan-94	-19.0	-55.9
4	27-Jan-88	-6.5	-31.1	23-Jan-76	-18.3	-50.9
5	30-Jan-76	-10.6	-36.5	05-Feb-95	-17.6	-51.0
6	11-Feb-88	-6.9	-27.1	06-Feb-95	-15.4	-47.7
7	12-Feb-92	-6.7	-31.2	17-Feb-79	-19.4	-56.3
8	19-Feb-79	-6.0	-29.6	25-Feb-90	-15.9	-48.1
9	01-Mar-88	-8.6	-34.2	29-Feb-80	-14.4	-48.1
10	07-Mar-78	-4.9	-28.6	03-Mar-03	-14.3	-52.5
11	12-Mar-01	-2.4	-21.8	10-Mar-03	-11.2	-41.1
12	24-Mar-90	-1.5	-20.5	20-Mar-86	-11.1	-39.2
13	29-Mar-78	2.2	-12.4	25-Mar-02	-3.5	-31.8
14	07-Apr-90	1.9	-14.9	31-Mar-87	-4.1	-20.3
15	12-Apr-91	5.8	-12.7	09-Apr-97	-0.3	-23.9
16	17-Apr-90	5.1	-8.3	17-Apr-02	28.2	34.7
17	24-Apr-95	8.2	-7.1	27-Apr-90	29.4	30.5
18	30-Apr-87	9.7	-3.6	07-May-00	29.0	34.1
19	09-May-77	11.0	-1.0	09-May-79	29.7	34.9
20	19-May-82	23.9	28.0	19-May-96	28.8	36.7
21	24-May-81	23.5	22.8	21-May-75	29.4	35.7
22	29-May-81	22.5	28.6	29-May-87	32.0	37.8
23	06-Jun-76	26.7	31.4	07-Jun-99	32.9	41.9
24	13-Jun-92	30.7	32.7	18-Jun-94	35.2	42.1
25	21-Jun-94	31.3	35.4	19-Jun-95	35.1	43.7
26	26-Jun-95	28.5	36.3	04-Jul-99	34.4	47.7
27	13-Jul-97	31.4	36.0	14-Jul-95	36.7	50.8
28	30-Jun-97	29.1	37.5	02-Jul-02	34.3	43.6
29	17-Jul-75	31.1	36.3	20-Jul-77	33.8	44.8
30	26-Jul-78	29.8	38.2	30-Jul-99	34.4	40.7
31	01-Aug-80	28.3	37.1	01-Aug-75	34.4	43.0
32	04-Aug-03	26.6	34.9	07-Aug-01	35.3	45.4
33	13-Aug-91	29.6	31.4	15-Aug-95	31.9	43.8
34	18-Aug-86	26.6	32.3	28-Aug-77	30.6	41.2
35	27-Aug-01	29.2	31.9	28-Aug-73	35.6	45.8
36	08-Sep-91	26.1	30.2	03-Sep-73	32.8	41.4
37	11-Sep-78	29.6	38.4	10-Sep-02	34.2	41.1
38	18-Sep-79	24.6	27.0	16-Sep-91	31.2	41.9
39	27-Sep-89	12.7	4.0	22-Sep-70	26.7	35.8
40	05-Oct-84	7.2	-5.9	01-Oct-02	28.8	36.0
41	08-Oct-74	8.9	-3.1	09-Oct-97	23.9	28.3
42	15-Oct-96	7.6	-2.9	21-Oct-79	23.5	29.4
43	25-Oct-87	8.1	-5.9	22-Oct-79	24.6	29.8
44	27-Oct-76	2.2	-13.7	07-Nov-93	2.6	-12.6
45	05-Nov-98	3.5	-10.9	12-Nov-95	0.5	-15.2
46	20-Nov-93	1.0	-14.0	13-Nov-86	-4.2	-25.3
47	22-Nov-81	-0.3	-15.5	21-Nov-87	-8.0	-32.1
48	25-Nov-75	0.0	-14.8	03-Dec-89	-9.2	-33.0
49	06-Dec-03	-3.1	-26.1	11-Dec-77	-14.1	-42.9
50	09-Dec-02	-1.2	-24.3	15-Dec-89	-8.5	-30.6
51	17-Dec-02	-4.7	-24.4	26-Dec-93	-17.0	-52.9
52	25-Dec-96	-4.8	-24.8	27-Dec-93	-9.5	-36.5

Figure 3.1: Weather Scenarios



3.2 Calendar Drivers for Forecast

Calendar variables are relatively static and are not addressed here. For a more detailed discussion the reader is encouraged to look at 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 near term part of the forecast (2004-2005). For the years beyond the consensus (2006-2014), population projections from Statistics Canada were used as a proxy for the economic driver variables.

Since this document looks at such a long time horizon, it is valuable to look at a number of scenarios. Therefore, three economic scenarios are generated. A Median Economic Growth scenario is based on the current economic outlook for the near term and a median population growth scenario thereafter. The Low Economic Growth scenario assumes a recession in 2004, a period of zero growth in 2005 and then utilizes a low population projection thereafter. The High Economic Growth scenario assumes strong economic growth in both 2004 and 2005. These are based on high-water marks from Ontario's history. For the period beyond 2005, the economic growth drivers are based on a high growth population projection. The population projections vary based on the level of immigration, net provincial migration and birth and death rates.

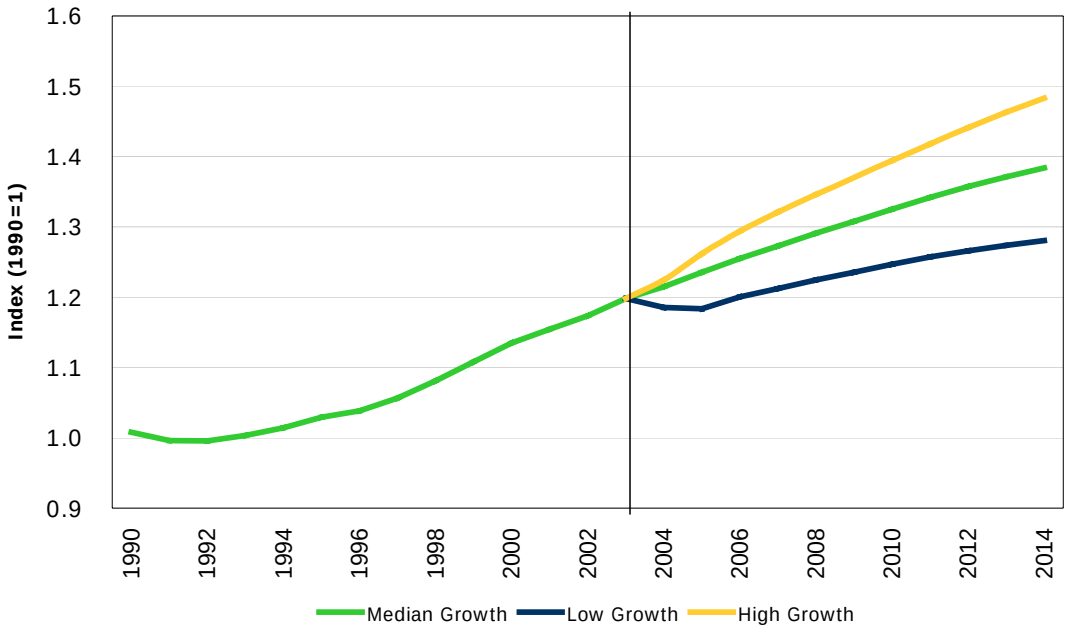
Table 3.2 shows the key economic drivers for the Median Economic Growth scenario. Figure 3.2 shows the relative levels of the three economic growth scenarios. The economic growth

scenarios - in conjunction with the weather scenarios - allows for the analysis of a variety of potential outcomes.

Table 3.2: Forecasted Ontario Economic Drivers

Year	Ontario Employment		Ontario Housing Starts	
	Thousands	Annual Growth (%)	Thousands	Annual Growth (%)
1995	5,129	2.0	31.9	-23.3
1996	5,176	0.9	39.5	23.9
1997	5,298	2.4	50.0	26.5
1998	5,476	3.4	50.1	0.2
1999	5,672	3.6	62.9	25.6
2000	5,856	3.2	67.4	7.1
2001	5,962	1.8	70.3	4.2
2002	6,052	1.5	79.6	13.3
2003	6,195	2.4	75.8	-4.8
2004 (f)	6,270	1.2	70.0	-7.7
2005 (f)	6,384	1.8	71.8	2.6
2006 (f)	6,477	1.5	75.2	4.8
2007 (f)	6,559	1.3	73.6	-2.2
2008 (f)	6,641	1.2	70.1	-4.7
2009 (f)	6,723	1.2	67.5	-3.7
2010 (f)	6,805	1.2	66.0	-2.2
2011 (f)	6,888	1.2	61.6	-6.6
2012 (f)	6,970	1.2	46.4	-24.7
2013 (f)	7,053	1.2	41.3	-11.0
2014 (f)	7,123	1.0	40.0	-3.1

Figure 3.2: Economic Scenarios



- End of Section -

4.0 Demand Forecast

The demand forecast is split into two separate parts, the energy demand forecast and the peak demand forecast. This section presents information on the system and more detailed information for the individual zones can be found in Appendices A and B. As well, more detailed information can be requested by sending an email to either the helpcentre@theIMO.com or forecasts.demand@theIMO.com

4.1 Energy Demand Forecast

The predicted annual system energy demand for the time frame 2003 through to 2014 is contained in Table 4.1. This table contains the forecast of energy demand under the three economic growth scenarios – Low, Median and High. Although 2004 does not fall within the time frame of this document, the values for 2004 are consistent with the 18-Month Outlook covering the period April 2004 to September 2005. Energy demand is expected to exhibit average annual growth of 0.9% throughout the forecast. Growth in demand is driven by changes in economic activity, the number of end-users and the penetration of electric powered devices. There were no explicit assumptions made regarding conservation. It was assumed that the rate of growth in conservation would follow the path set out historically with the change in end-use efficiency and with the changes in demand behaviour evident since the inception of the wholesale market.

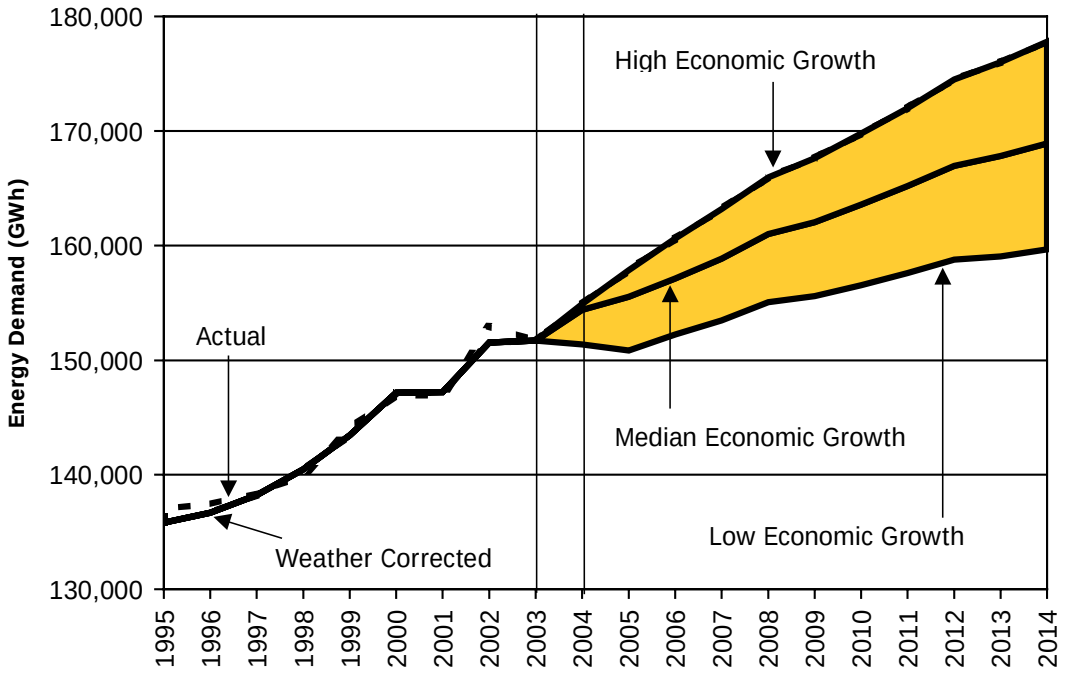
Table 4.1: Forecasted Ontario Annual Energy Demand

Calendar Year	Energy Demand - Median Growth	Energy Demand - Low Growth	Energy Demand - High Growth
	(TWh)	(TWh)	(TWh)
2003 (WC)	151.7	151.7	151.7
2004 (18)	155.1	151.4	155.9
2005	155.5	150.8	157.9
2006	157.1	152.2	160.6
2007	158.9	153.5	163.2
2008	161.0	155.1	166.0
2009	162.1	155.6	167.6
2010	163.6	156.5	169.8
2011	165.2	157.6	172.0
2012	167.0	158.8	174.5
2013	167.8	159.1	176.0
2014	168.9	159.7	177.8
Avg Growth	0.9%	0.6%	1.3%

Notes to Table 4.1:
2003 (WC) indicates that the annual energy demand has been weather-corrected and adjusted for the lost demand during and following the blackout.
2004 (18) indicates that these values are not in the time frame of this document but can be found in the 18-Month Outlook that covers the period April 2004 to September 2005.
Avg. Growth indicates the average annual growth rate for the 2005-2014 time frame.

Figure 4.1 shows the range of potential annual energy demand under the three economic growth scenarios. Since the different scenarios are based on different growth profiles, the range of annual demands expands through time.

Figure 4.1: Annual Energy Demand – Economic Scenarios



4.2 Peak Demand Forecast

The key message of the peak demand forecast is the difference between the growth of the winter and summer peaks. The summer peaks are growing faster than the winter peaks as cooling load continues to grow while the heating load remains stagnant.

Table 4.2 shows the forecast of seasonal peak demands. The table shows the winter and summer peaks under both Normal and Extreme weather. Under Normal weather, the system is winter peaking in 2004, just about even in 2005 and summer peaking thereafter. Under the Extreme weather scenario the system is summer peaking throughout the forecast. The winter peaks for 2004 in Table 4.2 are actuals and weather-corrected actuals. They were included since January 2004 produced an all-time winter peak demand of 24,937 MW.

Table 4.2: Forecasted Ontario Seasonal Peak Demand

Year	Normal Weather Winter Peak Demand	Normal Weather Summer Peak Demand	Extreme Weather Winter Peak Demand	Extreme Weather Summer Peak Demand
	(MW)	(MW)	(MW)	(MW)
2003 (WC)	*23,431*	*23,164*	*24,158*	*24,753*
2004 (18)	*24,608*	23,668	*24,937*	26,355
2005	24,153	24,147	26,122	26,923
2006	24,339	24,446	26,308	27,233
2007	24,518	24,735	26,486	27,527
2008	24,720	25,027	26,688	27,808
2009	24,933	25,305	26,901	28,062
2010	25,011	25,605	26,980	28,302
2011	25,182	25,883	27,151	28,660
2012	25,340	26,139	27,309	28,922
2013	25,503	26,384	27,472	29,161
2014	25,637	26,611	27,605	29,369
Avg Growth (2005-14)	0.7%	1.1%	0.6%	1.0%

Notes to Table 4.2:
Shaded and Italics indicate actual peak demands.
2003 (WC) data are weather-corrected peak values (Normal) and actual peak values (Extreme).
2004 (18) indicates that these values are not in the time frame of this document but can be found in the 18-Month Outlook that covers the period April 2004 to September 2005.
Avg. Growth indicates the average annual growth rate for the 2005-14

Figure 4.2 shows the annual peak demands under three weather scenarios. The Mild weather scenario is derived from the mildest historical data. The Normal weather peak demand forecast is roughly in the center of the band and the Extreme weather scenario constitutes the upper bound of the graph.

Figures 4.3 depicts the summer and winter peaks for the Normal weather scenario. Figure 4.4 shows the Extreme weather scenario seasonal peaks. As in Table 4.2, the winter peak for 2004 is a weather-corrected actual (Normal) or actual peak demand (Extreme). The figures reflect the fact that the system is much more heat-sensitive than cold sensitive. For the Normal weather scenario, the system becomes summer peaking in 2006 whereas under the Extreme weather scenario the system is summer peaking immediately.

The resource adequacy assessments take into consideration the full range of possible weather conditions on a probabilistic basis. Results are presented assuming Normal weather as a base. Allowance for the probability of demand being higher than those assumed in the base case is made in the calculation of the required reserve level. This assessment is based on the assumption that between 0 MW and 300 MW of demand is price responsive.

Figure 4.2: Annual Peak Demand – Weather Scenarios

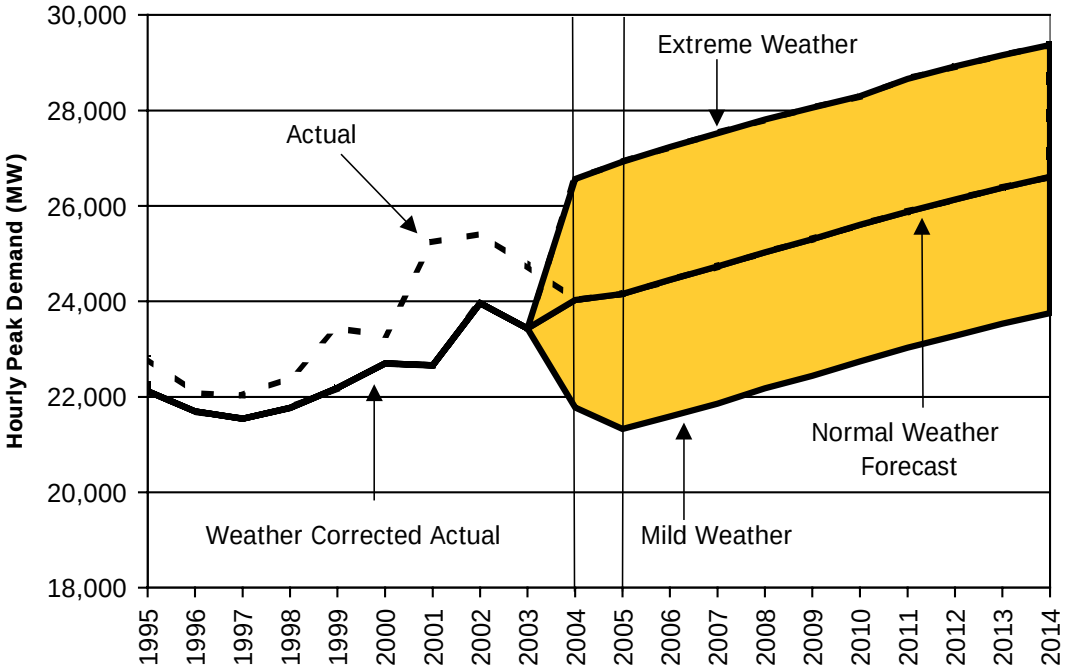


Figure 4.3: Seasonal Peak Demand – Normal Weather Scenario

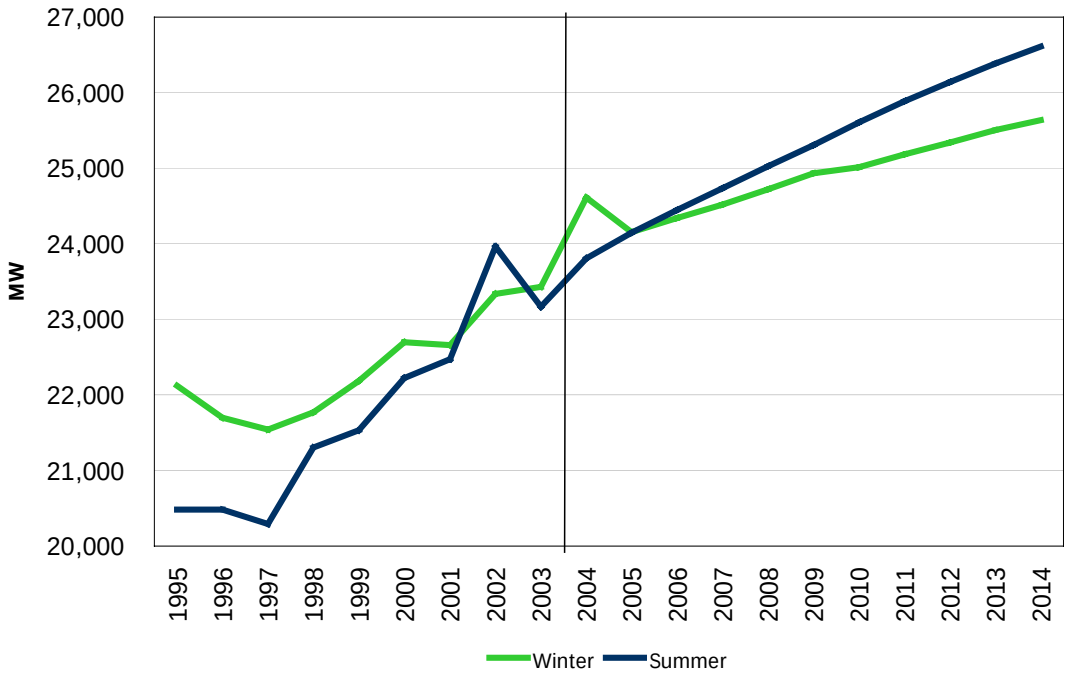
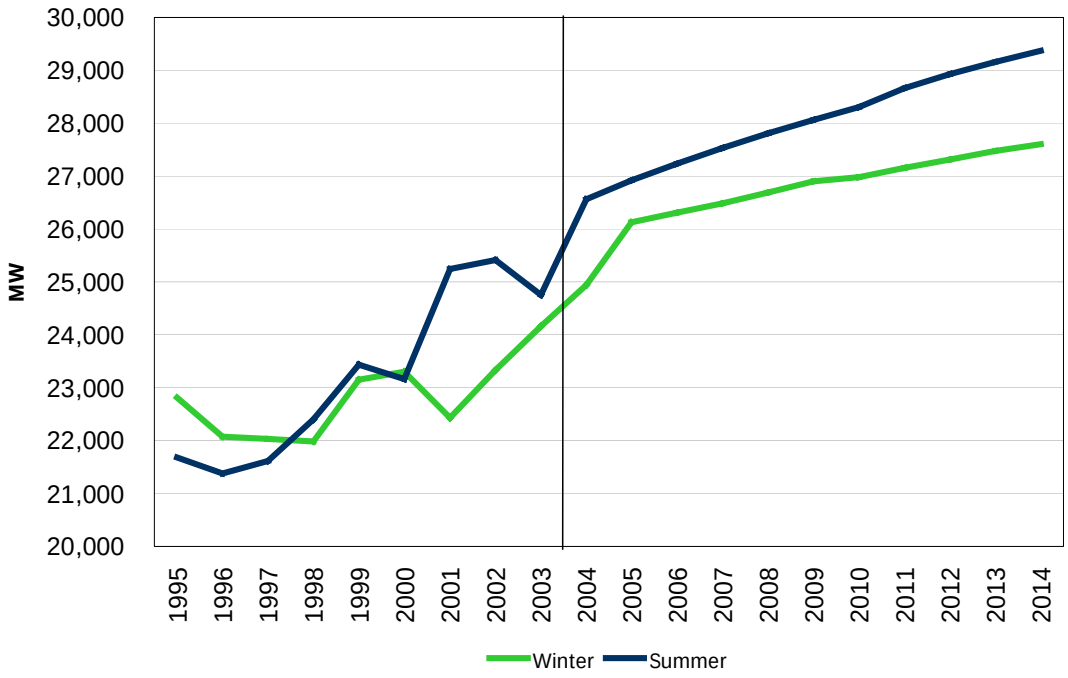


Figure 4.5: Seasonal Peak Demand – Extreme Weather Scenario



4.3 Comparison of Current Forecast to Previous 10-Year Forecast

This 10-Year forecast can be compared to the previous one published March 31, 2003, covering the period of January 2004 to December 2013. The greatest impact on the difference in forecasts has been the weaker economic outlook at this time. As well, the system continues to exhibit increased heat sensitivity through increase space cooling penetration and growth.

With respect to the forecasting methodology, the previous forecast and the current one are basically the same. The models have been updated to reflect the most recently available demand, weather and economic data at the time of production.

The economic outlook has deteriorated as compared to the last 10-Year forecast. The war on terrorism and subsequent invasion of Iraq has had a significant impact on the United States' budget deficits and the ensuing fall in the value of the U.S. dollar. In 2003, the Canadian dollar appreciated by 20% against the U.S. currency, undermining the competitive position of Ontario exporters. Some of the commodity based industries have been somewhat shielded from the dollar impact as their commodities values - in U.S. dollars - appreciated sufficiently to blunt the exchange rate impact. Recent economic data has been mixed, making predictions for the economy difficult for 2004 and beyond. The same holds for our largest trading partner, as the U.S. economy appears to surge ahead only to be brought down by the budget deficits and lack of job growth. On the plus side, inflation remains in check and therefore interest rates remain low. A higher dollar allows for further rate cuts and economic stimulation. This forecast calls for modest economic expansion throughout the forecast, however the base upon which that growth is predicated is fragile.

The economic outlook has therefore meant that total energy demand is lower than expected in the previous 10-Year forecast. The forecast of energy demand is 0.8 TWh higher in 2004 and falls to 0.8 TWh lower in 2013.

With an eroded energy demand base, peak demands will also be lower than in the previous forecast. Additionally, the increase in price sensitive demand, conservation and load shifting as experienced since the opening of the wholesale market, has further influenced the energy demand profile. Some of the peak demands are lower by over 400 MW. Table 4.3 shows some of the differences between the current and previous forecast.

Table 4.3: Current Versus Previous Forecast

Year	Annual Energy Demand	Normal Weather Winter Peak Demand	Normal Weather Summer Peak Demand	Extreme Weather Winter Peak Demand	Extreme Weather Summer Peak Demand
	(TWh)	(MW)	(MW)	(MW)	(MW)
2004	155.1	*24,608*	23,668	*24,937*	26,355
Difference (Current - Previous)	0.8	496	-346	-941	-355
2007	158.9	24,518	24,735	26,486	27,527
Difference (Current - Previous)	-0.5	-85	-271	118	-229
2010	163.6	25,011	25,605	26,980	28,302
Difference (Current - Previous)	-0.7	-90	-340	114	-281
2013	167.8	25,503	26,384	27,472	29,161
Difference (Current - Previous)	-0.8	-91	-419	112	-374

- End of Section -

Appendix A - Energy Demand Forecast Details

Table A1: Monthly Zonal Energy Forecast, Normal Weather

	Monthly Energy (GWh)										
Month	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	Total System
Jan-05	746	1,095	1,043	908	1,030	4,567	565	38	2,688	1,559	14,240
Feb-05	668	969	928	815	910	4,137	513	37	2,436	1,407	12,820
Mar-05	708	1,016	956	873	942	4,353	557	39	2,576	1,497	13,518
Apr-05	651	910	811	709	821	3,953	503	30	2,324	1,379	12,091
May-05	640	868	801	708	793	3,934	501	27	2,323	1,385	11,981
Jun-05	616	786	757	633	892	4,313	532	30	2,470	1,503	12,533
Jul-05	613	802	802	674	973	4,705	567	29	2,619	1,638	13,422
Aug-05	635	843	802	677	992	4,754	583	30	2,613	1,714	13,643
Sep-05	609	866	725	577	863	4,122	508	32	2,339	1,460	12,101
Oct-05	665	953	803	655	900	4,156	515	31	2,388	1,432	12,497
Nov-05	674	975	886	767	904	4,206	533	39	2,450	1,462	12,897
Dec-05	708	1,039	1,002	886	980	4,452	545	40	2,617	1,525	13,794
Jan-06	746	1,091	1,055	923	1,034	4,621	570	39	2,717	1,582	14,378
Feb-06	669	966	935	823	911	4,173	518	38	2,456	1,426	12,914
Mar-06	710	1,011	962	884	943	4,398	564	39	2,601	1,520	13,632
Apr-06	653	908	814	705	821	3,971	503	30	2,331	1,390	12,126
May-06	643	865	812	722	805	4,029	509	27	2,369	1,420	12,201
Jun-06	618	787	762	636	900	4,371	537	31	2,492	1,530	12,664
Jul-06	615	799	812	682	988	4,800	575	29	2,661	1,673	13,633
Aug-06	637	841	809	681	1,004	4,839	591	30	2,649	1,746	13,828
Sep-06	613	866	730	580	865	4,149	510	32	2,354	1,473	12,171
Oct-06	668	951	813	666	911	4,244	521	31	2,430	1,462	12,697
Nov-06	677	971	896	779	908	4,258	538	39	2,479	1,484	13,030
Dec-06	709	1,038	1,009	889	980	4,477	549	40	2,631	1,540	13,861
Jan-07	750	1,092	1,072	945	1,046	4,705	579	39	2,765	1,617	14,611
Feb-07	670	962	941	831	911	4,204	523	38	2,476	1,445	13,003
Mar-07	710	1,007	963	884	938	4,400	566	40	2,605	1,533	13,645
Apr-07	656	903	822	712	827	4,037	509	30	2,366	1,419	12,281
May-07	645	863	819	727	812	4,091	515	27	2,399	1,449	12,347
Jun-07	620	784	768	637	911	4,441	544	30	2,527	1,558	12,819
Jul-07	617	799	825	692	1,003	4,903	584	30	2,706	1,716	13,876
Aug-07	640	838	813	683	1,012	4,898	597	30	2,677	1,774	13,962
Sep-07	615	867	738	583	867	4,176	512	32	2,371	1,488	12,248
Oct-07	671	949	822	677	921	4,330	529	32	2,472	1,496	12,898
Nov-07	679	970	905	788	910	4,294	543	39	2,501	1,506	13,134
Dec-07	713	1,039	1,024	903	988	4,543	557	41	2,672	1,572	14,053
Jan-08	752	1,088	1,083	957	1,050	4,753	585	40	2,794	1,643	14,744
Feb-08	695	991	981	869	944	4,385	547	40	2,584	1,518	13,553
Mar-08	708	999	961	881	928	4,371	566	40	2,598	1,539	13,590
Apr-08	653	898	831	737	834	4,118	518	29	2,413	1,450	12,483
May-08	647	860	822	726	814	4,122	517	28	2,415	1,467	12,416
Jun-08	621	777	777	642	924	4,526	553	31	2,571	1,593	13,013
Jul-08	620	793	841	708	1,027	5,055	600	29	2,773	1,773	14,218
Aug-08	641	838	808	670	1,010	4,888	597	30	2,676	1,782	13,940
Sep-08	619	862	749	598	880	4,262	519	32	2,418	1,519	12,457
Oct-08	675	948	831	684	927	4,394	534	32	2,503	1,524	13,053
Nov-08	682	972	912	790	909	4,296	546	40	2,509	1,520	13,175
Dec-08	717	1,038	1,049	934	1,005	4,660	569	41	2,739	1,616	14,367
Jan-09	754	1,087	1,085	958	1,047	4,756	588	40	2,798	1,656	14,768
Feb-09	672	954	954	847	912	4,264	532	39	2,515	1,483	13,172
Mar-09	711	996	974	899	936	4,450	576	41	2,643	1,571	13,797
Apr-09	656	895	833	735	835	4,149	520	29	2,426	1,466	12,546
May-09	649	859	827	728	817	4,156	520	28	2,433	1,484	12,499
Jun-09	623	777	789	654	943	4,651	565	31	2,622	1,643	13,297
Jul-09	622	790	845	710	1,035	5,117	606	30	2,806	1,796	14,356
Aug-09	643	832	813	673	1,019	4,955	603	30	2,706	1,809	14,082
Sep-09	622	862	760	611	883	4,313	524	32	2,447	1,541	12,595
Oct-09	677	946	830	680	930	4,428	537	32	2,518	1,542	13,119
Nov-09	684	971	926	807	917	4,365	554	40	2,548	1,549	13,362
Dec-09	718	1,037	1,057	946	1,009	4,691	573	42	2,758	1,635	14,464

Table A1 – continued

	Monthly Energy (GWh)										
Month	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	Total System
Jan-10	752	1,081	1,082	955	1,036	4,746	590	41	2,796	1,664	14,742
Feb-10	677	959	971	864	924	4,328	539	39	2,552	1,509	13,361
Mar-10	718	1,005	1,004	931	959	4,578	588	41	2,713	1,615	14,151
Apr-10	663	902	851	749	850	4,230	527	30	2,468	1,496	12,765
May-10	653	859	839	741	817	4,190	523	28	2,457	1,498	12,605
Jun-10	626	774	791	654	946	4,680	568	31	2,639	1,653	13,361
Jul-10	623	788	842	704	1,037	5,133	608	29	2,814	1,808	14,386
Aug-10	645	830	832	691	1,044	5,101	616	30	2,771	1,861	14,422
Sep-10	620	853	764	611	897	4,427	534	32	2,493	1,591	12,823
Oct-10	677	942	842	692	929	4,434	539	32	2,533	1,553	13,173
Nov-10	682	960	926	814	913	4,391	559	41	2,566	1,568	13,421
Dec-10	714	1,023	1,047	941	992	4,658	573	42	2,742	1,637	14,369
Jan-11	757	1,080	1,098	972	1,046	4,812	598	41	2,838	1,693	14,934
Feb-11	677	955	977	872	924	4,357	544	40	2,571	1,527	13,445
Mar-11	719	1,001	1,011	941	960	4,613	593	42	2,734	1,636	14,249
Apr-11	665	899	853	747	851	4,256	529	30	2,481	1,512	12,823
May-11	655	854	848	752	826	4,268	530	28	2,497	1,529	12,786
Jun-11	628	772	799	659	958	4,761	576	31	2,675	1,685	13,543
Jul-11	624	786	845	701	1,042	5,171	612	29	2,831	1,828	14,470
Aug-11	647	827	845	703	1,061	5,221	628	31	2,825	1,905	14,693
Sep-11	623	851	768	616	898	4,451	536	32	2,509	1,603	12,887
Oct-11	680	940	848	696	936	4,491	543	32	2,562	1,577	13,306
Nov-11	685	960	938	828	919	4,443	566	41	2,596	1,593	13,568
Dec-11	718	1,023	1,057	950	996	4,696	579	42	2,768	1,658	14,487
Jan-12	756	1,076	1,108	986	1,049	4,855	603	41	2,864	1,715	15,054
Feb-12	703	986	1,020	914	959	4,552	569	42	2,686	1,603	14,033
Mar-12	717	993	1,005	937	948	4,585	594	42	2,724	1,640	14,186
Apr-12	667	891	859	749	851	4,289	532	30	2,501	1,531	12,899
May-12	656	850	856	761	838	4,356	538	28	2,538	1,565	12,986
Jun-12	629	769	801	657	964	4,800	580	31	2,696	1,703	13,629
Jul-12	626	786	858	713	1,060	5,277	621	30	2,874	1,875	14,719
Aug-12	650	827	847	702	1,069	5,273	634	31	2,849	1,931	14,812
Sep-12	627	854	769	610	896	4,436	534	32	2,505	1,602	12,865
Oct-12	683	938	861	714	948	4,594	552	32	2,614	1,614	13,549
Nov-12	687	956	947	838	920	4,474	570	41	2,617	1,610	13,661
Dec-12	721	1,026	1,068	955	1,000	4,726	585	43	2,789	1,679	14,591
Jan-13	760	1,076	1,125	1,008	1,061	4,935	612	42	2,909	1,746	15,273
Feb-13	678	947	986	885	921	4,398	552	41	2,601	1,559	13,567
Mar-13	717	989	1,004	931	939	4,559	594	42	2,715	1,643	14,133
Apr-13	665	890	864	769	861	4,367	540	30	2,545	1,558	13,087
May-13	658	847	860	765	843	4,398	541	28	2,561	1,585	13,086
Jun-13	630	769	805	655	972	4,842	584	31	2,711	1,728	13,727
Jul-13	628	779	872	726	1,079	5,407	635	30	2,940	1,916	15,013
Aug-13	650	822	846	697	1,071	5,291	636	31	2,858	1,944	14,845
Sep-13	628	850	780	624	900	4,485	539	32	2,538	1,624	13,000
Oct-13	685	935	863	714	954	4,644	556	32	2,636	1,635	13,657
Nov-13	689	959	952	841	920	4,482	574	42	2,626	1,624	13,708
Dec-13	721	1,022	1,079	970	1,004	4,773	590	43	2,820	1,700	14,722
Jan-14	757	1,071	1,125	1,011	1,056	4,922	612	42	2,906	1,750	15,251
Feb-14	679	943	991	892	921	4,415	556	41	2,614	1,571	13,623
Mar-14	718	985	1,012	942	942	4,595	600	43	2,740	1,663	14,239
Apr-14	666	887	867	769	861	4,385	541	30	2,553	1,570	13,128
May-14	659	845	862	764	844	4,416	543	28	2,571	1,596	13,129
Jun-14	631	766	813	663	986	4,932	594	31	2,752	1,763	13,931
Jul-14	629	777	878	729	1,090	5,476	642	30	2,969	1,943	15,163
Aug-14	651	820	845	691	1,074	5,307	638	31	2,865	1,954	14,876
Sep-14	630	848	788	636	907	4,543	544	32	2,570	1,646	13,145
Oct-14	687	933	866	716	958	4,682	560	33	2,655	1,652	13,742
Nov-14	690	958	957	844	918	4,486	576	42	2,633	1,633	13,737
Dec-14	725	1,022	1,096	992	1,015	4,856	599	44	2,868	1,731	14,948

- End of Section -.

Appendix B - Peak Demand Forecast Details

Table B1: Monthly Zonal Coincident Peak Demand Forecast, Normal Weather

	Hourly Coincident Peak Demand (MW)											
Month	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	Total System	Load Forecast Uncertainty
Jan-05	1,064	1,559	1,853	1,885	1,802	7,860	905	63	4,580	2,582	24,153	917
Feb-05	1,042	1,544	1,841	1,845	1,781	7,777	899	62	4,535	2,531	23,857	708
Mar-05	1,028	1,471	1,670	1,720	1,647	7,463	871	64	4,319	2,445	22,698	851
Apr-05	968	1,379	1,398	1,311	1,467	6,788	814	50	3,906	2,288	20,369	567
May-05	860	1,223	1,310	1,225	1,375	6,869	812	42	3,756	2,377	19,849	1,509
Jun-05	887	1,137	1,450	1,369	1,645	8,334	972	54	4,613	2,867	23,328	1,523
Jul-05	855	1,135	1,496	1,454	1,748	8,713	1,005	51	4,682	3,008	24,147	1,424
Aug-05	882	1,163	1,462	1,427	1,753	8,601	999	52	4,549	3,061	23,949	1,316
Sep-05	851	1,260	1,374	1,280	1,545	7,863	911	53	4,182	2,753	22,072	1,389
Oct-05	930	1,360	1,473	1,422	1,501	6,904	809	49	3,983	2,291	20,722	442
Nov-05	1,008	1,463	1,704	1,706	1,685	7,587	898	67	4,437	2,532	23,087	643
Dec-05	1,049	1,526	1,844	1,873	1,782	7,873	918	64	4,618	2,609	24,156	969
Jan-06	1,067	1,551	1,869	1,901	1,807	7,933	914	63	4,619	2,615	24,339	917
Feb-06	1,045	1,538	1,859	1,864	1,785	7,847	908	64	4,575	2,564	24,049	708
Mar-06	1,031	1,465	1,685	1,735	1,653	7,544	879	66	4,364	2,477	22,899	851
Apr-06	973	1,371	1,407	1,314	1,481	6,893	820	49	3,952	2,325	20,585	567
May-06	859	1,230	1,366	1,266	1,405	7,200	835	45	3,875	2,472	20,553	1,511
Jun-06	891	1,133	1,467	1,375	1,661	8,464	983	56	4,673	2,928	23,631	1,527
Jul-06	858	1,130	1,516	1,459	1,765	8,854	1,018	49	4,746	3,051	24,446	1,429
Aug-06	884	1,155	1,479	1,435	1,769	8,735	1,010	49	4,607	3,112	24,235	1,316
Sep-06	852	1,259	1,395	1,294	1,550	7,954	917	54	4,227	2,791	22,293	1,389
Oct-06	956	1,341	1,409	1,305	1,519	7,256	807	53	4,063	2,374	21,083	407
Nov-06	1,010	1,454	1,717	1,717	1,687	7,652	906	68	4,475	2,563	23,249	643
Dec-06	1,052	1,517	1,860	1,887	1,787	7,948	926	65	4,657	2,642	24,341	969
Jan-07	1,069	1,544	1,886	1,917	1,810	7,998	922	63	4,658	2,651	24,518	917
Feb-07	1,042	1,511	1,854	1,846	1,760	7,873	914	66	4,589	2,585	24,040	778
Mar-07	1,020	1,438	1,693	1,750	1,639	7,541	883	64	4,378	2,499	22,905	822
Apr-07	977	1,364	1,413	1,315	1,495	6,990	826	48	3,998	2,363	20,789	567
May-07	862	1,232	1,384	1,275	1,412	7,282	841	44	3,916	2,518	20,766	1,511
Jun-07	895	1,141	1,486	1,379	1,692	8,596	997	54	4,707	2,987	23,934	1,517
Jul-07	858	1,122	1,533	1,461	1,779	8,971	1,029	51	4,830	3,101	24,735	1,437
Aug-07	886	1,149	1,496	1,444	1,782	8,857	1,021	49	4,666	3,166	24,516	1,316
Sep-07	853	1,257	1,418	1,310	1,553	8,036	923	54	4,270	2,829	22,503	1,389
Oct-07	963	1,343	1,423	1,331	1,549	7,424	825	52	4,137	2,439	21,486	426
Nov-07	1,012	1,448	1,734	1,731	1,692	7,720	915	67	4,501	2,599	23,419	643
Dec-07	1,054	1,510	1,877	1,902	1,791	8,016	934	66	4,708	2,675	24,533	969
Jan-08	1,072	1,535	1,909	1,940	1,816	8,068	931	63	4,698	2,688	24,720	917
Feb-08	1,043	1,502	1,873	1,865	1,764	7,934	923	66	4,629	2,623	24,222	778
Mar-08	1,023	1,431	1,708	1,764	1,644	7,613	892	66	4,418	2,536	23,095	822
Apr-08	928	1,338	1,418	1,397	1,485	7,070	820	41	4,042	2,347	20,886	567
May-08	867	1,228	1,402	1,287	1,421	7,370	847	43	3,962	2,546	20,973	1,511
Jun-08	897	1,137	1,504	1,384	1,708	8,720	1,009	55	4,766	3,042	24,222	1,520
Jul-08	861	1,118	1,554	1,465	1,796	9,101	1,042	52	4,892	3,146	25,027	1,424
Aug-08	888	1,139	1,512	1,451	1,796	8,978	1,032	50	4,722	3,218	24,786	1,316
Sep-08	855	1,254	1,442	1,326	1,556	8,116	930	52	4,314	2,865	22,710	1,389
Oct-08	963	1,331	1,441	1,344	1,556	7,504	832	52	4,183	2,476	21,682	426
Nov-08	1,014	1,437	1,747	1,741	1,692	7,771	923	69	4,535	2,632	23,561	643
Dec-08	1,057	1,507	1,905	1,931	1,797	8,079	944	67	4,727	2,719	24,733	940
Jan-09	1,075	1,528	1,931	1,962	1,824	8,149	941	65	4,736	2,722	24,933	917
Feb-09	1,044	1,497	1,889	1,886	1,768	8,001	932	67	4,668	2,657	24,409	778
Mar-09	1,027	1,426	1,726	1,781	1,650	7,696	901	68	4,463	2,569	23,307	822
Apr-09	938	1,319	1,430	1,409	1,490	7,167	824	41	4,093	2,387	21,098	567
May-09	870	1,228	1,417	1,299	1,429	7,456	853	44	4,005	2,582	21,183	1,511
Jun-09	901	1,142	1,522	1,385	1,738	8,848	1,022	54	4,798	3,108	24,518	1,507
Jul-09	860	1,115	1,570	1,472	1,797	9,226	1,052	54	4,976	3,183	25,305	1,434
Aug-09	888	1,129	1,527	1,459	1,810	9,101	1,042	48	4,778	3,267	25,049	1,316
Sep-09	855	1,253	1,466	1,348	1,553	8,190	936	53	4,359	2,896	22,909	1,389
Oct-09	962	1,322	1,460	1,362	1,558	7,574	837	53	4,228	2,508	21,864	426
Nov-09	1,016	1,430	1,756	1,748	1,694	7,831	930	69	4,556	2,663	23,693	643
Dec-09	1,059	1,499	1,922	1,949	1,801	8,145	953	68	4,774	2,752	24,922	928

Table B1 - continued

	Hourly Coincident Peak Demand (MW)											
Month	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	Total System	Load Forecast Uncertainty
Jan-10	1,072	1,521	1,937	1,965	1,818	8,173	947	65	4,768	2,745	25,011	917
Feb-10	1,050	1,505	1,924	1,922	1,796	8,087	941	67	4,720	2,692	24,704	708
Mar-10	1,032	1,433	1,744	1,800	1,660	7,785	911	68	4,508	2,604	23,545	851
Apr-10	978	1,345	1,472	1,360	1,504	7,230	847	49	4,135	2,462	21,382	567
May-10	875	1,216	1,397	1,269	1,414	7,302	840	43	3,953	2,550	20,859	1,509
Jun-10	900	1,120	1,532	1,398	1,726	8,967	1,040	56	4,911	3,131	24,781	1,523
Jul-10	869	1,116	1,582	1,486	1,832	9,366	1,066	50	4,958	3,280	25,605	1,431
Aug-10	895	1,149	1,546	1,455	1,837	9,246	1,060	50	4,849	3,333	25,420	1,316
Sep-10	857	1,262	1,520	1,401	1,595	8,410	959	54	4,455	2,991	23,504	1,295
Oct-10	943	1,323	1,561	1,488	1,540	7,347	841	50	4,212	2,471	21,776	442
Nov-10	1,023	1,414	1,762	1,752	1,692	7,883	936	69	4,575	2,684	23,790	628
Dec-10	1,057	1,487	1,926	1,953	1,796	8,178	959	67	4,807	2,773	25,003	969
Jan-11	1,074	1,514	1,954	1,983	1,821	8,233	955	66	4,804	2,778	25,182	917
Feb-11	1,052	1,499	1,942	1,943	1,800	8,148	949	67	4,758	2,725	24,883	708
Mar-11	1,035	1,427	1,760	1,816	1,663	7,851	919	68	4,546	2,635	23,720	851
Apr-11	982	1,337	1,480	1,364	1,515	7,318	853	51	4,175	2,497	21,572	567
May-11	878	1,213	1,412	1,280	1,422	7,384	845	44	3,992	2,585	21,055	1,509
Jun-11	903	1,117	1,548	1,403	1,742	9,091	1,043	58	4,970	3,183	25,058	1,523
Jul-11	870	1,114	1,595	1,489	1,846	9,475	1,077	51	5,039	3,327	25,883	1,424
Aug-11	897	1,142	1,561	1,462	1,851	9,365	1,070	51	4,905	3,383	25,687	1,316
Sep-11	866	1,248	1,476	1,333	1,593	8,387	945	55	4,420	2,967	23,290	1,389
Oct-11	946	1,314	1,568	1,488	1,550	7,421	847	49	4,249	2,502	21,934	442
Nov-11	1,018	1,417	1,805	1,803	1,704	7,957	949	71	4,663	2,728	24,115	643
Dec-11	1,059	1,480	1,945	1,971	1,801	8,243	968	68	4,843	2,805	25,183	969
Jan-12	1,076	1,506	1,969	1,998	1,824	8,290	963	67	4,838	2,809	25,340	917
Feb-12	1,054	1,493	1,959	1,961	1,803	8,202	957	67	4,793	2,756	25,045	708
Mar-12	1,024	1,400	1,765	1,830	1,647	7,835	923	68	4,559	2,653	23,704	822
Apr-12	986	1,329	1,487	1,366	1,526	7,403	858	52	4,215	2,532	21,754	567
May-12	876	1,219	1,466	1,318	1,450	7,696	867	47	4,104	2,677	21,720	1,511
Jun-12	906	1,113	1,562	1,407	1,756	9,201	1,054	57	5,023	3,241	25,320	1,526
Jul-12	871	1,108	1,612	1,492	1,861	9,594	1,088	51	5,096	3,366	26,139	1,430
Aug-12	898	1,133	1,574	1,467	1,865	9,476	1,080	51	4,955	3,429	25,928	1,316
Sep-12	873	1,215	1,500	1,369	1,628	8,404	947	55	4,467	3,004	23,462	1,389
Oct-12	976	1,304	1,493	1,376	1,591	7,841	855	54	4,348	2,611	22,449	426
Nov-12	1,019	1,408	1,815	1,812	1,703	7,994	955	71	4,691	2,754	24,222	643
Dec-12	1,060	1,471	1,958	1,982	1,802	8,288	975	72	4,872	2,832	25,312	969
Jan-13	1,079	1,498	1,987	2,018	1,829	8,344	971	67	4,871	2,839	25,503	917
Feb-13	1,064	1,478	1,898	1,954	1,754	8,229	952	69	4,819	2,784	25,001	778
Mar-13	1,028	1,395	1,778	1,841	1,654	7,899	931	68	4,593	2,683	23,870	822
Apr-13	939	1,304	1,480	1,439	1,521	7,475	850	42	4,251	2,509	21,810	567
May-13	880	1,219	1,480	1,328	1,456	7,763	873	45	4,143	2,706	21,893	1,511
Jun-13	908	1,121	1,578	1,409	1,786	9,313	1,066	55	5,047	3,293	25,576	1,519
Jul-13	871	1,101	1,628	1,490	1,874	9,697	1,099	52	5,174	3,398	26,384	1,425
Aug-13	898	1,122	1,586	1,475	1,875	9,574	1,089	49	5,002	3,472	26,142	1,316
Sep-13	867	1,243	1,519	1,366	1,591	8,510	955	54	4,496	3,028	23,629	1,389
Oct-13	975	1,294	1,511	1,392	1,591	7,893	860	54	4,385	2,637	22,592	426
Nov-13	1,021	1,401	1,823	1,817	1,703	8,034	962	71	4,703	2,780	24,315	643
Dec-13	1,062	1,462	1,972	1,994	1,805	8,335	983	72	4,913	2,858	25,456	969
Jan-14	1,081	1,492	2,002	2,034	1,832	8,389	978	69	4,897	2,863	25,637	917
Feb-14	1,064	1,474	1,909	1,967	1,756	8,270	959	70	4,845	2,808	25,122	778
Mar-14	1,029	1,391	1,790	1,854	1,655	7,942	938	69	4,621	2,706	23,995	822
Apr-14	944	1,293	1,490	1,447	1,526	7,540	853	43	4,287	2,536	21,959	567
May-14	888	1,182	1,497	1,359	1,488	7,782	875	47	4,184	2,737	22,039	1,511
Jun-14	910	1,118	1,591	1,409	1,798	9,409	1,076	55	5,094	3,346	25,806	1,516
Jul-14	870	1,094	1,638	1,492	1,886	9,786	1,108	54	5,246	3,437	26,611	1,428
Aug-14	899	1,116	1,598	1,479	1,887	9,671	1,098	50	5,048	3,513	26,359	1,316
Sep-14	867	1,242	1,537	1,380	1,591	8,566	960	53	4,527	3,051	23,774	1,389
Oct-14	974	1,287	1,524	1,403	1,595	7,948	864	52	4,418	2,662	22,727	426
Nov-14	1,022	1,395	1,834	1,827	1,705	8,076	969	73	4,716	2,803	24,420	643
Dec-14	1,064	1,463	1,993	2,021	1,808	8,375	991	71	4,918	2,890	25,594	935

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

	Hourly Non-Coincident Peak Demand (MW)											
Month	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	System	Zonal Total
Jan-05	1,078	1,695	1,897	1,885	1,822	7,860	905	63	4,580	2,583	24,153	24,368
Feb-05	1,064	1,593	1,841	1,845	1,781	7,777	899	66	4,535	2,531	23,857	23,932
Mar-05	1,040	1,533	1,698	1,720	1,668	7,463	875	66	4,319	2,445	22,698	22,827
Apr-05	988	1,438	1,420	1,330	1,467	6,854	821	54	3,906	2,288	20,369	20,566
May-05	943	1,323	1,345	1,306	1,405	6,869	812	63	3,758	2,377	19,849	20,201
Jun-05	909	1,257	1,454	1,382	1,664	8,373	980	55	4,614	2,867	23,328	23,555
Jul-05	890	1,215	1,511	1,475	1,756	8,733	1,009	54	4,753	3,097	24,147	24,493
Aug-05	920	1,303	1,462	1,440	1,759	8,629	1,009	53	4,549	3,073	23,949	24,197
Sep-05	942	1,366	1,380	1,302	1,581	7,863	911	54	4,183	2,753	22,072	22,335
Oct-05	957	1,437	1,473	1,422	1,507	7,006	811	55	3,983	2,300	20,722	20,951
Nov-05	1,021	1,541	1,758	1,706	1,694	7,587	898	66	4,437	2,532	23,087	23,240
Dec-05	1,058	1,622	1,894	1,873	1,792	7,873	918	68	4,618	2,609	24,156	24,325
Jan-06	1,081	1,689	1,916	1,901	1,825	7,933	914	63	4,619	2,615	24,339	24,556
Feb-06	1,066	1,593	1,859	1,864	1,785	7,847	908	67	4,575	2,564	24,049	24,128
Mar-06	1,043	1,535	1,717	1,736	1,674	7,544	884	67	4,364	2,477	22,899	23,041
Apr-06	994	1,436	1,428	1,339	1,481	6,944	827	55	3,952	2,325	20,585	20,781
May-06	949	1,323	1,372	1,316	1,435	7,200	835	63	3,878	2,472	20,553	20,843
Jun-06	922	1,303	1,474	1,386	1,680	8,501	992	69	4,677	2,928	23,631	23,932
Jul-06	893	1,211	1,529	1,483	1,772	8,872	1,021	55	4,818	3,148	24,446	24,802
Aug-06	929	1,293	1,479	1,448	1,773	8,759	1,021	53	4,607	3,124	24,235	24,486
Sep-06	946	1,365	1,401	1,316	1,585	7,954	917	55	4,237	2,791	22,293	22,567
Oct-06	961	1,429	1,483	1,425	1,541	7,256	818	55	4,063	2,374	21,083	21,405
Nov-06	1,024	1,535	1,771	1,717	1,694	7,652	906	67	4,475	2,563	23,249	23,404
Dec-06	1,061	1,628	1,910	1,887	1,794	7,948	926	68	4,657	2,642	24,341	24,521
Jan-07	1,084	1,683	1,934	1,917	1,827	7,998	922	65	4,658	2,651	24,518	24,739
Feb-07	1,064	1,585	1,854	1,856	1,760	7,873	914	67	4,591	2,593	24,040	24,157
Mar-07	1,037	1,515	1,708	1,750	1,658	7,541	884	68	4,378	2,499	22,905	23,038
Apr-07	1,000	1,435	1,441	1,348	1,495	7,024	832	55	3,998	2,363	20,789	20,991
May-07	954	1,320	1,390	1,324	1,441	7,282	841	63	3,921	2,518	20,766	21,054
Jun-07	921	1,259	1,490	1,392	1,695	8,626	1,003	55	4,734	2,987	23,934	24,162
Jul-07	896	1,266	1,549	1,486	1,787	8,994	1,031	69	4,877	3,201	24,735	25,156
Aug-07	931	1,286	1,496	1,455	1,788	8,877	1,033	53	4,666	3,177	24,516	24,762
Sep-07	950	1,364	1,424	1,332	1,588	8,036	923	55	4,293	2,829	22,503	22,794
Oct-07	968	1,422	1,493	1,426	1,565	7,424	825	56	4,137	2,439	21,486	21,755
Nov-07	1,026	1,530	1,787	1,731	1,696	7,720	915	67	4,501	2,599	23,419	23,572
Dec-07	1,064	1,621	1,926	1,902	1,796	8,016	934	68	4,708	2,675	24,533	24,710
Jan-08	1,087	1,674	1,958	1,940	1,831	8,068	931	65	4,698	2,688	24,720	24,940
Feb-08	1,066	1,581	1,873	1,873	1,764	7,934	923	69	4,633	2,630	24,222	24,346
Mar-08	1,038	1,516	1,728	1,764	1,663	7,613	893	67	4,418	2,536	23,095	23,236
Apr-08	987	1,424	1,456	1,397	1,485	7,070	839	54	4,042	2,370	20,886	21,124
May-08	954	1,315	1,408	1,307	1,450	7,370	848	63	3,967	2,546	20,973	21,228
Jun-08	927	1,261	1,510	1,395	1,711	8,748	1,015	56	4,794	3,042	24,222	24,459
Jul-08	897	1,205	1,565	1,490	1,803	9,117	1,043	56	4,960	3,255	25,027	25,391
Aug-08	934	1,310	1,513	1,451	1,802	8,995	1,045	53	4,722	3,230	24,786	25,055
Sep-08	954	1,360	1,448	1,348	1,590	8,116	930	55	4,350	2,865	22,710	23,016
Oct-08	975	1,411	1,509	1,431	1,569	7,504	832	56	4,183	2,476	21,682	21,946
Nov-08	1,030	1,547	1,800	1,741	1,696	7,771	923	68	4,535	2,632	23,561	23,743
Dec-08	1,068	1,612	1,956	1,931	1,803	8,079	944	69	4,745	2,719	24,733	24,926
Jan-09	1,091	1,669	1,978	1,962	1,836	8,149	941	65	4,736	2,722	24,933	25,149
Feb-09	1,067	1,571	1,889	1,890	1,768	8,001	932	69	4,672	2,664	24,409	24,523
Mar-09	1,042	1,517	1,752	1,781	1,669	7,696	903	68	4,463	2,569	23,307	23,460
Apr-09	995	1,415	1,471	1,409	1,491	7,167	846	54	4,093	2,410	21,098	21,351
May-09	959	1,310	1,424	1,319	1,457	7,456	856	63	4,012	2,582	21,183	21,438
Jun-09	932	1,242	1,524	1,400	1,738	8,870	1,025	56	4,849	3,108	24,518	24,744
Jul-09	905	1,204	1,582	1,492	1,820	9,243	1,057	57	5,016	3,285	25,305	25,661
Aug-09	937	1,299	1,528	1,459	1,816	9,113	1,053	52	4,778	3,276	25,049	25,311
Sep-09	957	1,359	1,474	1,369	1,587	8,190	936	55	4,408	2,898	22,909	23,233
Oct-09	974	1,446	1,525	1,418	1,568	7,574	838	56	4,228	2,508	21,864	22,135
Nov-09	1,032	1,539	1,808	1,748	1,696	7,831	930	68	4,556	2,663	23,693	23,871
Dec-09	1,070	1,592	1,972	1,949	1,805	8,145	953	70	4,793	2,752	24,922	25,101

Table B2 - continued

	Hourly Non-Coincident Peak Demand (MW)											
Month	Northwest	Northeast	East	Essa	Ottawa	Toronto	Niagara	Bruce	Southwest	West	System	Zonal Total
Jan-10	1,089	1,665	1,978	1,965	1,827	8,173	947	66	4,768	2,745	25,011	25,223
Feb-10	1,074	1,593	1,924	1,927	1,797	8,087	941	70	4,727	2,699	24,704	24,839
Mar-10	1,047	1,537	1,774	1,800	1,678	7,785	913	70	4,508	2,604	23,545	23,716
Apr-10	1,006	1,430	1,496	1,396	1,504	7,231	854	55	4,135	2,462	21,382	21,569
May-10	966	1,317	1,421	1,357	1,441	7,302	847	65	3,989	2,550	20,859	21,255
Jun-10	941	1,247	1,537	1,411	1,745	8,994	1,042	56	4,917	3,131	24,781	25,021
Jul-10	906	1,207	1,594	1,504	1,840	9,374	1,066	54	5,030	3,368	25,605	25,943
Aug-10	938	1,297	1,546	1,469	1,843	9,262	1,066	52	4,849	3,346	25,420	25,668
Sep-10	955	1,351	1,528	1,423	1,629	8,410	959	56	4,511	2,993	23,504	23,815
Oct-10	972	1,415	1,561	1,488	1,544	7,347	846	52	4,212	2,471	21,776	21,908
Nov-10	1,031	1,513	1,833	1,755	1,692	7,883	936	68	4,575	2,684	23,790	23,970
Dec-10	1,068	1,593	1,977	1,953	1,798	8,178	959	71	4,807	2,773	25,003	25,177
Jan-11	1,091	1,658	1,998	1,983	1,830	8,233	955	66	4,804	2,778	25,182	25,396
Feb-11	1,076	1,592	1,942	1,945	1,800	8,149	949	70	4,766	2,732	24,883	25,021
Mar-11	1,050	1,537	1,792	1,816	1,681	7,851	921	71	4,546	2,635	23,720	23,900
Apr-11	1,011	1,427	1,503	1,393	1,515	7,318	860	55	4,175	2,497	21,572	21,754
May-11	972	1,310	1,435	1,361	1,449	7,384	853	65	4,033	2,586	21,055	21,448
Jun-11	945	1,250	1,553	1,416	1,761	9,116	1,047	56	4,971	3,183	25,058	25,298
Jul-11	908	1,207	1,610	1,510	1,854	9,481	1,077	55	5,111	3,417	25,883	26,230
Aug-11	940	1,293	1,561	1,475	1,857	9,378	1,076	54	4,905	3,395	25,687	25,934
Sep-11	972	1,348	1,482	1,357	1,625	8,387	948	56	4,500	2,970	23,290	23,645
Oct-11	976	1,406	1,568	1,488	1,552	7,527	852	56	4,249	2,512	21,934	22,186
Nov-11	1,034	1,506	1,859	1,803	1,704	7,957	949	70	4,663	2,728	24,115	24,273
Dec-11	1,071	1,585	1,996	1,971	1,801	8,243	968	71	4,843	2,805	25,183	25,354
Jan-12	1,093	1,652	2,015	1,998	1,832	8,290	963	67	4,838	2,809	25,340	25,557
Feb-12	1,078	1,591	1,959	1,962	1,803	8,208	957	71	4,803	2,764	25,045	25,196
Mar-12	1,048	1,517	1,781	1,830	1,664	7,835	923	71	4,559	2,653	23,704	23,881
Apr-12	1,017	1,424	1,509	1,402	1,526	7,403	865	56	4,215	2,532	21,754	21,949
May-12	970	1,309	1,472	1,367	1,476	7,696	875	65	4,126	2,677	21,720	22,033
Jun-12	949	1,252	1,570	1,419	1,776	9,223	1,058	56	5,027	3,241	25,320	25,571
Jul-12	909	1,247	1,626	1,516	1,868	9,598	1,088	70	5,169	3,465	26,139	26,556
Aug-12	948	1,288	1,575	1,481	1,869	9,484	1,088	53	4,955	3,442	25,928	26,183
Sep-12	974	1,348	1,500	1,369	1,628	8,454	956	56	4,550	3,004	23,462	23,839
Oct-12	984	1,400	1,575	1,488	1,601	7,842	858	58	4,348	2,611	22,449	22,765
Nov-12	1,035	1,498	1,869	1,812	1,703	7,994	955	71	4,691	2,754	24,222	24,382
Dec-12	1,073	1,591	2,007	1,982	1,802	8,288	975	72	4,872	2,832	25,312	25,494
Jan-13	1,096	1,645	2,036	2,018	1,835	8,344	971	68	4,871	2,839	25,503	25,723
Feb-13	1,078	1,571	1,949	1,954	1,775	8,229	962	72	4,819	2,784	25,001	25,193
Mar-13	1,053	1,518	1,801	1,841	1,671	7,899	931	72	4,593	2,683	23,870	24,062
Apr-13	1,005	1,430	1,519	1,439	1,521	7,475	869	54	4,251	2,532	21,810	22,095
May-13	974	1,303	1,486	1,372	1,482	7,763	882	65	4,177	2,709	21,893	22,213
Jun-13	952	1,262	1,585	1,420	1,789	9,329	1,069	56	5,075	3,293	25,576	25,830
Jul-13	910	1,196	1,641	1,515	1,881	9,700	1,099	57	5,243	3,508	26,384	26,750
Aug-13	948	1,306	1,587	1,475	1,881	9,578	1,100	53	5,002	3,484	26,142	26,414
Sep-13	975	1,346	1,526	1,390	1,623	8,510	964	56	4,598	3,033	23,629	24,021
Oct-13	985	1,401	1,584	1,480	1,599	7,893	863	57	4,385	2,637	22,592	22,884
Nov-13	1,038	1,517	1,875	1,817	1,703	8,034	962	71	4,703	2,780	24,315	24,500
Dec-13	1,074	1,582	2,020	1,994	1,805	8,335	983	72	4,913	2,858	25,456	25,636
Jan-14	1,098	1,639	2,050	2,034	1,836	8,389	978	69	4,897	2,863	25,637	25,853
Feb-14	1,077	1,570	1,961	1,967	1,776	8,270	969	73	4,845	2,808	25,122	25,316
Mar-14	1,048	1,518	1,815	1,854	1,671	7,942	938	72	4,621	2,706	23,995	24,185
Apr-14	1,010	1,426	1,528	1,447	1,526	7,540	876	55	4,287	2,561	21,959	22,256
May-14	977	1,296	1,497	1,359	1,488	7,822	887	64	4,219	2,737	22,039	22,346
Jun-14	956	1,258	1,595	1,422	1,802	9,423	1,079	56	5,121	3,346	25,806	26,058
Jul-14	911	1,193	1,653	1,516	1,895	9,788	1,108	57	5,289	3,540	26,611	26,950
Aug-14	949	1,300	1,599	1,479	1,893	9,672	1,108	53	5,048	3,524	26,359	26,625
Sep-14	976	1,343	1,544	1,403	1,623	8,566	970	56	4,639	3,057	23,774	24,177
Oct-14	987	1,402	1,596	1,478	1,601	7,948	868	57	4,418	2,662	22,727	23,017
Nov-14	1,040	1,509	1,886	1,827	1,705	8,076	969	71	4,716	2,804	24,420	24,603
Dec-14	1,078	1,575	2,043	2,021	1,808	8,375	991	73	4,952	2,890	25,594	25,806

- 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		
	> 16º C	1ºC Increase	6,780 MWh Increase
	10ºC > and < 16º C	1ºC Increase	430 MWh Increase
	< 10ºC	1ºC Decrease	2,590 MWh Increase
	Daily Avg Humidity - Dewpoint		
	> 16º C	1ºC Increase	2,470 MWh Increase
	10ºC > and < 16º C	1ºC Increase	160 MWh Increase
	< 10ºC	1ºC 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		
	> 16º C	1ºC Increase	380 MW Increase
	10ºC > and < 16º C	1ºC Increase	50 MW Increase
	< 10ºC	1ºC Decrease	110 MW Increase
	Humidity - Dewpoint		
	> 16º C	1ºC Increase	140 MW Increase
	10ºC > and < 16º C	1ºC Increase	20 MW Increase
	< 10ºC	1ºC 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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