18-MONTH OUTLOOK

From June 2009 to December 2010

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Ontario Demand Forecast

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Executive Summary

The IESO is responsible for forecasting electricity demand on the IESO-controlled grid and for assessing whether transmission and generation facilities are adequate to meet Ontario's needs. This document presents the demand forecast for the period from June 2009 to December 2010 and supersedes the previous forecast released in March 2009.

Economic Outlook

The dominant issue underlying the demand forecast is the economy. The U.S. economy declined by 6.1% in the first quarter of 2009 and the impacts were felt within Ontario's energy intense export industries. Not surprisingly, consumption by wholesale industrial customers shrunk by 18.9% in the first quarter compared to a year ago. Going forward, there are a number of issues that will determine demand growth throughout the forecast.

- Recession - The biggest question surrounds the depth and length of the current recession. Expectations are for the trough to occur later in 2009 with recovery coming in the fourth quarter of 2010. However, the recovery to pre-recession GDP levels will not be matched by a recovery in electricity demand.
- Recovery – Manufacturing sales have shown some life recently, growing by 2.2% in February after six consecutive months of decreases. As well, manufacturing inventories have declined by 2.1% since October. This means that as sales increase, manufacturers will increase production rather than draw down accumulated inventories. Lastly, both unfilled and new orders increased last month (February) for the first time since the fall. While not an indication that the trough has been reached, these are encouraging signs.
- Changing Economy – The economy is undergoing both cyclical and structural change. The current recession is a typical economic cycle that will result in a contraction followed by a period of expansion. However, at the same time structural change will mean that industrial electricity demand will not rebound to its prerecession levels. Several industries have been experiencing declining output and sales for several years and the current economic climate will lead to a reduction in industrial capacity as unprofitable, outdated and surplus facilities are eliminated.
- Risks – The remainder of 2009 will see the economy bottom out and move into positive growth. However, the fragile state of the economy and consumer confidence could be undermined by any number of significant shocks. Indications are that financial sector has stabilized but future "stress tests" on the banks balance sheets could be cause for concern should an institution fail. Secondly, the automotive sector has a very large economic footprint in the province and is a source of potential downside risk depending on how they fare throughout 2009. Either of these two items could lengthen or deepen the recession.

Actual Weather and Demand

Since the last forecast the actual demand and weather data for March and April has been recorded. Here are the highlights:

March

- The weather for March was near normal. The monthly demand peak occurred on the coldest day of the month when the afternoon temperature dropped to -9.6°C. Overall, the month was milder than normal but the peak day was colder than normal.
- Actual peak demand for March was 21,466 MW and occurred on March 2nd. Since the peak occurred on the coldest day it is not surprising that the weather corrected peak was a much lower 20,855 MW. This is the lowest March weather corrected peak since 1999.
- Actual energy demand for the month was 12.2 TWh and the weather-corrected energy demand was 12.1 TWh. These are both lower than any March data since the late 1990's.
- Wholesale industrial energy demand was 20.0% lower than the previous March. This coincides with the significant contraction in the U.S. economy in the first quarter.

April

- April's weather was also near normal. The monthly peak occurred on the coldest day which was slightly colder than normal.
- The peak for April was 18,744 MW the lowest April since 2001. The weather-corrected peak was 19,717 MW which is also the lowest since 2001.
- Actual energy demand for the month was 10.7 TWh the lowest April since 1998. The weather-corrected energy demand was 10.8 TWh the lowest April since 1996.
- Wholesale industrial customers' consumption fell 27.9% compared to the previous April. The year over year decline was impacted by the Easter holiday since last year it was observed in March.

Overall, the weather experienced this year has been near normal. For the first four months actual energy demand has been 5.3% lower than the previous year. On a weather-corrected basis that figure is -5.9%. The decline is slightly overstated due to the fact that 2008 was a leap year and had an extra day's worth of electricity demand. Economic factors far out-weighed any weather impacts through the beginning of 2009.

Demand Forecast

The 18-Month Outlook provides a forecast of demand which includes the impact of additional conservation savings and demand reductions from projected off-grid generation.

The Ontario Power Authority (OPA) and local distribution companies (LDC) continue to take actions that reduce demand. In the 18-Month Outlook the impacts of conservation and embedded generation are decremented from demand, whereas the OPA's demand response programs are included in our analysis as a resource. A discussion of the impacts of conservation, embedded generation and demand response are included in section 3.4 of this document.

Table 1 summarizes the annual peak and energy demand forecast for the period covered in this 18-month forecast. Demand is expected to fall this year and next due to the recession, conservation initiatives and the growth in embedded generation.

Table 1: Peak and Energy Demand Forecast

Season	Normal Weather Peak (MW)	Extreme Weather Peak (MW)
Summer 2009	24,351	26,454
Winter 2009-10	22,886	24,046
Summer 2010	24,160	26,348
Year	**Normal Weather Energy (TWh)**	**% Growth in Energy**
2006 Energy	152.3	-1.9%
2007 Energy	151.6	-0.5%
2008 Energy	148.9	-1.8%
2009 Energy (Forecast)	142.9	-4.0%
2010 Energy (Forecast)	142.5	-0.3%

- End of Section

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1.0 Introduction

1.1 Outlook Documents

The Ontario Electricity Market Rules (Chapter 5 Section 7.1) require that a demand forecast for the next 18 months be produced and published on a quarterly basis. This Ontario Demand Forecast meets this requirement and covers the period from June 2009 to December 2010. It supersedes the previous forecast released March 2009.

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 "Methodology to Perform Long Term Assessments" (IESO_REP_0266) (found on the IESO web site at http://www.ieso.ca/imoweb/pubs/marketReports/Methodology_RTAA_2009may.pdf. Readers may envision other 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.

Ontario demand is the sum of coincident loads plus the losses on the IESO-controlled grid. This demand forecast was based on actual demand, weather and economic data through the end of February 2009. Data for March and April have been incorporated into the tables and figures of this document. This document is divided into the following sections:

- Section 2.0 summarizes the forecast results
- Section 3.0 looks at historical demand
- Section 4.0 describes the assumptions used in this forecast of electricity demand
- Appendices A through C contain additional forecast details and analysis.
- All the tables in this report are contained in the Outlook - Tables spreadsheet posted alongside the Outlook documents. Additional tables are also included in the spreadsheet. Having a separate spreadsheet allows for historical data right back to market opening. That would not be practical in a printed document.

Readers are invited to provide comments or suggestions regarding the content of this or future reports. To do so, please call the IESO Customer Relations at 905-403-6900 or 1-888-448-7777 or send an email to customer.relations@ieso.ca or to forecasts.demand@ieso.ca.

Electronic copies of the forecast and weather scenarios are available upon request.

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2.0 Demand Forecast

This section presents the demand forecast for 2009-2010. Additional tables are included in the Outlook Tables spreadsheet. In particular, the zonal forecasts (Tables 3.1.2 and 3.1.3) which used to be included in the Appendices are now located in the spreadsheet. The spreadsheet also contains Table 3.1.1 which tracks the monthly forecast against weather corrected actual.

Table 2.1 has the forecast of system weekly peak and energy demand. It also includes the load forecast uncertainty (LFU) for the weekly peak. The LFU is a measure of variability in load due to the volatility of weather.

Table 2.1: Weekly Peak and Energy Demand Forecast

Week Ending	Normal Peak (MW)	Extreme Peak (MW)	Load Forecast Uncertainty (MW)	Normal Energy Demand (GWh)	Week Ending	Normal Peak (MW)	Extreme Peak (MW)	Load Forecast Uncertainty (MW)	Normal Energy Demand (MWh)
07-Jun-09	20,071	23,604	1,244	2,585	21-Mar-10	20,486	22,340	662	2,737
14-Jun-09	22,391	24,678	1,052	2,682	28-Mar-10	19,996	21,819	852	2,768
21-Jun-09	23,173	25,640	1,253	2,729	04-Apr-10	19,595	21,199	450	2,791
28-Jun-09	22,897	25,457	1,319	2,767	11-Apr-10	19,029	20,532	696	2,848
05-Jul-09	21,891	24,012	879	2,747	18-Apr-10	18,557	20,127	596	2,841
12-Jul-09	23,802	25,580	1,013	2,805	25-Apr-10	18,538	21,954	553	2,861
19-Jul-09	24,351	26,454	1,206	2,921	02-May-10	17,932	21,939	474	2,752
26-Jul-09	23,542	25,664	978	2,845	09-May-10	18,089	21,697	381	2,851
02-Aug-09	22,705	24,408	828	2,844	16-May-10	18,628	22,254	352	2,968
09-Aug-09	23,670	26,409	1,005	2,831	23-May-10	19,056	21,979	599	3,007
16-Aug-09	23,375	25,839	982	2,850	30-May-10	19,399	22,733	580	3,060
23-Aug-09	22,520	25,002	794	2,788	06-Jun-10	20,207	24,555	445	3,008
30-Aug-09	22,907	25,194	692	2,804	13-Jun-10	20,431	23,419	422	3,012
06-Sep-09	21,388	25,362	1,401	2,676	20-Jun-10	22,122	24,483	554	2,997
13-Sep-09	20,686	25,154	1,422	2,564	27-Jun-10	22,959	25,337	455	2,977
20-Sep-09	19,919	24,411	1,206	2,596	04-Jul-10	22,275	24,811	509	2,913
27-Sep-09	19,173	23,016	864	2,550	11-Jul-10	22,974	24,675	386	2,905
04-Oct-09	18,733	23,064	611	2,543	18-Jul-10	23,553	25,404	780	2,858
11-Oct-09	18,640	19,885	511	2,551	25-Jul-10	24,160	26,348	762	2,809
18-Oct-09	18,977	20,130	551	2,535	01-Aug-10	23,442	25,492	793	2,749
25-Oct-09	19,411	20,390	730	2,643	08-Aug-10	22,680	25,507	760	2,607
01-Nov-09	19,980	20,854	793	2,668	15-Aug-10	23,462	26,300	862	2,602
08-Nov-09	20,200	21,183	620	2,682	22-Aug-10	23,279	25,727	589	2,559
15-Nov-09	20,695	21,924	662	2,737	29-Aug-10	22,255	24,850	583	2,532
22-Nov-09	21,060	22,471	852	2,768	05-Sep-10	22,146	24,864	869	2,490
29-Nov-09	21,106	22,932	450	2,791	12-Sep-10	21,281	25,267	751	2,493
06-Dec-09	21,575	23,093	696	2,848	19-Sep-10	20,499	25,020	471	2,487
13-Dec-09	21,883	23,190	596	2,841	26-Sep-10	19,729	24,279	1,009	2,503
20-Dec-09	21,808	22,968	553	2,861	03-Oct-10	19,107	22,902	1,389	2,458
27-Dec-09	21,162	22,251	474	2,752	10-Oct-10	18,600	22,893	922	2,567
03-Jan-10	21,487	22,732	381	2,851	17-Oct-10	18,795	19,868	1,306	2,556
10-Jan-10	22,383	23,353	352	2,968	24-Oct-10	19,201	20,347	1,129	2,672
17-Jan-10	22,510	23,692	599	3,007	31-Oct-10	19,611	20,575	1,171	2,714
24-Jan-10	22,886	24,046	580	3,060	07-Nov-10	19,899	20,829	1,403	2,694
31-Jan-10	22,727	23,978	445	3,008	14-Nov-10	20,251	21,225	871	2,810
07-Feb-10	22,632	23,865	422	3,012	21-Nov-10	20,737	22,027	1,094	2,803
14-Feb-10	22,149	23,429	554	2,997	28-Nov-10	21,029	22,478	1,278	2,920
21-Feb-10	22,066	23,175	455	2,977	05-Dec-10	21,230	23,006	921	2,854
28-Feb-10	21,564	22,831	509	2,913	12-Dec-10	22,110	23,535	987	2,786
07-Mar-10	21,536	22,375	386	2,905	19-Dec-10	22,388	23,606	1,007	2,822
14-Mar-10	20,886	22,727	780	2,858	26-Dec-10	20,781	22,071	976	2,801

Overall, the revised forecast is lower than the previous forecast. Demand at the start of the year has fallen off precipitously as the U.S. economy contracted by 6.1%. Despite projecting lower demand in the previous Outlook, actuals are trending below even those levels. Therefore, the

forecast has been revised downwards to show a significant decline in 2009 and a smaller decline in 2010.

Figures 2.1 and 2.2 show the projected energy and peak demand for the outlook period.

Figure 2.1: Weekly Energy Demand – History and Forecast

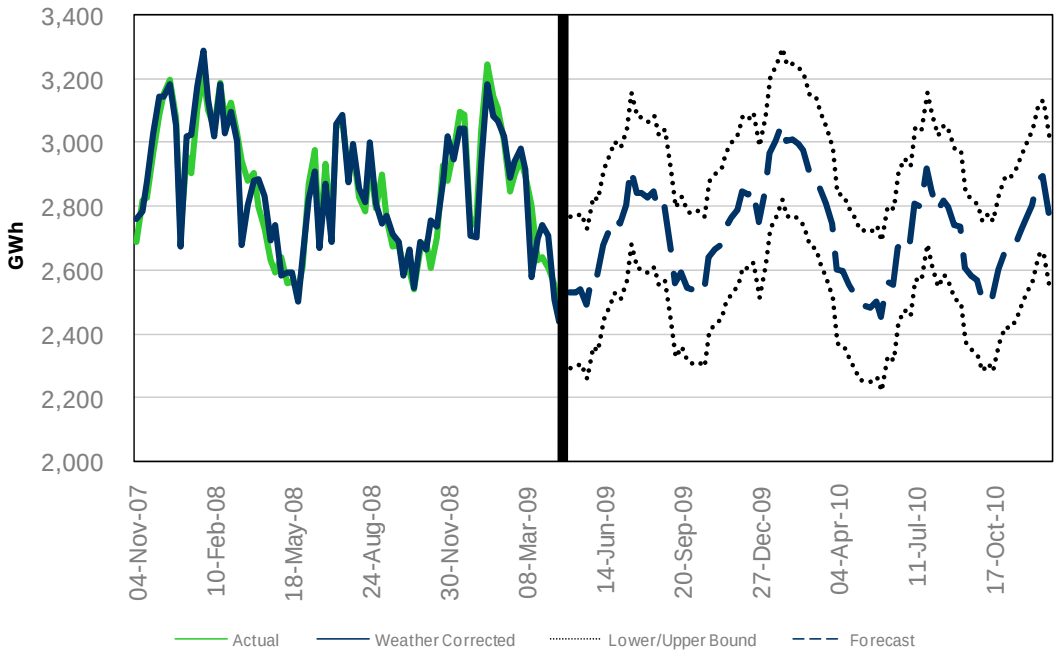
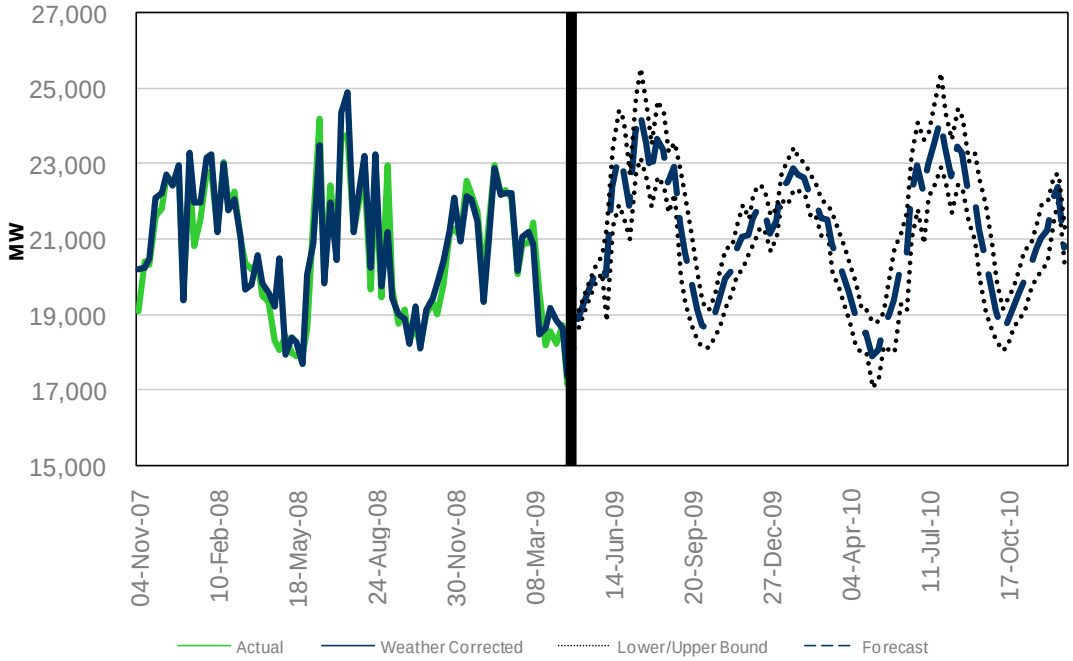


Figure 2.2: Weekly Peak Demand – History and Forecast



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3.0 Historical Review

This section covers historical energy and peak demand. The weather-corrected numbers are generated based on Normal weather.

3.1 January to April Review

The weather has been fairly normal for the start of 2009. Demand has been low primarily due to the current economic downturn. Both peak and energy demand were lower than expected for the four months. Table 3.1 contains a summary of the weather and demand for the past four months. Table 3.3.2 of the Outlook Tables spreadsheet contains similar information going back to market opening.

Table 3.1: Historical Weather and Demand Summary

Historical Analysis		January	February	March	April
Actual	Average Temperature (°C)	-5.7	-0.2	4.9	11.7
	Minimum Temperature (°C)	-13.4	-13.1	-9.6	-0.5
	Maximum Temperature (°C)	3.2	9.2	17.9	27.4
Monthly Normal	Normal Average Temperature (°C)	-3.3	-1.5	3.6	10.7
	Normal Minimum Temperature (°C)	-13.5	-13.5	-5.5	2.8
	Normal Maximum Temperature (°C)	6.7	8.2	16.7	25.0
Actual	Peak Demand (MW)	22,983	22,110	21,466	18,744
	Average Hour (MW)	18,455	17,408	16,353	14,926
	Minimum Hour (MW)	13,872	13,312	11,855	10,790
	90th Percentile (MW)	21,034	19,676	18,907	17,106
	Percent above 20,000 (MW)	26.8%	7.1%	2.8%	0.0%
	# of Hours Above 20,000 (MW)	199	48	21	0
	Energy Demand (GWh)	13,730	11,698	12,167	10,747
Weather Corrected	Peak Demand (MW)	22,901	22,217	20,885	19,717
	Energy Demand (GWh)	13,409	11,833	12,142	10,846
Forecast	Peak Demand (MW)	23,813	23,221	21,915	20,075
	Energy Demand (GWh)	13,687	12,297	12,747	11,355

Notes for Table 2.1 – Weather is for Toronto. Temperature is the daily high. Forecast is the most recent for that period.

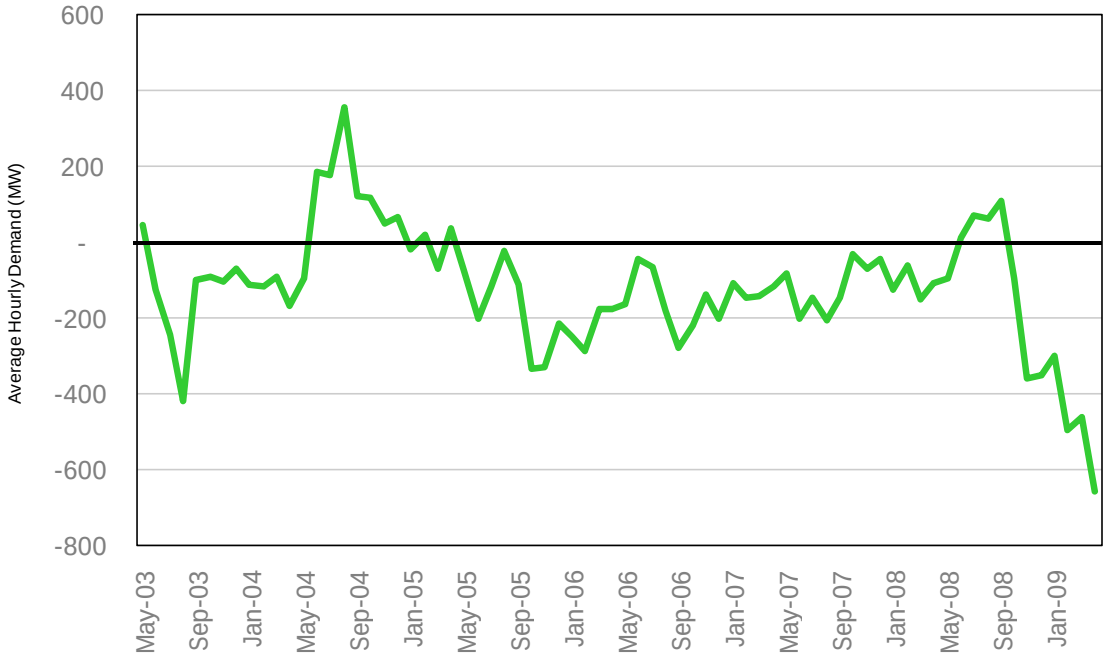
3.2 Historical Energy Demand

Actual energy demand was 5.3% lower for the four months compared to a year earlier. After adjusting for both the weather and the leap year, demand was 5.2% lower than the same months

of 2008. As mentioned above, the main reason for the decline has been the current economic downturn.

Figure 3.1 shows the year over year change in wholesale customers' consumption. Consumption has been falling since the spring of 2005, coinciding with the appreciation of the Canadian dollar. Prior to the financial crisis this past fall these customers had shown four consecutive months of year over year growth – a string of growth not seen since the end of 2004. As North America fell into recession in the fourth quarter of 2008 industrial demand has dropped significantly. For the first four months of 2009 wholesale customer consumption has fell by 20% compared to a year earlier.

Figure 3.1: Wholesale Customer's Year over Year Change in Consumption



Overall energy demand has experienced a similar profile to that of the industrial sector. Though not as volatile, energy demand has been declining or flat since 2005. Part of this is due to economic factors but the growth in conservation and embedded generation has further reduced the demand for electricity on the grid.

Figure 3.2 shows the moving average of weekly demand. The graph depicts the general decline in energy demand since the summer of 2005. As well, the steep decline as North America dropped into the current recession is also apparent.

Table 3.2 contains the weekly energy demand for the past three months. The table has the actual and weather corrected demand for each week and notes any item of significance for the week. If the weather correction is positive it means that the actual weather was milder than normal. Additional history is available in the Outlook Tables spreadsheet in Table 3.3.1.

Figure 3.2: Energy Demand – 52 Week Moving Average

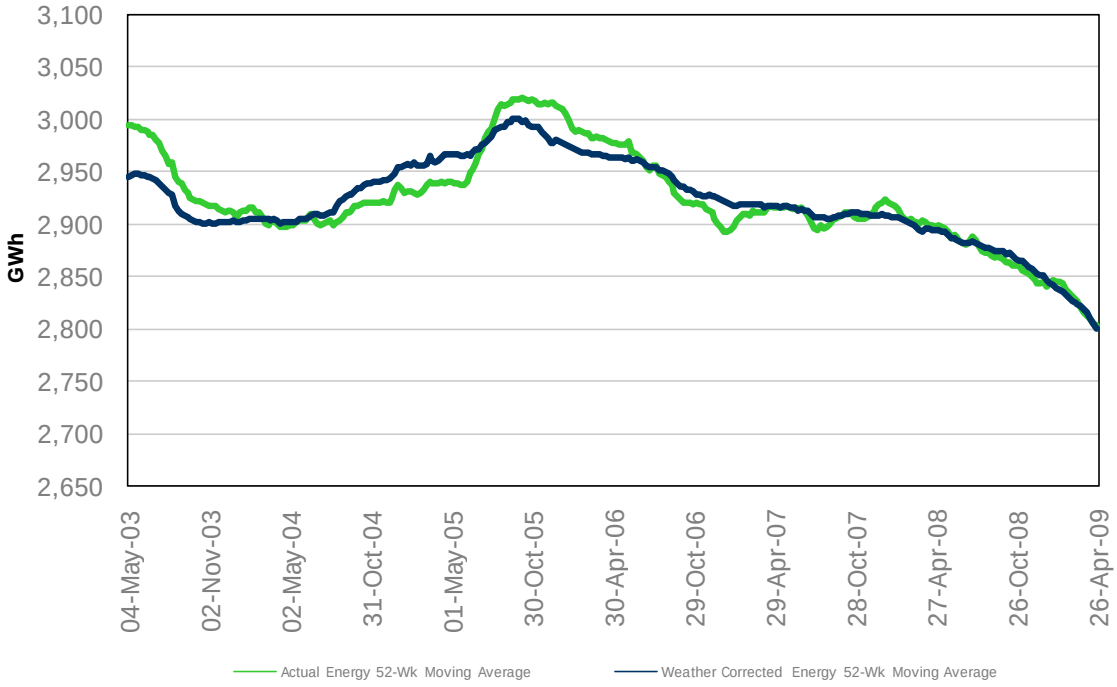


Table 3.2: Historical Weekly Energy Demand

Week Number	Week Ending	Actual Energy (GWh)	Corrected Energy (GWh)	Notes for Week
6	08-Feb-09	3,006	3,021	
7	15-Feb-09	2,851	2,891	
8	22-Feb-09	2,902	2,945	Family Day
9	01-Mar-09	2,952	2,980	
10	08-Mar-09	2,896	2,917	
11	15-Mar-09	2,806	2,580	
12	22-Mar-09	2,633	2,699	
13	29-Mar-09	2,644	2,741	
14	05-Apr-09	2,609	2,708	
15	12-Apr-09	2,558	2,509	Good Friday
16	19-Apr-09	2,456	2,441	East Monday
17	26-Apr-09	2,480	2,530	

3.3 Historical Peak Demand

Peak demands occur when weather extremes occur on weekdays. As such, peaks are primarily a weather driven event. However, the current economic situation is having an impact on peak demands as the base load underlying the peaks has been eroded. In much the same way that weekends and holidays will blunt the impact of extreme weather events; the recession is having a dampening impact on peak demands. Figure 2.4 shows the wholesale customers consumption at the time of the monthly peak. The graph clearly shows a steady decline since 2005 and a significant drop over the past few months. The economic impact on peak demand - through the

directly connected customers - has been in the neighbourhood of 450 MW over the past seven months. Additional market participant consumption data is contained in Table 3.3.3. of the Outlook Tables spreadsheet.

Figure 3.3: Wholesale Customers Coincident Peak and Average Hourly Consumption

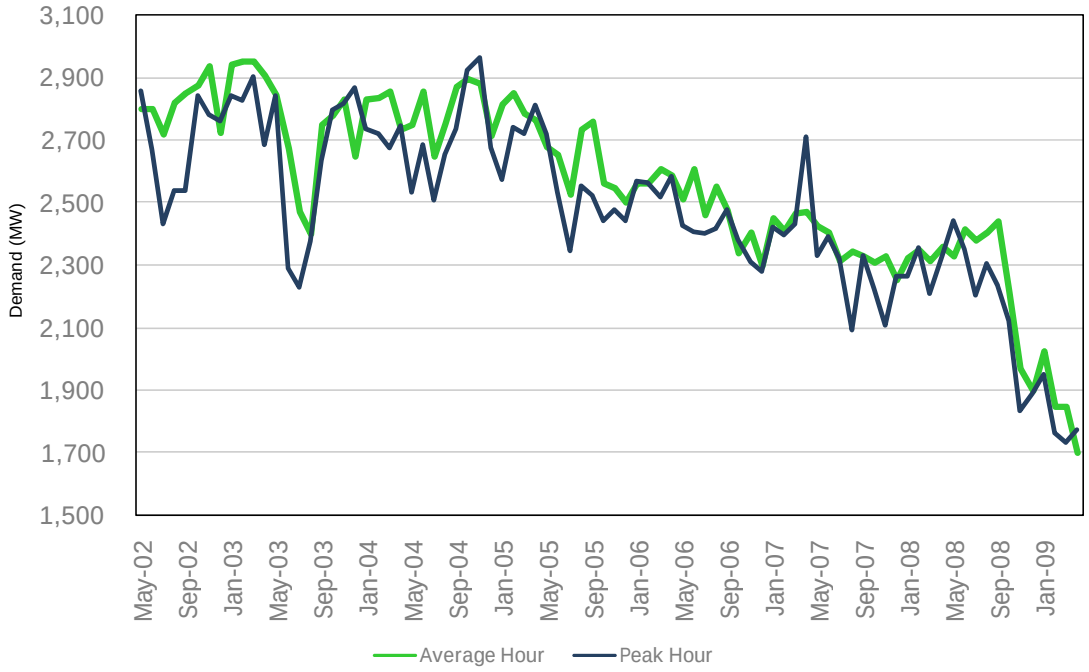


Figure 3.4: Peak Demand – 52 Week Moving Average

The same decline can be seen at the system level. Figure 3.4 shows the 52-week moving-average of peak demand. A similar drop of roughly 450 MW is evident.

Table 3.3 shows the actual and weather-corrected weekly peak demand for the past three months.

Table 3.3: Weekly Peak Demand

Week Number	Week Ending	Peak Day	Actual Peak (MW)	Weather Corrected Peak (MW)	Peak Day Temperature
6	08-Feb-09	Wed-Feb-4	22,110	22,217	-13.1
7	15-Feb-09	Thu-Feb-12	20,093	20,184	4.5
8	22-Feb-09	Thu-Feb-19	20,878	21,063	-5.2
9	01-Mar-09	Mon-Feb-23	20,920	21,197	-6.1
10	08-Mar-09	Mon-Mar-2	21,466	20,885	-9.6
11	15-Mar-09	Thu-Mar-12	19,619	18,478	-3.4
12	22-Mar-09	Thu-Mar-19	18,214	18,637	3.2
13	29-Mar-09	Tue-Mar-24	18,603	19,175	2.8
14	05-Apr-09	Mon-Mar-30	18,239	18,864	4.9
15	12-Apr-09	Tue-Apr-7	18,744	18,656	-0.5
16	19-Apr-09	Tue-Apr-14	17,190	17,365	11.4
17	26-Apr-09	Mon-Apr-20	18,186	19,717	5.6

3.4 Load Duration Curves

The following graphs illustrate the load duration curves for February, March and April. Although the weather influences the levels to a large degree, the economic slowdown is evident in each of the graphs.

Figure 3.5: February Load Duration Curve

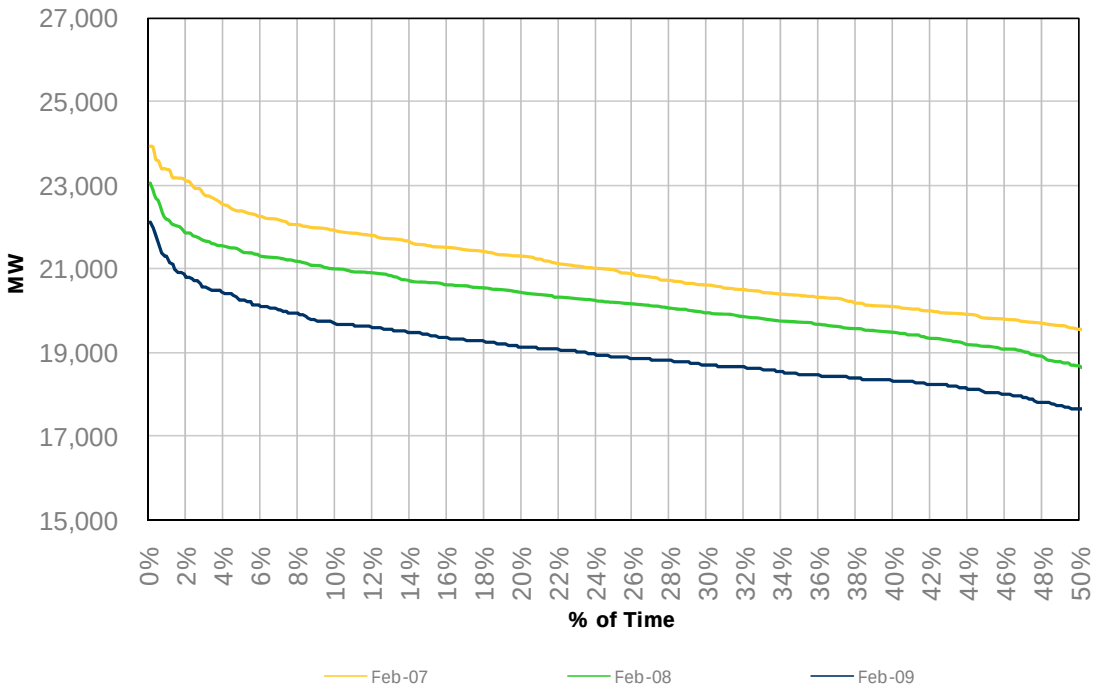


Figure 3.6: March Load Duration Curve

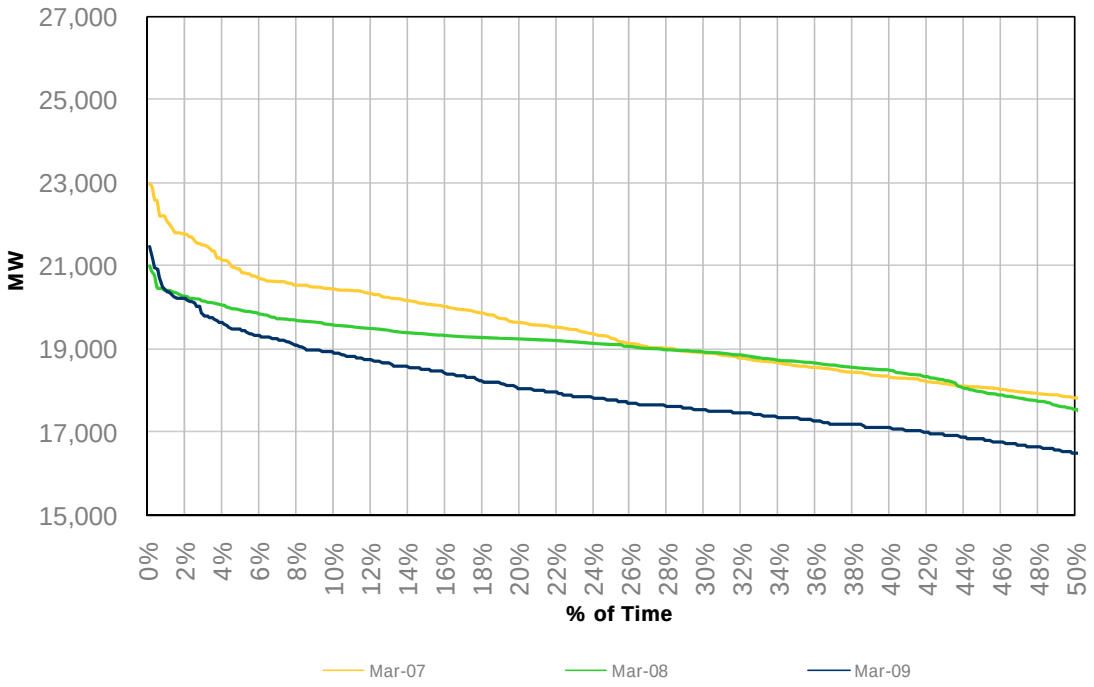
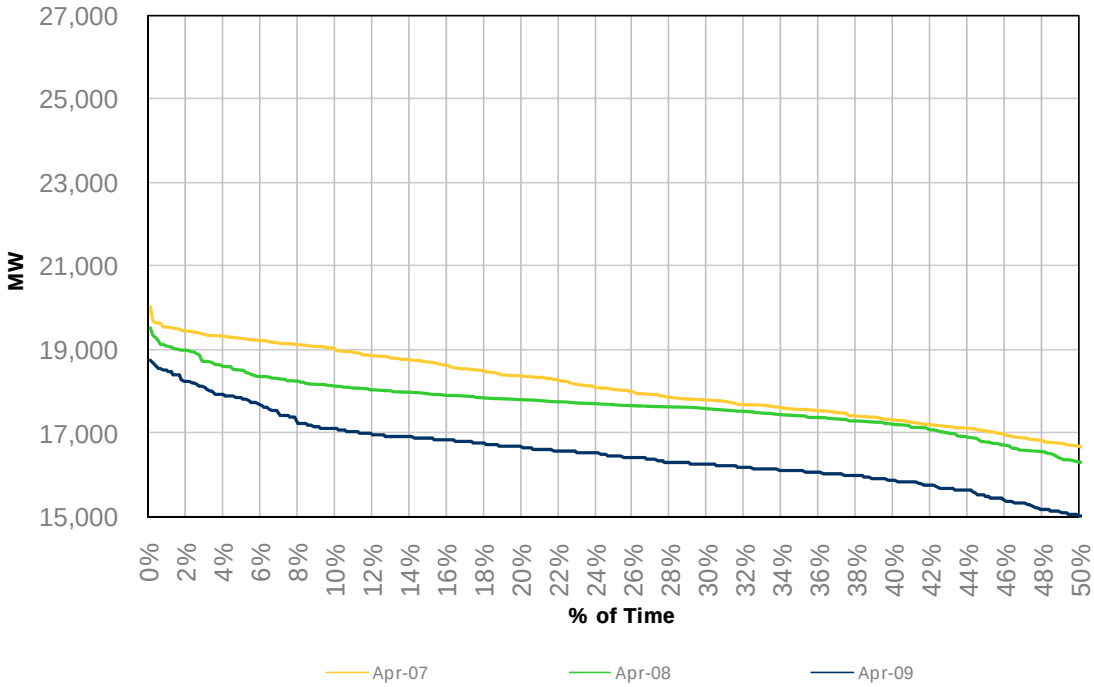


Figure 3.7: April Load Duration Curve



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4.0 Forecasting Process and Assumptions

A detailed description of the forecasting methodology can be found in the document entitled "Methodology to Perform Long Term Assessments" (IESO_REP_0266) (found on the IESO web site at http://www.ieso.ca/imoweb/pubs/marketReports/Methodology_RTAA_2009may.pdf.

The form and structure of the model has not changed since the last Outlook. The most recent demand, weather and economic data were incorporated into the model which was re-estimated based on this information. This Outlook only includes the Planned scenario. The Firm scenario assumed no incremental growth in conservation, demand management or embedded generation. With the growth in these programs to date, it made the Firm scenario unrealistic and it was therefore dropped.

The forecast of demand requires inputs and this section covers each class of drivers.

4.1 Calendar Drivers for Forecast

Calendar variables are addressed in the Methodology document. Essentially, forecasting the calendar impacts – days of the week, holidays, sunrise and sunset – are pretty straightforward.

4.2 Economic Drivers for Forecast

To produce an energy and peak demand forecast, an economic forecast of various drivers is required. The IESO uses a consensus of four publicly available provincial forecasts to generate the economic drivers used in the forecast. The IESO also purchases economic forecasts for additional insight and analysis. Table 4.1 summarizes the key economic drivers for the demand forecast. The Ontario growth index is a weighting of the economic drivers as they relate to demand.

Table 4.1: Forecast of Ontario Economic Drivers

Year	Ontario Employment		Ontario Housing Starts		Ontario Growth Index	
	Thousands	Annual Growth (%)	Thousands	Annual Growth (%)	Index	Annual Growth (%)
1995	5,098	2.0	31.9	-23.3	1.025	1.42
1996	5,161	1.2	39.5	23.9	1.036	1.05
1997	5,277	2.3	50.0	26.5	1.054	1.69
1998	5,440	3.1	50.1	0.2	1.077	2.18
1999	5,621	3.3	62.9	25.6	1.102	2.34
2000	5,801	3.2	67.4	7.1	1.128	2.39
2001	5,924	2.1	70.3	4.2	1.150	1.88
2002	6,014	1.5	79.6	13.3	1.169	1.65
2003	6,203	3.1	80.9	1.7	1.198	2.49
2004	6,310	1.7	79.9	-1.3	1.219	1.78
2005	6,390	1.3	73.2	-8.4	1.237	1.49
2006	6,485	1.5	67.8	-7.4	1.256	1.53
2007	6,585	1.6	62.8	-7.4	1.275	1.47
2008	6,686	1.5	71.9	14.6	1.294	1.50
2009 (f)	6,501	-2.8	47.5	-34.0	1.284	-0.79
2010 (f)	6,505	0.1	49.4	4.0	1.291	0.54

The U.S. recession has had a large negative impact on Ontario's export oriented manufacturing sector. Although much of the focus has been on the automotive industry, the declines have been fairly widespread across the industrial sectors. A slowdown in the world economy has meant lower commodity prices and declines across Canada's resource sectors.

As mentioned earlier in this document, industry has been quick to react to the recession and has cut production to avoid inventory build-ups. This has contributed to the significant decline in industrial electricity consumption but also means mean that industry will rebound quicker when the economy and consumer demand picks up in 2010. However, during the recession there will be rationalization of Ontario's productive capacity. Older, inefficient and uncompetitive plant will be taken out of production. This structural change will mean that Ontario will see economic recovery before it will see a recovery in industrial electrical demand.

The forecast still faces considerable downside risk associated with the financial sectors' ability to restore confidence and credit. As well, the potential bankruptcy of a number of large firms could have negative effects on the Ontario economy both directly and indirectly through suppliers and contractors.

4.3 Weather Drivers for Forecast

Since forecasting long-term weather is not possible, weather scenarios are generated based on historical data. The analytical studies that the IESO produces serve a variety of purposes and needs. As such, a variety of inputs are required. Therefore the IESO produces demand forecasts based on a number of different weather scenarios. The most commonly utilized scenarios are Normal and Extreme.

The weather scenarios are generated using the following steps:

- For each day over the past 31 years a "weather factor" is calculated based on the weather conditions of that day (temperature, wind speed, cloud cover and humidity). This weather factor represents the MW impact on demand if those weather conditions were observed in the forecast horizon.
- The daily weather factors are sorted from highest to lowest for each month.
- Normal weather is based on the median value of the sorted weather factors across the 31 years of history. For example, the median value of the maximum weather factor from each January from 1978 to 2008 would be the first value for the normal January. The median value of the second highest weather factor from each January from 1978 to 2008 would be the second day in the normal January. This is repeated until all days in the month are generated. Once the normal months are created they are mapped to the calendar based on the weekly average distribution of weather. The weekly peak eliciting weather is always mapped to Wednesday to ensure that peaks do not occur on weekends or holidays.
- Extreme weather is generated in a similar manner except that we use the maximum, rather than the median value from the sorted data.

Load Forecast Uncertainty (LFU) - a measure of demand fluctuations due to weather variability - is a critical part of the analysis. In conjunction with the normal weather forecast, LFU is valuable in determining a distribution of potential outcomes under various weather conditions. The resource adequacy assessments use the normal weather forecast in combination with LFU to

consider a full range of peak demands that can occur under 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 useful when examining peak conditions but is unrealistic from an energy demand standpoint, as severe weather conditions do not persist over a long time period.

The Outlook Tables spreadsheet includes Table 3.3.5 which has 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 v high (temperature) and wind speed. Not shown but used in forecasting demand are humidity and cloud cover. The IESO uses six weather stations in the demand models – the data in the table is for Toronto. The weather scenarios were updated for data through the end of December 2007.

4.4 Conservation and Demand Management

Conservation and demand management within the Outlook are broken into three groups; conservation, embedded generation and demand management. Conservation includes energy efficiency programs, conservation behaviour, fuel switching and the impacts of smart meters. Embedded generation refers to load-displacing generation that is located on the Market Participants' side of the meter. This would include generation under the Renewable Energy Standard Offer Program (RESOP) and similar future programs. Demand management includes the OPA's Demand Response programs and the IESO's Dispatchable Loads program. Each of these groups will impact demand throughout the forecast.

Projected conservation numbers are provided to the IESO by the Ontario Power Authority (OPA). These forecasts are based on existing and future programs. Expected conservation impacts are decremented from demand.

Information on embedded generation is factored into the demand forecast. Embedded generation will displace demand that would have been met through the grid. Although the demand for electricity is unaltered, the source of supply will not be from the grid. Therefore the impacts of embedded generation are decremented from demand.

Demand response projections are also provided by the OPA. Demand management programs represent a demand reduction that will be dispatched like a resource or generator. Conceptually, these programs represent a capacity that can be called on when needed. Therefore, demand management is treated as a resource with a capacity value in MW. Adjustments are made based on historical data for the amount of demand management that is deemed to be reliably available.

Over the course of the forecast, the amount of conservation and demand management are expected to increase. Conservation - at the time of peak - is expected to grow by 215 MW over the course of the forecast. Embedded generation is expected to grow by 145 MW for peak periods over the Outlook time frame. Lastly, demand management programs are projected to increase their available capacity from 375 MW to 624 MW.

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