18-MONTH OUTLOOK:

An Assessment of the Reliability of the Ontario Electricity System

From April 2005 to September 2006

ieso
Power to Ontario. On Demand.

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Executive Summary

The outlook for the reliability of Ontario's electricity system remains generally positive over the next 18 months with the addition of new generation.

Eight of the 10 new projects from the recent Request for Proposals for Renewable generation are expected to be available within the 18 month timeframe of this Outlook. A Request for Proposals for an additional 2,500 MW of new clean generation and demand side projects has also been issued. Successful projects from the 2,500 RFP are expected to be announced soon.

The return to service of Ontario Power Generation's Pickering Unit 1 is also scheduled for the fall of 2005.

A brief period of reduced reserve levels in the summer of 2005 has been identified as a result of a combination of increased forecast peak demand, additional generator planned maintenance, new generation and price-responsive demand in-service adjustments and higher forecast thermal plant forced outage rates. During this period, reserve levels are expected to be manageable through available market mechanisms which may include imports or the rescheduling of generator maintenance outages.

Hydro One's development of the first phase of the Parkway transformer station is near completion and will address concerns related to the April 30, 2005 shutdown of the Lakeview Thermal Generating Station in Mississauga.

The Independent Electricity System Operator (IESO) publishes quarterly assessments of the reliability of the Ontario electricity system over the next 18 months. These assessments advise market participants of the resource and transmission reliability of the Ontario electricity system and identify potentially adverse conditions that might be avoided through adjustment or coordination of maintenance plans for generation and transmission equipment.

This report presents the IESO assessment of the 18 month period from April 1, 2005 to September 30, 2006. It is based on the IESO's forecast of electricity demand, information provided by Ontario generators on the supply available and the latest information on the configuration and capability of the transmission system.

Resource Outlook

Forecast available resources are expected to exceed the planning requirements throughout the next 18 months, under the Planned Resource Scenario with the exception of six weeks in the summer of 2005.

Ontario Power Generation plans to return Pickering A Unit 1 to service by the end of September, 2005 will result in a projected capacity increase of 515 MW in the fall of 2005. Eight of the 10 successful renewable energy projects are expected to come into service within the 18 month timeframe.

By the end of the 18 month study timeframe, price-responsive demand is forecast to exceed 650 MW, due to continuing increases in the amount of dispatchable load expected to be offered into the IESO-administered markets.

As with previous Outlooks, under extreme weather conditions, imports may be required into the IESO-administered markets and the IESO may need to defer or cancel generation maintenance to ensure that Ontario demand is met during peak periods.

Transmission Outlook

The transmission assessment continues to be similar to previous Outlooks. The transmission system is expected to be adequate to supply demand under the forecast conditions studied in this Outlook. Nanticoke, Pickering and Darlington units are required to provide reactive capability to maintain adequate voltage levels, especially during summer peak demand periods.

The shutdown of Lakeview TGS by April 30, 2005 in accordance with Ontario Regulation 396/01 has a number of transmission system impacts which are being addressed. Hydro One is nearing completion of the first phase of the Parkway Transformer Station which will help address transformer overload concerns, with this facility expected to be in service by the spring of 2005. The remaining voltage support requirements are expected to be addressed by the installation of additional shunt capacitors and related transformer controls by Hydro One. Three of the four shunt capacitors required for voltage support have been installed with the fourth expected on schedule.

Ontario Demand Forecast

The IESO demand forecast has been updated to reflect actual economic, demand and weather data through to the end of December 2004. The economic outlook has improved over the previous forecast. This is due to the relative strength of the Ontario economy despite high oil prices and a high dollar. Strong domestic demand has helped lessen the impact of lower exports. As well, the U.S. economy has shown strength in the face of large budget and trade deficits. Despite higher oil prices, inflation remains under control, allowing the Bank of Canada to forego rate increases which would cool domestic demand. Avoiding rates hikes will also take some of the upward pressure off the Canadian dollar and foster export growth.

On a weather-corrected basis, energy demand has been higher than expected over the last few months. This is due to the better than expected economic performance. The improved economic outlook and inclusion of actual data have led to an increase in the energy and peak demand compared to the previous 18 month outlook.

Normal weather peak demand for 2005 is forecasted to be 23,897 MW for the summer and 24,508 MW for the winter of 2006. Energy demand is expected to be 155.5 TWh for 2005, a 1.1% increase over the weather corrected value for 2004.

The following table summarizes seasonal forecast peak demands for the Outlook period.

Season	Normal Weather Peak (MW)	Expected Seasonal Peak (MW)	Extreme Weather Peak (MW)
Summer 2005	23,897	25,551	26,981
Winter 2006	24,508	24,990	26,143
Summer 2006	24,432	25,873	27,604

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The contents of these materials are for discussion and information purposes and are provided "as is" without representation or warranty of any kind, including without limitation, accuracy, completeness or fitness for any particular purpose. The Independent Electricity System Operator (IESO) assumes no responsibility to you or any third party for the consequences of any errors or omissions. The IESO may revise these materials at any time in its sole discretion without notice to you. Although every effort will be made by the IESO to update these materials to incorporate any such revisions it is up to you to ensure you are using the most recent version

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1.0 Introduction

This Outlook covers the 18 month period from April 1, 2005 to September 30, 2006. It supersedes the report titled "An Assessment of the Reliability of the Ontario Electricity System from January 2005 to June 2006", dated December 22, 2004. Its purpose is to advise market participants of the resource and transmission reliability of the Ontario electricity system, and to assess potentially adverse conditions that might be avoided through adjustment or coordination of maintenance plans for generation and transmission equipment.

Section 2 identifies the resources expected to be available during the study period and Section 3 presents an assessment of the adequacy of these resources under the current generation outage program. An assessment of the reliability of the transmission system is presented in Section 4. Overall observations, findings and conclusions are contained in Section 5.

This Outlook presents an assessment of resource and transmission adequacy based on the stated assumptions, and using the described methodology. 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 Outlook provides a base upon which updates in assumptions can be considered. The tables contained in the document can be downloaded from the Independent Electricity System Operator (IESO) web site in MS Excel format.

In addition to the comprehensive Outlook, the IESO generally publishes Interim Updates to the 18-Month Outlook during each month for which a full Outlook is not issued. These updates consist of a spreadsheet which reflects changes to Total Resources, Total Reductions to Resources, and Reserve Above Requirement values for the Planned Resource Scenario. Similar to the full Outlooks, the Interim Updates are posted on the IESO web site. These updates provide Outlook information on a more frequent basis to allow market participants to better adjust their operational plans and outage schedules.

The reader should be aware that Security and Adequacy Assessments are published on the IESO web site on a weekly and daily basis that progressively supersede information presented in this report.

The contents of this Outlook focus on the assessment of resource and transmission adequacy. Other supporting information and forecasts are contained in separate documents. These documents will be updated as required.

- The document entitled "Ontario Demand Forecast from April 1, 2005 to September 30, 2006" (IESO_REP_0248) (found on the IESO web site at http://www.ieso.ca/imoweb/pubs/marketReports/18Month_ODF_2005mar.pdf describes in detail the 18 month forecast of electricity demand for the Ontario Market used in this Outlook. The demand forecast document identifies the assumptions used to determine the forecast and identifies the details regarding peak and energy demand forecasts for the Ontario market and parts thereof. It also contains information regarding variations in demand due to weather, economic growth and calendar day types. Data from the demand forecast document can be downloaded in MS Excel format from the IESO web site.
- 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_2005mar.pdf) contains information regarding the methodology used to perform the demand forecasts, resource adequacy assessments and transmission reliability assessments in this Outlook.

- The document entitled "Ontario Transmission System" (IESO_REP_0265) (found on the IESO web site at www.ieso.ca/imoweb/pubs/marketReports/OntTxSystem_2005mar.pdf) provides specific details on the transmission system, including the major internal transmission interfaces and interconnections with neighbouring jurisdictions.

Readers are invited to provide comments on this Outlook report or to give suggestions as to the content of future reports. To do so, please contact the IESO Help Centre:

- Toll Free: 1-888-448-7777
- Tel: 905-403-6900
- Fax: 905-403-6921
- E-mail: helpcentre@ieso.ca.

Updates from Previous Outlook

Updates to Forecast Demands

The forecast of demand has been updated to reflect the most recent economic and demand information. As part of the regular updating process, the forecasting models' equations are re-estimated based on recent economic, weather and demand data. Peak and energy demand have been higher than expected throughout the winter as industrial demand has remained strong since rebounding from the lows of this past summer. Weather has also been a factor as the winter has generally been colder than normal.

The economic outlook has also been updated and is more optimistic than the previous forecast. The combination of better than expected demand and a more optimistic economic outlook means that both peak and energy demand are higher than in the previous forecast. Annual energy demand is expected to grow by 1.1% and 1.0% in 2005 and 2006 while peak demands are higher than the previous forecast. Despite the more optimistic economic forecast there is still significant downside risk with high oil prices and a high Canadian dollar.

Updates to Resources

One of the three shutdown Pickering A nuclear units scheduled to return to service by the end of September, 2005 will result in a projected capacity increase of 515 MW. The Greater Toronto Airports Authority's new 117 megawatt co-generation power plant at Pearson International Airport is being constructed and is scheduled for commercial operation in the fall of 2005. These new generators are not considered to be part of the Existing Installed Generation Resources shown in Table 2.1.

Eight of the 10 new projects from the recent Request for Proposals for Renewable generation are expected to be available within the 18 month timeframe of this Outlook. Four of the 10 projects are embedded generators, the impact of which is reflected in the Ontario demand forecast. A Request for Proposals for an additional 2,500 MW of new clean generation and demand side

projects has also been issued. Successful projects from the 2,500 RFP are expected to be announced soon.

Both resource scenarios include a higher quantity of forecast price-responsive demand since the previous Outlook. By the end of the 18 month study timeframe, in the Planned Resource Scenario, price-responsive demand is forecast to exceed 650 MW, due to continuing increases in the amount of dispatchable load expected to be offered into the IESO-administered markets. This capability to reduce demand, based on signals sent from the IESO, represents an additional resource that may be deployed to maintain the balance between supply and demand. In the Existing Resource Scenario, there is 264 MW of price-responsive demand included in the forecast.

There have been updates to the generator outages submitted by market participants.

Updates to Transmission Outlook

The list of transmission projects and planned and forced transmission outages has been updated from the previous 18-Month Outlook.

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2.0 Resources

This section describes the generation resources that were considered in this Outlook based on information available to the IESO.

2.1 Existing Generation Resources Included in the Study

The existing installed generating capacity within Ontario is summarized in Table 2.1. This includes nuclear, coal, oil, gas, hydroelectric, wood and waste-fuelled generation, and results in a total capacity of 31,164 MW.

The capacity of installed generation resources in Table 2.1 does not include Pickering A Units 1 to 3, Bruce Units 1 and 2 and the Greater Toronto Airports Authority's new co-generation power plant. It also does not include the 395 MW of generating capacity from the renewable sources (wind, water and land fill gas) the government procured through its Request for Proposals. Eight of the 10 successful renewable projects are expected to come into service within the 18-month timeframe. In accordance with Ontario Regulation 396/01, the four units at Lakeview Thermal Generating Station (TGS) will stop producing power by the end of April 2005, resulting in a decrease in the installed generation resources by 1,148 MW.

Table 2.1 Existing Installed Generation Resources[1]

Fuel Type	Total Capacity (MW)	Number of Stations
Nuclear	10,882	5
Coal	7,564	5
Oil / Gas	4,976	23
Hydroelectric	7,676	61
Miscellaneous	66	2
Total	31,164	

2.2 Potential Generation Resource Additions

Table 2.2 summarizes the significant new generation facilities that are scheduled to come into service within the 18 month study period. This includes projects in the IESO's Connection Assessment and Approval (CAA) process that are under construction and are scheduled to be placed in-service within the 18 month study period. Generator owners or operators have provided the information regarding the status of their projects and the in-service dates listed in Table 2.2.

[1] In Table 2.1, the number of coal stations will decrease to four with the retirement of the Lakeview TGS.

Table 2.2 Potential Generation Resource Additions in Ontario

Proponent/Project Name	Zone	Fuel Type	Capacity MW	Connection Applicant's Estimated I/S Date
Pickering Unit 1	Toronto	Nuc	515	September 2005
Greater Toronto Airports Authority	Toronto	Gas	117	October 2005
Kingsbridge Wind Power Project	Southwest	Wind	40	2005 - Q4
Melancthon Grey Wind Project	Southwest	Wind	68	December 2005
Prince Wind Farm	Northeast	Wind	99	March 2006
Erie Shores Wind Farm	West	Wind	99	April 2006
Blue Highlands Wind Farm	Southwest	Wind	50	September 2006
Total			988	

The Ontario Government RFP for 300 MW of renewable resources resulted in a total of 10 successful projects that add up to 395 MW of installed capacity. A total of 118 MW of this generation is expected to become operational during 2005, and a further 248 MW is expected to become operational by the third quarter of 2006. It should be recognized that each MW of installed capacity may not reliably be available to meet demand when capacity is needed. Some of these renewable resources may only contribute intermittently to meeting Ontario demand. For each of the renewable generation projects, the amount of dependable capacity that can be relied on to meet peak demand will need to be determined.

A study with several members of the Canadian Wind Energy Association, CanWEA, has been initiated to examine the relationship of system electrical demand to expected wind output, based on test measurements taken over a one year period from around the province. The results of these studies are expected to provide a basis for starting to assess the capacity contribution which can be expected from wind generation. Future Outlooks will take these findings into consideration. Other areas in North America typically rely on 10 to 30% of the installed capacity of intermittent wind powered generation, but this amount varies depending on the prevailing wind patterns, and how the resulting generation pattern coincides with peak demand. Until further study information is available, the capacity and energy contributions from these projects are assumed to be 10% and 30% respectively.

New generators that are embedded in the distribution network or are displacing a wholesale market load have the option of participating directly in the wholesale market, or of reducing the wholesale market load of the consumer that is directly participating in the wholesale market. Four of the 10 renewable generators are embedded, the impact of which is reflected in a decrease to the Ontario demand in the IESO-administered markets.

Details regarding the IESO's CAA process and the status of all projects in the CAA queue, including copies of available Preliminary Assessment and System Impact Assessment Reports, can be found on the IESO's web site www.ieso.ca under the "Services - Connection Assessments" link. There are also a number of smaller generation capacity changes that may occur during the forecast timeframe. For this Outlook timeframe, the combined result of these generator capacity changes is about 100 MW. Some of the smaller capacity changes may not be significant enough

to require the formal CAA process, and therefore not all of the capacity additions may have a project listed in the CAA queue.

2.3 Summary of Resource Scenarios

In assessing future resource adequacy, it is necessary to make a number of assumptions regarding the magnitude of resources expected to be available for operation. Two resource scenarios were considered in this Outlook: an Existing Resource Scenario and a Planned Resource Scenario. Both resource scenarios were established starting from the existing installed resources shown in Table 2.1.

Under the **Existing Resource Scenario,** Ontario generation resources identified in Table 2.1 were assumed to be in-service for the duration of the study period with the exception of the four coal-fired units (1,148 MW) at the Lakeview TGS which were assumed to cease operation by April 30, 2005 in accordance with Ontario Regulation 396/01. This resource scenario assumed that none of the additional generation resources listed in Table 2.2 would be placed in service over the study period. The existing resource scenario includes 264 MW of price-responsive demand capability. This value is based on the existing capability to decrease demand below the demand forecast levels.

Under the **Planned Resource Scenario** existing Ontario generation resources were assumed to be in-service for the duration of the study period with the exception of the four coal-fired units (1,148 MW) at the Lakeview TGS which were assumed to cease operation by April 30, 2005. Additionally, all potential generation additions listed in Table 2.2 were included in this scenario. Price-responsive demand capability is forecast to be higher under the Planned Resource Scenario, compared to the Existing Resource Scenario. By the end of the 18 month study timeframe, price-responsive demand is forecast to increase to 655 MW, due to continuing increases in the amount of dispatchable load expected to be offered into the IESO-administered markets.

Forecasts of available resources were derived for each of the two resource scenarios described above, using information regarding generator output capabilities, planned outages, allowances for hydroelectric generation production below rated capacity, assumptions for the amount of price-responsive demand, and major transmission interface limitations.

Table 2.3 shows a snapshot of the forecast available resources, under the two scenarios, at the time of the seasonal peak demands over the study period. The installed resources in Table 2.3 start with the values listed in Table 2.1 and are decreased by the size of Lakeview TGS at the end of April 2005. The installed resources in Table 2.3 increase over the study timeframe, due to some increases in the forecast net installed capacity of existing generation facilities. For the Planned Resource Scenario only, resources are also increased by the generation additions of Pickering Unit 1 and the Greater Toronto Airports Authority's new power plant at Pearson International Airport. The total reductions to resources include generator deratings, generator planned outages under each resource scenario, capacity limitations due to transmission interface constraints and allowances for hydroelectric generation production below rated capacity. The total reductions were subtracted and the price-responsive demand was added to the total resources, to obtain the available resources. In this Outlook, price- responsive demand ranges from 264 MW to a maximum of 655 MW under the Planned Resource Scenario, as shown in Table 2.3.

Table 2.3 Summary of Available Resources

Notes	Description \ Year	Summer Peak 2005		Winter Peak 2006		Summer Peak 2006	
		Existing Resource Scenario	Planned Resource Scenario	Existing Resource Scenario	Planned Resource Scenario	Existing Resource Scenario	Planned Resource Scenario
1	Installed Resources (MW)	30,041	30,041	30,066	30,698	30,117	30,749
2	Imports (MW)	0	0	0	0	0	0
3	Total Resources (MW)	30,041	30,041	30,066	30,698	30,117	30,749
4	Total Reductions in Resources (MW)	3,071	3,071	1,288	1,288	1,990	1,990
5	Price-responsive Demand (MW)	264	418	264	562	264	655
6	Available Resources (MW)	27,234	27,388	29,042	29,972	28,391	29,414

Notes to Table 2.3:

1. Installed Resources (MW): This is the total capacity of the generation resources in Ontario assumed to be installed at the time of the summer and winter peaks in the 18 month time span. Initially, this value includes all generators registered to participate in the IESO-administered markets at the beginning of the 18 month period. It also reflects minor unit re-ratings resulting from equipment upgrades that occurred prior to the publication of this Outlook. Only one of the four Pickering A nuclear units is included in the existing installed generation resources. Additional generation capacity that was assumed under the applicable resource scenario is progressively included, according to the estimated in-service dates.

2. Imports (MW): Represents the amount of external capacity considered to be delivered to Ontario.

3. Total Resources (MW): This is the sum of Installed Resources (line 1) and Imports (line 2).

4. Total Reductions in Resources (MW): These reductions represent, under each of the two scenarios, the sum of generator deratings, generator planned outages under each resource scenario, generation limitations due to transmission interface constraints and allowances for hydroelectric generation production below rated capacity.

5. Price-responsive Demand: This is the amount of demand which is assumed to respond to changes in the market clearing price by reducing consumption, under each resource scenario.

6. Available Resources (MW): This equals Total Resources (line 3) minus Total Reductions in Resources (line 4) plus Price-responsive Demand (line 5).

2.4 Energy Production Capability Forecast

The monthly forecast of energy production capability, as provided by market participants, is included in Appendix A, Table A6.

- End of Section -

3.0 Resource Adequacy Assessment

This section provides an assessment of the adequacy of the resources described in Section 2 to meet the forecast demand. The purpose of the two resource scenarios described in Section 2.3 is to present a range of possible outcomes, in recognition of the uncertainty which exists regarding the future availability of resources. The Existing Resource Scenario, which assumes no generation resource additions and a base amount of price-responsive demand, represents the lower boundary of the range, considering the potential for delays to the in-service dates of additional generation capacity, and additional price responsive demand capability. The Planned Resource Scenario assumes additional quantities of price-responsive demand and generation capacity additions based on project status and in-service date estimates. This scenario represents the higher boundary of the outcome range.

Results of the adequacy assessment, as well as an analysis of risk factors, are described in Sections 3.1 through 3.5. Observations, findings and conclusions are provided in Section 5, and detailed tables of results can be found in Appendix A of this document.

3.1 Weekly Adequacy Assessment

The assessment of weekly adequacy takes into consideration a range of forecast demands based on a probability distribution of historical weather data. Reserve Above Requirement levels have been calculated assuming both normal weather (with an allowance for the probability of experiencing extreme weather) and assuming extreme weather (with no further allowance for weather uncertainty). Figure 3.1 shows the normal and extreme weather demands assumed for each week in the study period.

Figure 3.1 Demand Forecast Range

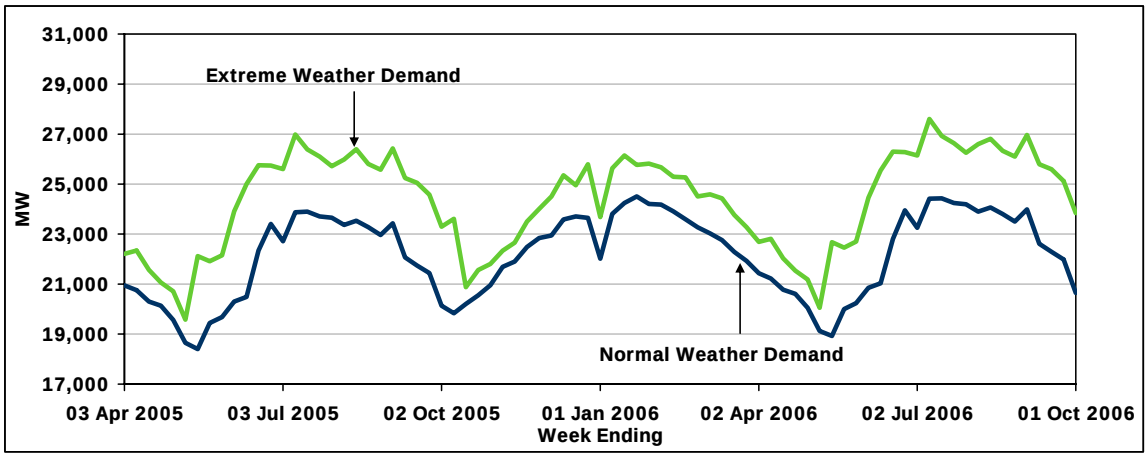


Figure 3.2 shows the Total Reductions in Resources used in the calculation of the Available Resources (as described in Section 2.3).

Figure 3.2 Total Reductions in Resources

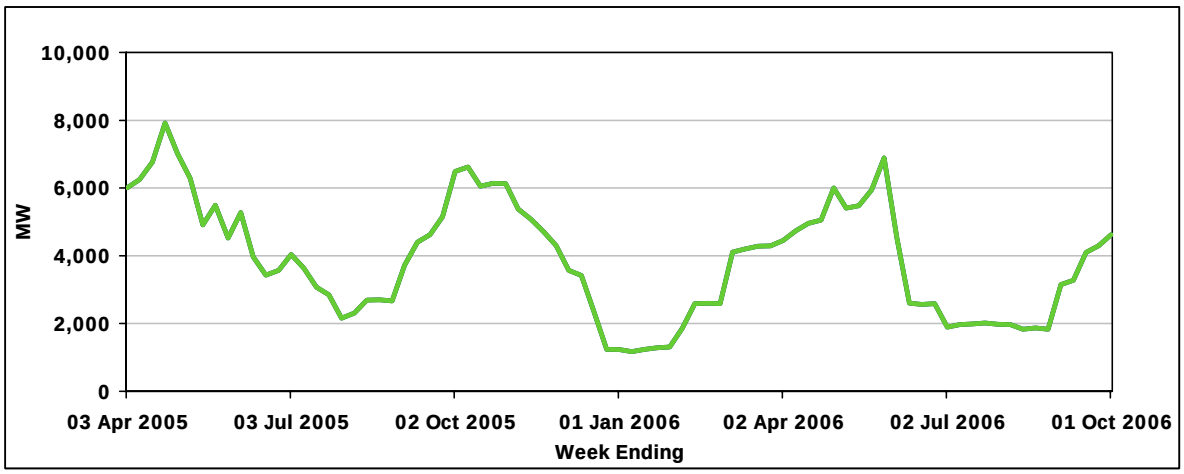


Figure 3.3 provides a comparison between Available Resources, and Required Resources for each week, for the Existing Resource Scenario. The latter quantity is the sum of Demand and Required Reserve, and is based on a probabilistic calculation, which takes into account load forecast uncertainty due to weather and random generator forced outages. Figure 3.4 provides a similar comparison for the Planned Resource Scenario.

Figure 3.3 Available vs. Required Resources: Existing Resource Scenario

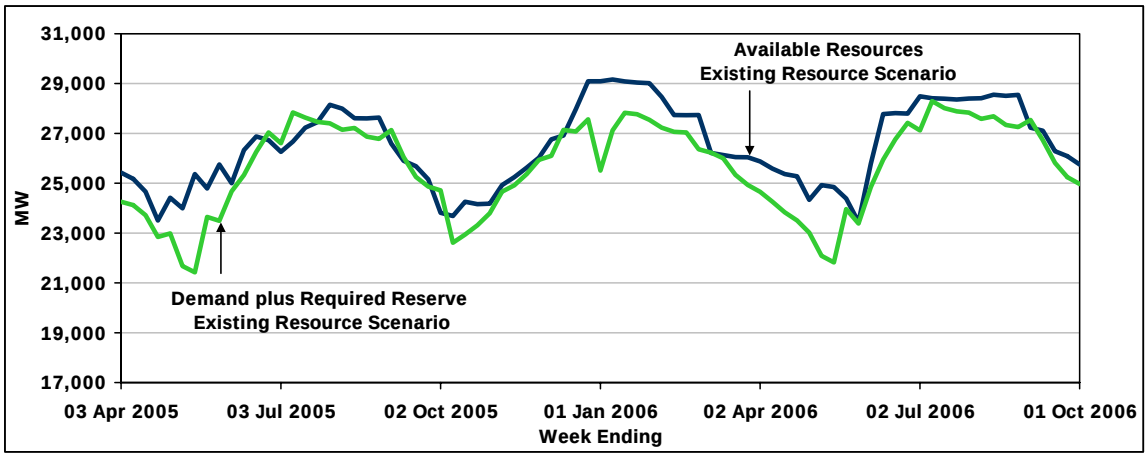
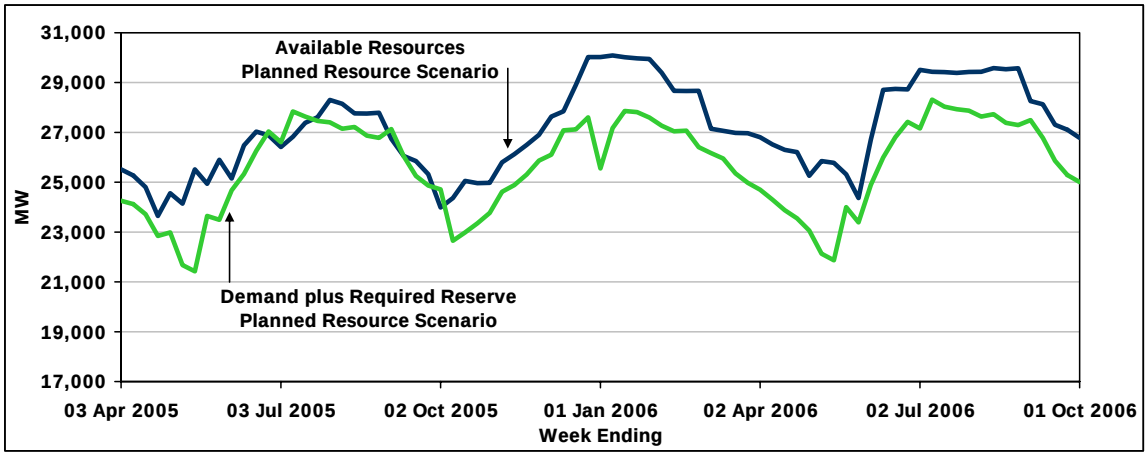
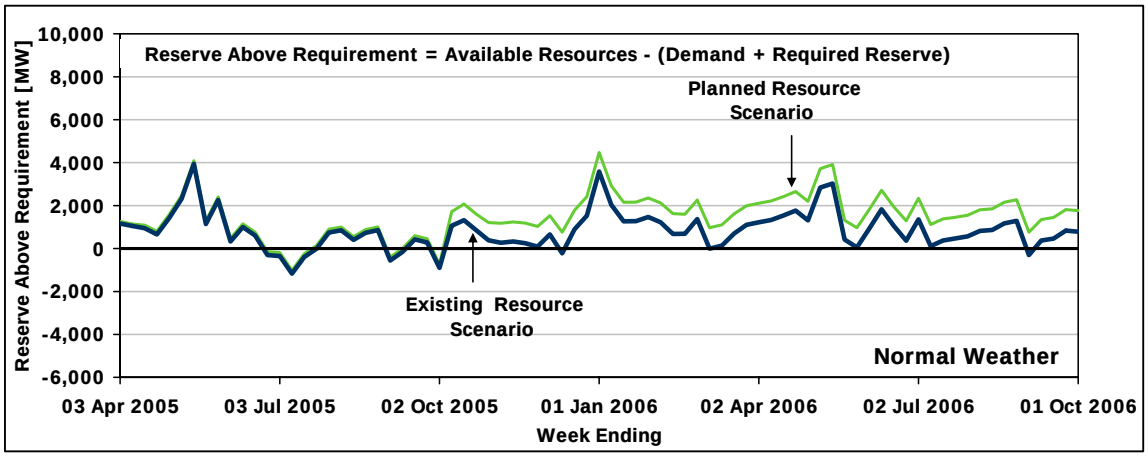


Figure 3.4 Available vs. Required Resources: Planned Resource Scenario



Reserve Above Requirement levels, which represent the difference between Available Resources and Required Resources, are shown in Figure 3.5 for each resource scenario studied.

Figure 3.5 Reserve Above Requirement: Existing Resource Scenario and Planned Resource Scenario



Under the **Existing Resource Scenario**, the forecast reserves are generally adequate for the study period. Reserves are forecast to be below requirements for only eleven weeks of the 18 month study period. During these weeks some planned generator outages are at risk of cancellation or deferral by the IESO for reliability purposes depending on their priority and the resource adequacy situation at the time their outage approval is being sought.

The results above must be assessed considering the risk factors described in Section 3.3 and the probability of this scenario occurring. During most of the study period, a combination of high demand levels under extreme weather conditions and lower than forecast levels of available resources could lead to reliance on imports and upward pressure on the wholesale market prices.

Under the more likely **Planned Resource Scenario**, the resource adequacy situation is improved compared to the Existing Resource Scenario. For all but six weeks of the Outlook timeframe, the forecast available resources exceed the planning requirements. To the extent this scenario

materializes, opportunities will exist for additional planned generator maintenance and exports. Again, the risk factors described in Section 3.3 must be considered.

Figures 3.6 and 3.7 provide a comparison between the forecast Reserve Above Requirement values in the present Outlook and the forecast reserve above requirement values in the previous Outlook published on December 22, 2004. Under both the Existing Resource Scenario and the Planned Resource Scenario, the combined changes in forecast demands, price-responsive demand and generator planned outages yield generally the same resource outlook for the overlapping period when compared to the previous 18-Month Outlook.

Figure 3.6 Reserve Above Requirement: Existing Resource Scenario vs. Previous Existing Resource Scenario

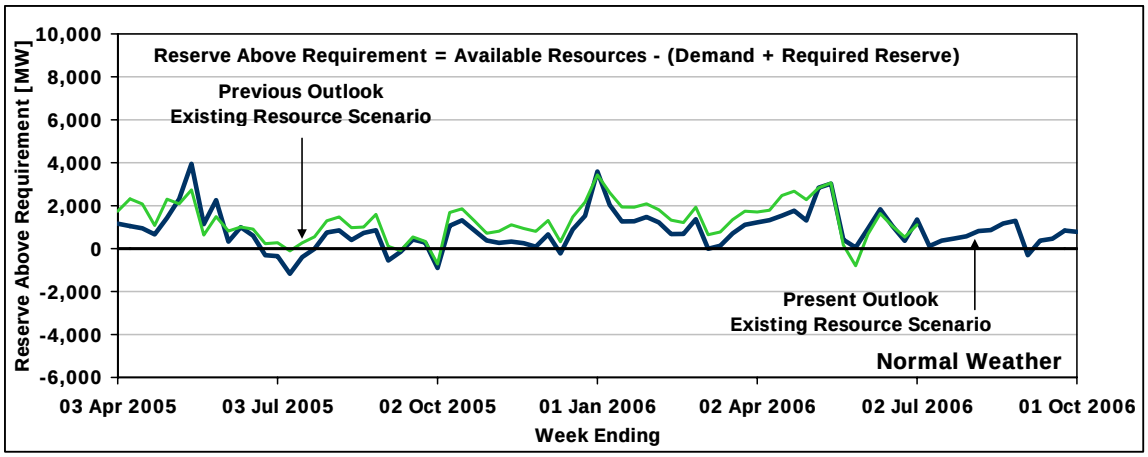
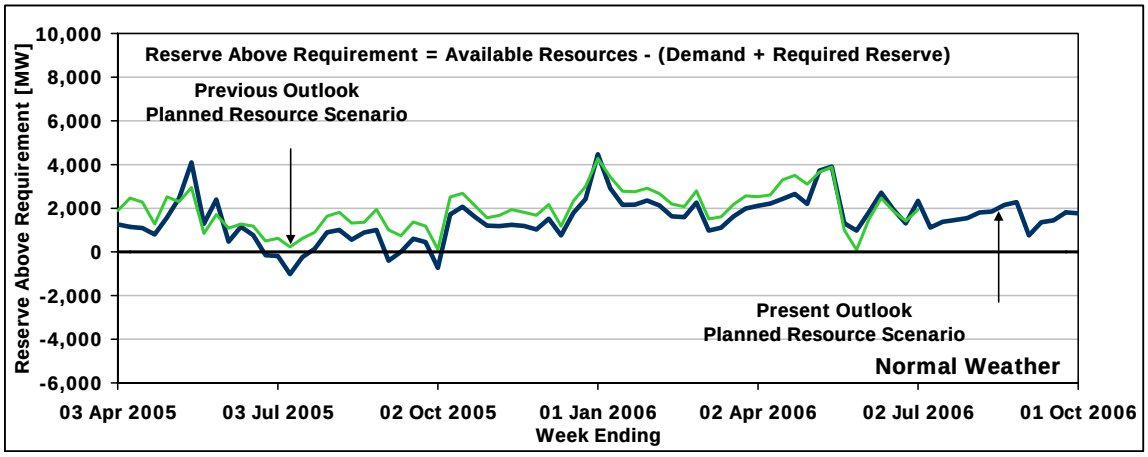


Figure 3.7 Reserve Above Requirement: Planned Resource Scenario vs. Previous Planned Resource Scenario



3.2 Loss of Load Expectation

Loss of Load Expectation (LOLE) simulation results indicate that, in order to achieve the NPCC target LOLE, only a minimal level of additional resources would be required, sufficient to offset the reserve deficiencies under the existing resource scenario shown in Table A1 in Appendix A.

3.3 Resource Adequacy Risks

The forecast reserve levels for both the Existing Resource Scenario and the Planned Resource Scenario should be assessed bearing in mind the risks discussed below. Each of these risks, whether considered alone or in combination with the others, could result in lower than forecast reserve levels and the need for higher levels of imports or curtailment of planned outages.

3.3.1 Extreme Weather

The Existing Resource Scenario and the Planned Resource Scenario are based on the assumption of normal (average) weather. However, peak demands in both summer and winter typically occur during periods of extreme weather. Unfortunately, the occurrence and timing of extreme weather is impossible to accurately forecast far in advance. As a result, the impact of extreme weather is modeled probabilistically in the calculation of the required resources for each week of the study period. The impact of extreme weather was demonstrated in August 2002, when Ontario established an all-time peak demand of 25,414 MW. Approximately 1,700 MW of this demand was due to the higher than average heat and humidity.

In order to illustrate the impact of extreme weather on forecast reserve levels during the Outlook period, both the Existing Resource Scenario and the Planned Resource Scenario were re-calculated assuming extreme weather in each week instead of normal weather. The probability of this occurring in every week is infinitesimally small; however the probability of an occurrence in any given week is greater (about 2.5 percent). When one looks at the summer or winter periods, the expectation of at least one occurrence of extreme weather becomes considerably higher. Results for extreme weather are shown in Figures 3.8, 3.9, and 3.10.

The magnitude of resource deficiencies, under extreme weather, clearly illustrates there are circumstances under which reliance on interconnected supply could occur. This emphasizes the continued need for reliable supply and demand response within Ontario.

Figure 3.8 Available vs. Required Resources: Existing Resource Scenario Extreme Weather Demand

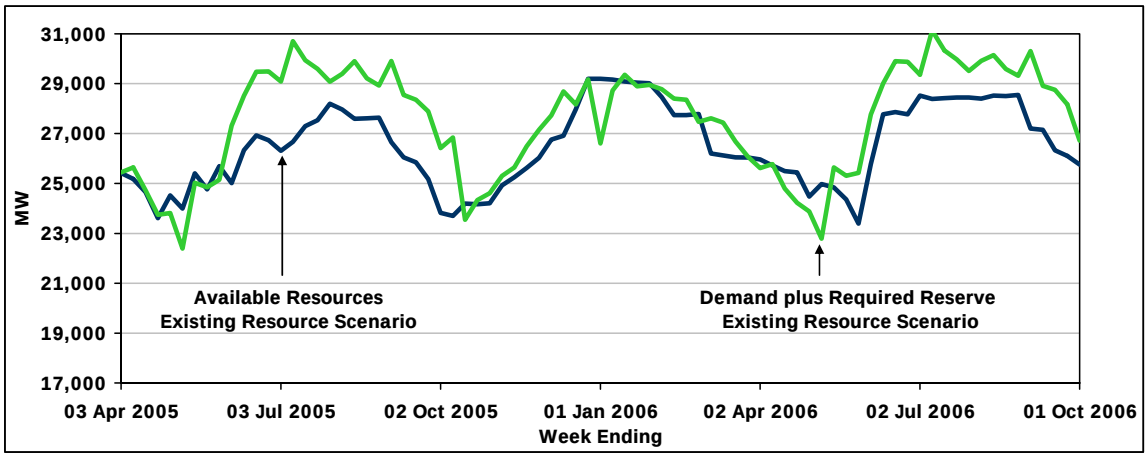


Figure 3.9 Available vs. Required Resources: Planned Resource Scenario Extreme Weather Demand

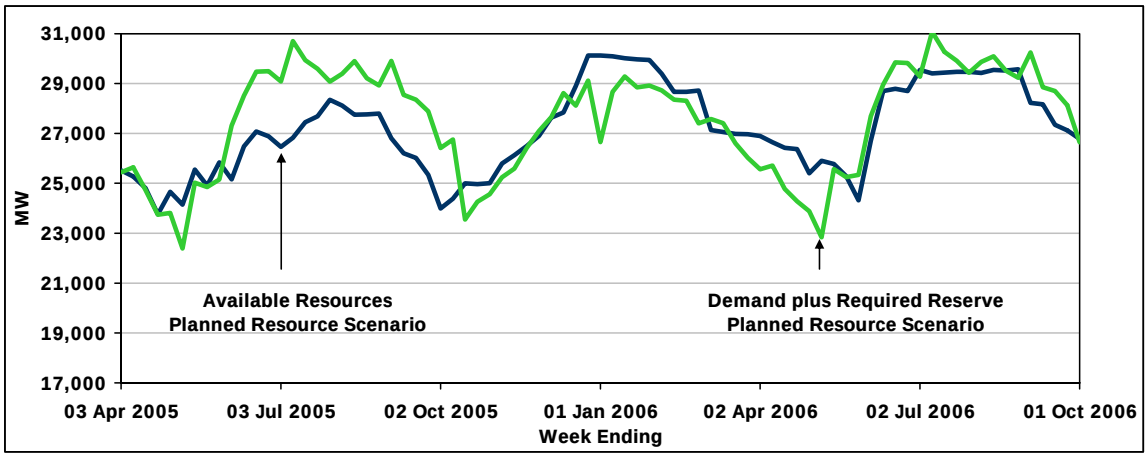
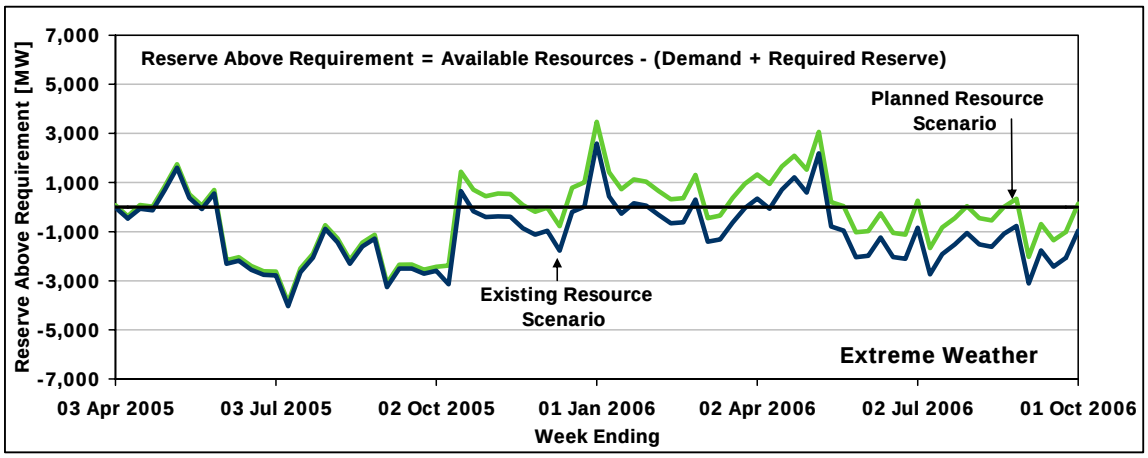


Figure 3.10 Reserve Above Requirement: Existing Resource Scenario and Planned Resource Scenario, Extreme Weather Demand



3.3.2 New Resource Risks

For the 18 month period under study, the improved demand-supply situation for the Planned Resource Scenario is dependent on the additional generation and price-responsive demand coming into service as forecast.

3.3.3 Extensions to Generator Planned Outages

A number of large generating units are scheduled to return to service from outage prior to summer 2005/06 and winter 2006. Meeting these schedules is critical to maintaining adequate reserve levels. Delays in returning generators to service from maintenance outages could lead to reliance on imports.

3.3.4 Higher than Forecast Generator Unavailability

IESO resource adequacy assessments include a probabilistic allowance for random generator forced outages based on generator reliability information provided by market participants, or on

industry-wide data for similar facilities. Along with weather-related demand impacts, the impact of generator forced outages is included in the determination of required resources.

3.3.5 Lower than Forecast Hydroelectric Resources

IESO resource adequacy assessments include forecast amounts of hydroelectric generation provided by market participants. The amount of available hydroelectric generation is greatly influenced both by water-flow conditions on the respective river systems and by the way in which water is utilized.

Water-flow conditions are primarily influenced by the amount of precipitation received. To accurately forecast precipitation amounts far in advance is impossible is little better than chance. Drought conditions over some or all of the study period would lower the amount of generation available from hydroelectric resources.

Experience over the summer of 2002 has also shown that even when sufficient capacity is available, its use can be limited because of a lack of energy due to scheduling decisions. An example of this occurs when peaking hydroelectric generation is operated extensively during the early portion of a week in response to market demands and, as a result, there is insufficient water available in storage reservoirs to support required levels of operation later in the week.

Conditions going into 2005 are improved dramatically from a year ago. Water levels in the Great Lakes are approaching normal, after several years below normal.

3.4 External Resources

An analysis of historical power flows on Ontario's interconnections for the five years prior to 2002 shows that, outside of summer peak demand periods, up to 1,800 MW of external generation resources has typically been available to Ontario. During Ontario's summer peak demand periods of July and August opportunities for imports still exist and imports are still expected to be available despite the fact that many neighbouring systems are often experiencing their peak demand. This is mainly due to the availability of spare capacity from systems that are not summer peaking. From the same analysis, up to 1,400 MW would be expected to be available based on observations during summer peak months in recent years prior to 2002.

The actual hourly import levels experienced from market opening indicates an average import level of about 1,140 MW for all hours. During the hours when Ontario demand exceeded 20,000 MW the average import level was about 1,420 MW. During the hours when Ontario demand exceeded 23,000 MW the average import level was around 2,150 MW, and occasionally reached the Ontario coincident import capability of approximately 4,000 MW.

Future levels of imports into Ontario will vary depending on several factors, including the availability and willingness of resources in external jurisdictions to supply the Ontario market, and the availability of required transmission capacity either within or outside of Ontario.

3.5 Energy Conservation and Peak Reduction through Demand Response

The IESO has been identifying the suitability of demand-side initiatives as part of the supply picture for several years and believes demand reductions and demand shifting should be vigorously pursued in Ontario, as clean and potentially less expensive ways to reduce future

supply requirements. The application of such conservation measures is virtually unrestricted in location.

Programs would improve the supply-demand balance in two main ways:

- Demand reduction through technological or process efficiency improvements would have beneficial effects on the environment and reduce the need for generation capacity additions through years.
- Shifting the time of use from peak to off-peak periods through demand-response programs would achieve peak demand reductions, influencing electricity prices downward and improving utilization rates of generation resources.

- End of Section -

4.0 Transmission Reliability Assessment

This section provides an assessment of the reliability of the Ontario transmission system.

4.1 Transmission Projects

Committed transmission projects, summarized in Appendix B by transmission zone, represent a subset of the transmission projects in the Connection Assessments and Approval queue. Only those projects that have a significant impact and that have an estimated in-service date within the 18 month period under study are listed. To make cross referencing easier, the CAA-ID number of each project has been included. In general, the work listed below represents some or all of the work associated with the CAA-ID.

For example, the IESO SIA Report 2003-099 for the proposed 500/230 kV Parkway Transformer Station initially identified the following work:

1. Establish a new 230 kV switching station at Parkway TS.
2. Extend 230 kV circuits V71R and V75R from Richmond Hill MTS No. 2 to Parkway TS. Install a 230 kV circuit switcher in each circuit between Vaughan MTS No. 1 and Richmond Hill MTS no 1.
3. Terminate three sections of circuits C11R and C12R on to the new 230 kV bus bar at Parkway. These three sections include the section eastwards towards Cherrywood TS, the section westwards towards Richview TS and the section northwards towards Buttonville TS.
4. Equip Parkway TS with two new autotransformers, to be tapped on to C550V and C551V.

The scheduled in-service date for all of this work is now estimated to be by the end of 2005. Since Ontario Regulation 396/01 requires Lakeview to cease burning coal on April 30, 2005, it was determined that transfers through the Claireville auto-transformers could be excessive unless the first of the two auto-transformers at Parkway were installed prior to the expected shut-down of Lakeview GS.

Therefore project 2003-099 was effectively split into two distinct phases, with the installation of the first auto-transformer being scheduled for completion prior to the scheduled shut-down of Lakeview, and the remainder of the work is now scheduled for completion by the end of 2005.

Additional information regarding each the transmission projects in the CAA queue can be found at the IESO's Connection Assessment and Approval web-page, at the following location:

http://www.ieso.ca/imoweb/connAssess/ca.asp.

4.2 Planned Transmission Outages

The principal purpose of the transmission reliability assessment is to forecast any reduction in transmission capacity brought about by specific transmission outages. For a major transmission interface or interconnection, the reduction in transmission capacity due to an outage condition can be expressed as a change in the base flow limit associated with the interface or interconnection. Another purpose of the transmission reliability assessment is to identify the

possibility of any security-related events on the IESO-controlled grid that could require contingency planning by market participants or by the IESO. As a result, the transmission outages are reviewed to identify transmission system reliability concerns and to highlight those outages that should be rescheduled or changed. As an example, a change to an outage may include reducing the scheduled duration or recall time.

The assessment of transmission outages will also identify any resources that are forecast to be constrained due to transmission outage conditions. The identification of a constrained resource is generally not reflected in the assessment of weekly resource adequacy, which is detailed in Section 3.1, since there is typically sufficient outage scheduling flexibility to avoid constraining off resources when such resources are needed for reliability. Transmitters and generators are expected to have a mutual interest in developing an ongoing arrangement to coordinate their outage planning activities. Transmission outages that may affect generation access to the IESO-controlled grid should be coordinated with the generator operators involved, especially at times when the forecast of reserve is deficient. Under the Market Rules, where the scheduling of planned outages by different market participant's conflicts such that both or all outages cannot be approved by the IESO, the IESO will inform the affected market participants and request that they resolve the conflict. If the conflict remains unresolved, the IESO shall determine which of the planned outages can be approved according to the priority of each planned outage as determined by the Market Rules detailed in Chapter 5, Sections 6.4.13 to 6.4.18.

For this Outlook, transmission outage plans submitted to the IESO's Integrated Outage Management System (IOMS) as of the middle of February 2005 were used. Since the previous 18-Month Outlook report, there have been no significant changes to the list of transmission outages that fit the reporting criteria.

The IESO's assessment of the impact of the transmission outage plans is shown in Appendix C, Tables C1 to C10. In these tables, each element is assessed individually by indicating the possible impacts and the reduction in transmission interface and/or interconnection limits. The methodology used to assess the transmission outage plans is described in the IESO document titled "Methodology to Perform Long Term Assessments" (IESO_REP_0266).

None of the transmission outages planned within the timeframe of this Outlook is judged to have a material impact on the overall reliability of the IESO-controlled grid.

The assessment of transmission outages for this Outlook has been limited to those outages with a scheduled duration of greater than five days or to those outages associated with a project where at least one outage has a scheduled duration of greater than five days. The IESO recognize that there are expected to be additional outage requirements and/or changes as time approaches the Outlook study period and that transmission capacity will be impacted by outages with a scheduled duration of five days or less. Prior to approving and releasing an outage, the IESO will reassess the outage for potential system impacts, taking into account all current and forecasted conditions.

4.3 System Voltage, Thermal Limits and Supply Reliability

As in previous Outlooks, low system voltage concerns in certain sub-areas of the province may limit some generation and transmission outages from being planned during summer peak demand periods. The various system voltage concerns are described below.

In the Windsor area, load growth will continue to stress the capability of the existing system under extreme-weather, summer peak conditions, such that voltages are expected to be near the low end of the acceptable range even with most static reactive sources in-service. Planned outages to generating units and/or transmission circuits during peak load conditions with coincident purchases from Michigan will require special control actions to prevent post-contingency thermal overloading of transmission facilities. The special control actions could include the arming of the Windsor overload protection scheme to split the Windsor 115 kV local area and arming of the Kingsville under-voltage load rejection scheme. Splitting the Windsor area will result in some Windsor 115 kV loads being served by a single supply. Avoiding planned outages in this area during peak load conditions is desired. The reactive power supply provided by the ATCO-Brighton Beach generators improves the voltage profile in this area.

When peak demands exceeded 25,000 MW in August 2001 and July, August, and September 2002, pre-contingency voltage levels in the Toronto zone were acceptable but with little margin for contingencies. The reactive requirement to maintain voltage levels at or above the minimum required levels was very high. Most static reactive resources and transmission elements were required in-service and the Lakeview, Pickering and Darlington units had to supply higher than normal amounts of reactive power. The high demand for reactive power left significantly lower than normal reactive margin for contingencies. The performance of these units in providing reactive power to maintain acceptable voltage levels in the Toronto zone during summer peak periods is extremely important. Planned outages and restrictions on the use of the reactive capability of the Pickering and Darlington units should be avoided during the summer of 2005. With Lakeview shutdown in April 2005, reactive support from Nanticoke units will become more important as described in Section 4.3.1. The addition of 125 Mvar, 115 kV shunt capacitors at the Hearn Switching Station and at the Leaside Transformer Station will improve the voltage profile in this area under summer peak conditions.

Under 2002 summer peak conditions, loadings on the 230/115 kV Burlington autotransformers in the Southwest zone were also high. For a contingency involving the loss of one autotransformer, the post-contingency loading on the remaining three autotransformers would have been at levels near the 10-Day Limited Time Ratings. The addition by Hydro One of a 125 Mvar, 115 kV capacitor bank at Burlington TS helps alleviate this concern and will provide additional voltage support in the area.

4.3.1 Impact of Lakeview Thermal Generating Station (TGS) Shutdown

The IESO has been notified by Ontario Power Generation that, in accordance with Ontario Regulation 396/01, the Lakeview TGS will stop producing power by the end of April 2005. The 1,148 MW Lakeview facility currently has four units in service.

A number of generation and transmission proposals have been identified to address potential reliability impacts associated with the shutdown of Lakeview.

These reliability impacts include potential loss of load associated with overloading of transformers at the Claireville Transformer Station, and lower than acceptable voltages in the western portion of the Greater Toronto Area (GTA) during heavy load conditions with all transmission elements in service. These load levels could occur as early as June 2005. The risk to supply reliability increases significantly for contingency conditions or when transmission elements are out of service.

In order to address some of the initial reliability impacts associated with the shutdown of Lakeview TGS, Hydro One are constructing the Parkway Transformer Station, with the first phase of this facility expected to be in service by the spring of 2005. However, this autotransformer will not address the reactive power support required to maintain an acceptable voltage profile throughout the western portion of the GTA.

To help address the voltage support concerns, Hydro One have installed shunt capacitors with a reactive power capability of approximately 800 Mvar at Burlington TS, Richview TS and John TS. In addition a 300 Mvar shunt capacitor bank is to be installed on the 230 kV system at Trafalgar TS by May 2005. These capacitors will address reactive power needs under extreme weather loads with up to four generating units unavailable at Nanticoke TGS, Pickering Nuclear Generating Station (NGS) and Darlington NGS.

It is critical that all of the work above be completed by the beginning of May 2005, to maintain the reliability of the GTA during the summer of 2005. As the summer progresses, the probability of experiencing higher temperatures and higher demands increases, along with the likelihood of requiring all available reactive resources.

In the event that all reactive resources are not available, due to delays or outages, it is considered prudent to have possible control actions ready to be taken, to help maintain the required voltage profile on the high voltage transmission network. Therefore, procedures that would avoid automatic low voltage control are being examined for possible implementation during times when all reactive resources are not available, and peak demands are forecast.

4.4 Michigan Ontario Interface

The new 845 MVA phase angle regulator (PAR), PS4, on 230 kV circuit L4D is now in-service and at neutral tap position. The 230 kV PS51 PAR on circuit L51D is also available and at neutral tap position.

An operational agreement is being negotiated with the Midwest ISO for the operation of the PARs. Until such an agreement is in place PS4 and PS51 will only be operated off neutral tap to prevent shedding firm load.

Due to a forced outage, 230 kV circuit B3N (Scott Transformer Station x Bunce Creek, Michigan) is expected to be unavailable until December 31, 2005. The B3N outage increases the upper capability of the Michigan to Ontario import limit by 200 MW in the summer and by 300 MW in the winter. The Ontario to Michigan export limit decreases by approximately 500 MW in the summer and in the winter. Once the B3N circuit and PAR are returned to service, the previous limits will be restored and all four tie lines will have phase angle control.

- End of Section -

5.0 Overall Observations, Findings and Conclusions

The following findings and conclusions are based on the results of the assessment carried out for this Outlook.

Resource Adequacy

- Under the Existing Resource-Normal Weather Scenario, forecast reserves are generally adequate for the study period. Reserves are forecast to be above requirements for all but eleven weeks of the Outlook timeframe. During these weeks some planned generator outages are at risk of cancellation by the IESO for reliability purposes depending on their priority and the resource adequacy situation at the time their approval is being sought.
- Under the more likely Planned Resource-Normal Weather Scenario, the resource adequacy situation is improved over the Existing Resource Scenario, mainly in the last twelve months of the Outlook period. For all but six weeks of the Outlook timeframe, the forecast available resources exceed the planning requirements. To the extent this scenario materializes, opportunities will exist for additional planned generator maintenance and exports.
- Results of the resource adequacy assessment are summarized in the matrix below. The different shadings are intended to suggest the degree of concern regarding the supply/demand situation under each resource-weather scenario combination.

	Normal Weather Scenario	Extreme Weather Scenario
Existing Resource Scenario	**- opportunities for additional outages/exports exist in many weeks** **- there are eleven weeks when reserves are lower than required (planned outages at risk or imports potentially required)**	**- many planned outages at risk** **- imports required during some peak periods**
Planned Resource Scenario	**- opportunities for additional outages/exports exist in most weeks** **- there are six weeks when reserves are lower than required (planned outages at risk or imports potentially required)**	**- some planned outages at risk** **- imports required during some peak periods**

- The magnitude of resource deficiencies under extreme weather emphasizes the continued need for reliable supply and demand response within Ontario.
- For the 18 month period under study, the improved demand-supply situation for the Planned Resource Scenario is dependent on the additional generation and price-responsive demand coming into the market as forecast. Eight of the 10 new projects from the recent Request for Proposals for Renewable generation are expected to be available within the 18

month timeframe of this Outlook. The return to service of Ontario Power Generation's Pickering Unit 1 is scheduled for the fall of 2005.

- A number of large generating units are scheduled to return to service from outage prior to the summer 2005/06 and winter 2006. Meeting these planned outage schedules is critical to maintaining adequate reserve levels.
- High generator unavailability, whether caused by higher forced outage rates, delays in returning generators to service, could lead to reliance on imports. Under these circumstances, opportunities for planned outages, especially during the peak summer period, would be limited.
- Over the 18 month period under study, the Northeast Power Coordinating Council resource adequacy criterion is expected to be met.

Transmission Adequacy

- Avoiding planned outages and maximizing the reactive capability of the Nanticoke, Pickering and Darlington units, in conjunction with new shunt capacitor banks is required to maintain voltage levels above the minimum required levels in the Toronto zone during summer peak conditions.
- Restricting planned outages to transmission facilities in the Windsor area will assist in maintaining adequate voltage levels during summer peak periods
- Lakeview TGS will cease operations as a coal-fired generating station by April 30, 2005 in accordance with Ontario Regulation 396/01. Adequate transmission plans are being implemented to address the immediate reliability impacts associated with the shutdown of Lakeview TGS.

- End of Section -

Appendix A Resource Adequacy Assessment Details

Table A1 Assessment of Resource Adequacy:
Existing Resource Scenario

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Response MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
03-Apr-05	31,164	6,008	264	25,420	24,256	21.3	4,470	15.8	3,306	1,164
10-Apr-05	31,164	6,251	264	25,177	24,125	21.3	4,417	16.2	3,365	1,052
17-Apr-05	31,164	6,770	264	24,658	23,713	21.4	4,352	16.8	3,407	945
24-Apr-05	31,164	7,924	264	23,504	22,843	16.7	3,369	13.5	2,708	661
01-May-05	31,164	7,014	264	24,414	22,981	24.8	4,843	17.4	3,410	1,433
08-May-05	30,016	6,288	264	23,992	21,676	28.7	5,344	16.2	3,028	2,316
15-May-05	30,016	4,913	264	25,367	21,421	37.9	6,967	16.4	3,021	3,946
22-May-05	30,016	5,489	264	24,791	23,646	27.5	5,342	21.6	4,197	1,145
29-May-05	30,016	4,527	264	25,753	23,495	30.8	6,067	19.4	3,809	2,258
05-Jun-05	30,016	5,277	264	25,003	24,677	23.1	4,697	21.5	4,371	326
12-Jun-05	30,041	3,971	264	26,334	25,330	28.5	5,844	23.6	4,840	1,004
19-Jun-05	30,041	3,431	264	26,874	26,265	20.3	4,530	17.6	3,921	609
26-Jun-05	30,041	3,573	264	26,732	27,037	14.2	3,329	15.5	3,634	-305
03-Jul-05	30,041	4,042	264	26,263	26,607	15.7	3,554	17.2	3,898	-344
10-Jul-05	30,041	3,635	264	26,670	27,842	11.7	2,799	16.6	3,971	-1,172
17-Jul-05	30,041	3,071	264	27,234	27,627	14.0	3,337	15.6	3,730	-393
24-Jul-05	30,041	2,853	264	27,452	27,461	15.8	3,744	15.8	3,753	-9
31-Jul-05	30,041	2,158	264	28,147	27,399	19.0	4,490	15.8	3,742	748
07-Aug-05	30,041	2,312	264	27,993	27,145	19.8	4,629	16.2	3,781	848
14-Aug-05	30,041	2,694	264	27,611	27,213	17.3	4,079	15.6	3,681	398
21-Aug-05	30,041	2,703	264	27,602	26,869	18.6	4,325	15.4	3,592	733
28-Aug-05	30,041	2,671	264	27,634	26,780	20.3	4,670	16.6	3,816	854
04-Sep-05	30,041	3,724	264	26,581	27,133	13.4	3,147	15.8	3,699	-552
11-Sep-05	30,041	4,405	264	25,900	26,049	17.4	3,833	18.1	3,982	-149
18-Sep-05	30,041	4,624	264	25,681	25,253	18.1	3,940	16.2	3,512	428
25-Sep-05	30,041	5,150	264	25,155	24,871	17.3	3,715	16.0	3,431	284
02-Oct-05	30,041	6,490	264	23,815	24,719	18.3	3,682	22.8	4,586	-904
09-Oct-05	30,041	6,621	264	23,684	22,619	19.4	3,846	14.0	2,781	1,065
16-Oct-05	30,041	6,052	264	24,253	22,936	20.0	4,047	13.5	2,730	1,317
23-Oct-05	30,041	6,143	264	24,162	23,314	17.6	3,609	13.4	2,761	848
30-Oct-05	30,041	6,128	264	24,177	23,789	15.4	3,218	13.5	2,830	388
06-Nov-05	30,041	5,382	264	24,923	24,658	14.9	3,228	13.7	2,963	265
13-Nov-05	30,066	5,080	264	25,250	24,917	15.3	3,350	13.8	3,017	333
20-Nov-05	30,066	4,706	264	25,624	25,373	14.0	3,140	12.9	2,889	251
27-Nov-05	30,066	4,303	264	26,027	25,938	14.0	3,186	13.6	3,097	89
04-Dec-05	30,066	3,570	264	26,760	26,102	16.7	3,820	13.8	3,162	658
11-Dec-05	30,066	3,417	264	26,913	27,137	14.1	3,329	15.1	3,553	-224
18-Dec-05	30,066	2,357	264	27,973	27,079	18.0	4,267	14.2	3,373	894
25-Dec-05	30,066	1,240	264	29,090	27,559	23.0	5,441	16.5	3,910	1,531

Note: The reader should be aware that Security and Adequacy Assessments are published on the IESO web site on a weekly and daily basis that progressively supersede information presented in this report.

(Table A1 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Response MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
01-Jan-06	30,066	1,236	264	29,094	25,508	32.2	7,083	15.9	3,497	3,586
08-Jan-06	30,066	1,172	264	29,158	27,124	22.5	5,353	13.9	3,319	2,034
15-Jan-06	30,066	1,243	264	29,087	27,821	20.0	4,842	14.8	3,576	1,266
22-Jan-06	30,066	1,288	264	29,042	27,767	18.5	4,534	13.3	3,259	1,275
29-Jan-06	30,066	1,312	264	29,018	27,549	19.9	4,811	13.8	3,342	1,469
05-Feb-06	30,066	1,870	264	28,460	27,234	17.7	4,283	12.6	3,057	1,226
12-Feb-06	30,066	2,590	264	27,740	27,064	16.0	3,829	13.2	3,153	676
19-Feb-06	30,066	2,600	264	27,730	27,042	17.5	4,134	14.6	3,446	688
26-Feb-06	30,066	2,590	264	27,740	26,364	19.2	4,465	13.3	3,089	1,376
05-Mar-06	30,066	4,111	264	26,219	26,228	13.9	3,191	13.9	3,200	-9
12-Mar-06	30,066	4,201	264	26,129	25,997	14.8	3,372	14.2	3,240	132
19-Mar-06	30,066	4,284	264	26,046	25,341	16.9	3,761	13.7	3,056	705
26-Mar-06	30,066	4,291	264	26,039	24,933	18.7	4,106	13.7	3,000	1,106
02-Apr-06	30,066	4,456	264	25,874	24,653	20.7	4,443	15.0	3,222	1,221
09-Apr-06	30,066	4,745	264	25,585	24,257	20.6	4,363	14.3	3,035	1,328
16-Apr-06	30,066	4,958	264	25,372	23,834	22.2	4,603	14.8	3,065	1,538
23-Apr-06	30,066	5,050	264	25,280	23,509	22.7	4,672	14.1	2,901	1,771
30-Apr-06	30,066	6,002	264	24,328	23,013	21.3	4,276	14.8	2,961	1,315
07-May-06	30,066	5,410	264	24,920	22,081	30.3	5,799	15.5	2,960	2,839
14-May-06	30,066	5,482	264	24,848	21,824	31.3	5,926	15.3	2,902	3,024
21-May-06	30,066	5,948	264	24,382	23,961	21.9	4,387	19.8	3,966	421
28-May-06	30,066	6,890	264	23,440	23,386	15.9	3,207	15.6	3,153	54
04-Jun-06	30,066	4,549	264	25,781	24,848	23.6	4,929	19.2	3,996	933
11-Jun-06	30,117	2,605	264	27,776	25,948	32.1	6,746	23.4	4,918	1,828
18-Jun-06	30,117	2,567	264	27,814	26,762	22.0	5,010	17.4	3,958	1,052
25-Jun-06	30,117	2,588	264	27,793	27,423	16.1	3,850	14.5	3,480	370
02-Jul-06	30,117	1,899	264	28,482	27,122	22.5	5,232	16.7	3,872	1,360
09-Jul-06	30,117	1,971	264	28,410	28,295	16.4	3,998	15.9	3,883	115
16-Jul-06	30,117	1,990	264	28,391	28,012	16.2	3,959	14.7	3,580	379
23-Jul-06	30,117	2,019	264	28,362	27,886	17.0	4,119	15.0	3,643	476
30-Jul-06	30,117	1,980	264	28,401	27,830	17.4	4,210	15.0	3,639	571
06-Aug-06	30,117	1,972	264	28,409	27,586	18.9	4,510	15.4	3,687	823
13-Aug-06	30,117	1,830	264	28,551	27,687	18.7	4,491	15.1	3,627	864
20-Aug-06	30,117	1,871	264	28,510	27,340	19.8	4,706	14.9	3,536	1,170
27-Aug-06	30,117	1,834	264	28,547	27,251	21.5	5,047	16.0	3,751	1,296
03-Sep-06	30,117	3,152	264	27,229	27,535	13.5	3,247	14.8	3,553	-306
10-Sep-06	30,117	3,277	264	27,104	26,733	19.9	4,491	18.2	4,120	371
17-Sep-06	30,117	4,098	264	26,283	25,816	17.9	3,994	15.8	3,527	467
24-Sep-06	30,117	4,296	264	26,085	25,250	18.7	4,101	14.9	3,266	835
01-Oct-06	30,117	4,626	264	25,755	24,966	24.7	5,107	20.9	4,318	789

Table A2 Assessment of Resource Adequacy:
Planned Resource Scenario

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Response MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
03-Apr-05	31,164	6,008	359	25,515	24,256	21.8	4,565	15.8	3,306	1,259
10-Apr-05	31,164	6,251	359	25,272	24,125	21.7	4,512	16.2	3,365	1,147
17-Apr-05	31,164	6,770	409	24,803	23,713	22.2	4,497	16.8	3,407	1,090
24-Apr-05	31,164	7,924	409	23,649	22,843	17.5	3,514	13.5	2,708	806
01-May-05	31,164	7,014	409	24,559	22,981	25.5	4,988	17.4	3,410	1,578
08-May-05	30,016	6,288	409	24,137	21,676	29.4	5,489	16.2	3,028	2,461
15-May-05	30,016	4,913	409	25,512	21,421	38.7	7,112	16.4	3,021	4,091
22-May-05	30,016	5,489	409	24,936	23,646	28.2	5,487	21.6	4,197	1,290
29-May-05	30,016	4,527	409	25,898	23,495	31.6	6,212	19.4	3,809	2,403
05-Jun-05	30,016	5,277	409	25,148	24,677	23.9	4,842	21.5	4,371	471
12-Jun-05	30,041	3,971	409	26,479	25,330	29.2	5,989	23.6	4,840	1,149
19-Jun-05	30,041	3,431	418	27,028	26,265	21.0	4,684	17.6	3,921	763
26-Jun-05	30,041	3,573	418	26,886	27,037	14.9	3,483	15.5	3,634	-151
03-Jul-05	30,041	4,042	418	26,417	26,607	16.3	3,708	17.2	3,898	-190
10-Jul-05	30,041	3,635	418	26,824	27,842	12.4	2,953	16.6	3,971	-1,018
17-Jul-05	30,041	3,071	418	27,388	27,627	14.6	3,491	15.6	3,730	-239
24-Jul-05	30,041	2,853	418	27,606	27,461	16.4	3,898	15.8	3,753	145
31-Jul-05	30,041	2,158	418	28,301	27,399	19.6	4,644	15.8	3,742	902
07-Aug-05	30,041	2,312	418	28,147	27,145	20.5	4,783	16.2	3,781	1,002
14-Aug-05	30,041	2,694	418	27,765	27,213	18.0	4,233	15.6	3,681	552
21-Aug-05	30,041	2,703	418	27,756	26,869	19.2	4,479	15.4	3,592	887
28-Aug-05	30,041	2,671	418	27,788	26,780	21.0	4,824	16.6	3,816	1,008
04-Sep-05	30,041	3,724	418	26,735	27,133	14.1	3,301	15.8	3,699	-398
11-Sep-05	30,041	4,405	418	26,054	26,049	18.1	3,987	18.1	3,982	5
18-Sep-05	30,041	4,624	432	25,849	25,253	18.9	4,108	16.2	3,512	596
25-Sep-05	30,041	5,150	432	25,323	24,871	18.1	3,883	16.0	3,431	452
02-Oct-05	30,041	6,490	432	23,983	24,719	19.1	3,850	22.8	4,586	-736
09-Oct-05	30,556	6,621	432	24,367	22,653	22.8	4,529	14.2	2,815	1,714
16-Oct-05	30,673	6,052	432	25,053	22,983	24.0	4,847	13.7	2,777	2,070
23-Oct-05	30,673	6,143	432	24,962	23,354	21.5	4,409	13.6	2,801	1,608
30-Oct-05	30,673	6,128	432	24,977	23,769	19.2	4,018	13.4	2,810	1,208
06-Nov-05	30,673	5,382	506	25,797	24,614	18.9	4,102	13.5	2,919	1,183
13-Nov-05	30,698	5,080	506	26,124	24,884	19.3	4,224	13.6	2,984	1,240
20-Nov-05	30,698	4,706	506	26,498	25,307	17.9	4,014	12.6	2,823	1,191
27-Nov-05	30,698	4,303	506	26,901	25,873	17.8	4,060	13.3	3,032	1,028
04-Dec-05	30,698	3,570	506	27,634	26,108	20.5	4,694	13.8	3,168	1,526
11-Dec-05	30,698	3,417	562	27,843	27,082	18.1	4,259	14.8	3,498	761
18-Dec-05	30,698	2,357	562	28,903	27,120	21.9	5,197	14.4	3,414	1,783
25-Dec-05	30,698	1,240	562	30,020	27,602	26.9	6,371	16.7	3,953	2,418

Note: The reader should be aware that Security and Adequacy Assessments are published on the IESO web site on a weekly and daily basis that progressively supersede information presented in this report.

(Table A2 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Response MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
01-Jan-06	30,698	1,236	562	30,024	25,552	36.4	8,013	16.1	3,541	4,472
08-Jan-06	30,698	1,172	562	30,088	27,169	26.4	6,283	14.1	3,364	2,919
15-Jan-06	30,698	1,243	562	30,017	27,865	23.8	5,772	14.9	3,620	2,152
22-Jan-06	30,698	1,288	562	29,972	27,812	22.3	5,464	13.5	3,304	2,160
29-Jan-06	30,698	1,312	562	29,948	27,593	23.7	5,741	14.0	3,386	2,355
05-Feb-06	30,698	1,870	562	29,390	27,267	21.6	5,213	12.8	3,090	2,123
12-Feb-06	30,698	2,590	562	28,670	27,044	19.9	4,759	13.1	3,133	1,626
19-Feb-06	30,698	2,600	562	28,660	27,066	21.5	5,064	14.7	3,470	1,594
26-Feb-06	30,698	2,590	562	28,670	26,409	23.2	5,395	13.5	3,134	2,261
05-Mar-06	30,698	4,111	562	27,149	26,173	17.9	4,121	13.7	3,145	976
12-Mar-06	30,698	4,201	562	27,059	25,954	18.9	4,302	14.1	3,197	1,105
19-Mar-06	30,698	4,284	562	26,976	25,357	21.1	4,691	13.8	3,072	1,619
26-Mar-06	30,698	4,291	562	26,969	24,979	23.0	5,036	13.9	3,046	1,990
02-Apr-06	30,698	4,456	562	26,804	24,698	25.1	5,373	15.2	3,267	2,106
09-Apr-06	30,698	4,745	562	26,515	24,303	24.9	5,293	14.5	3,081	2,212
16-Apr-06	30,698	4,958	562	26,302	23,879	26.6	5,533	15.0	3,110	2,423
23-Apr-06	30,698	5,050	562	26,210	23,555	27.2	5,602	14.3	2,947	2,655
30-Apr-06	30,698	6,002	562	25,258	23,059	26.0	5,206	15.0	3,007	2,199
07-May-06	30,698	5,410	562	25,850	22,127	35.2	6,729	15.7	3,006	3,723
14-May-06	30,698	5,482	562	25,778	21,871	36.2	6,856	15.6	2,949	3,907
21-May-06	30,698	5,948	562	25,312	24,003	26.6	5,317	20.1	4,008	1,309
28-May-06	30,698	6,890	562	24,370	23,395	20.5	4,137	15.6	3,162	975
04-Jun-06	30,698	4,549	562	26,711	24,891	28.1	5,859	19.4	4,039	1,820
11-Jun-06	30,749	2,605	562	28,706	25,989	36.5	7,676	23.6	4,959	2,717
18-Jun-06	30,749	2,567	562	28,744	26,805	26.1	5,940	17.6	4,001	1,939
25-Jun-06	30,749	2,588	562	28,723	27,424	20.0	4,780	14.5	3,481	1,299
02-Jul-06	30,749	1,899	655	29,505	27,165	26.9	6,255	16.8	3,915	2,340
09-Jul-06	30,749	1,971	655	29,433	28,317	20.6	5,021	16.0	3,905	1,116
16-Jul-06	30,749	1,990	655	29,414	28,031	20.4	4,982	14.7	3,599	1,383
23-Jul-06	30,749	2,019	655	29,385	27,929	21.2	5,142	15.2	3,686	1,456
30-Jul-06	30,749	1,980	655	29,424	27,873	21.6	5,233	15.2	3,682	1,551
06-Aug-06	30,749	1,972	655	29,432	27,630	23.2	5,533	15.6	3,731	1,802
13-Aug-06	30,749	1,830	655	29,574	27,730	22.9	5,514	15.3	3,670	1,844
20-Aug-06	30,749	1,871	655	29,533	27,384	24.1	5,729	15.0	3,580	2,149
27-Aug-06	30,749	1,834	655	29,570	27,294	25.8	6,070	16.1	3,794	2,276
03-Sep-06	30,749	3,152	655	28,252	27,490	17.8	4,270	14.6	3,508	762
10-Sep-06	30,749	3,277	655	28,127	26,775	24.4	5,514	18.4	4,162	1,352
17-Sep-06	30,749	4,098	655	27,306	25,860	22.5	5,017	16.0	3,571	1,446
24-Sep-06	30,749	4,296	655	27,108	25,293	23.3	5,124	15.1	3,309	1,815
01-Oct-06	30,749	4,626	655	26,778	25,008	29.7	6,130	21.1	4,360	1,770

Table A3 Demand Forecast Range For Required Resources Calculation

Week Ending Day	Ontario Demand Normal Weather MW	Ontario Demand Extreme Weather MW
03-Apr-05	20950	22206
10-Apr-05	20760	22346
17-Apr-05	20306	21567
24-Apr-05	20135	21064
01-May-05	19571	20713
08-May-05	18648	19574
15-May-05	18400	22124
22-May-05	19449	21913
29-May-05	19686	22156
05-Jun-05	20306	23908
12-Jun-05	20490	24993
19-Jun-05	22344	25753
26-Jun-05	23403	25737
03-Jul-05	22709	25602
10-Jul-05	23871	26981
17-Jul-05	23897	26382
24-Jul-05	23708	26104
31-Jul-05	23657	25718
07-Aug-05	23364	25982
14-Aug-05	23532	26395
21-Aug-05	23277	25800
28-Aug-05	22964	25575
04-Sep-05	23434	26419
11-Sep-05	22067	25243
18-Sep-05	21741	25047
25-Sep-05	21440	24572
02-Oct-05	20133	23296
09-Oct-05	19838	23609
16-Oct-05	20206	20879
23-Oct-05	20553	21565
30-Oct-05	20959	21806
06-Nov-05	21695	22340
13-Nov-05	21900	22662
20-Nov-05	22484	23498
27-Nov-05	22841	24007
04-Dec-05	22940	24506
11-Dec-05	23584	25346
18-Dec-05	23706	24954
25-Dec-05	23649	25791

(Table A3 continued)

Week Ending Day	Ontario Demand Normal Weather MW	Ontario Demand Extreme Weather MW
01-Jan-06	22011	23681
08-Jan-06	23805	25636
15-Jan-06	24245	26143
22-Jan-06	24508	25765
29-Jan-06	24207	25819
05-Feb-06	24177	25673
12-Feb-06	23911	25299
19-Feb-06	23596	25262
26-Feb-06	23275	24503
05-Mar-06	23028	24589
12-Mar-06	22757	24431
19-Mar-06	22285	23765
26-Mar-06	21933	23281
02-Apr-06	21431	22687
09-Apr-06	21222	22808
16-Apr-06	20769	22027
23-Apr-06	20608	21536
30-Apr-06	20052	21186
07-May-06	19121	20055
14-May-06	18922	22671
21-May-06	19995	22459
28-May-06	20233	22703
04-Jun-06	20852	24456
11-Jun-06	21030	25541
18-Jun-06	22804	26301
25-Jun-06	23943	26277
02-Jul-06	23250	26143
09-Jul-06	24412	27604
16-Jul-06	24432	26924
23-Jul-06	24243	26639
30-Jul-06	24191	26254
06-Aug-06	23899	26599
13-Aug-06	24060	26805
20-Aug-06	23804	26327
27-Aug-06	23500	26103
03-Sep-06	23982	26957
10-Sep-06	22613	25791
17-Sep-06	22289	25595
24-Sep-06	21984	25116
01-Oct-06	20648	23840

Table A4 Assessment of Resource Adequacy: Extreme Weather, Existing Resource Scenario

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Response MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
03-Apr-05	31,164	6,008	264	25,420	25,440	14.5	3,214	14.6	3,234	-20
10-Apr-05	31,164	6,251	264	25,177	25,642	12.7	2,831	14.8	3,296	-465
17-Apr-05	31,164	6,770	264	24,658	24,723	14.3	3,091	14.6	3,156	-65
24-Apr-05	31,164	7,815	264	23,613	23,742	12.1	2,549	12.7	2,678	-129
01-May-05	31,164	6,912	264	24,516	23,815	18.4	3,803	15.0	3,102	701
08-May-05	30,016	6,285	264	23,995	22,392	22.6	4,421	14.4	2,818	1,603
15-May-05	30,016	4,879	264	25,401	25,027	14.8	3,277	13.1	2,903	374
22-May-05	30,016	5,512	264	24,768	24,850	13.0	2,855	13.4	2,937	-82
29-May-05	30,016	4,581	264	25,699	25,148	16.0	3,543	13.5	2,992	551
05-Jun-05	30,016	5,271	264	25,009	27,320	4.6	1,101	14.3	3,412	-2,311
12-Jun-05	30,041	3,973	264	26,332	28,517	5.4	1,339	14.1	3,524	-2,185
19-Jun-05	30,041	3,378	264	26,927	29,481	4.6	1,174	14.5	3,728	-2,554
26-Jun-05	30,041	3,573	264	26,732	29,495	3.9	995	14.6	3,758	-2,763
03-Jul-05	30,041	3,998	264	26,307	29,088	2.8	705	13.6	3,486	-2,781
10-Jul-05	30,041	3,633	264	26,672	30,702	-1.2	-309	13.8	3,721	-4,030
17-Jul-05	30,041	3,013	264	27,292	29,939	3.5	910	13.5	3,557	-2,647
24-Jul-05	30,041	2,772	264	27,533	29,592	5.5	1,429	13.4	3,488	-2,059
31-Jul-05	30,041	2,114	264	28,191	29,080	9.6	2,473	13.1	3,362	-889
07-Aug-05	30,041	2,342	264	27,963	29,395	7.6	1,981	13.1	3,413	-1,432
14-Aug-05	30,041	2,714	264	27,591	29,898	4.5	1,196	13.3	3,503	-2,307
21-Aug-05	30,041	2,696	264	27,609	29,214	7.0	1,809	13.2	3,414	-1,605
28-Aug-05	30,041	2,664	264	27,641	28,924	8.1	2,066	13.1	3,349	-1,283
04-Sep-05	30,041	3,651	264	26,654	29,912	0.9	235	13.2	3,493	-3,258
11-Sep-05	30,041	4,256	264	26,049	28,551	3.2	806	13.1	3,308	-2,502
18-Sep-05	30,041	4,455	264	25,850	28,354	3.2	803	13.2	3,307	-2,504
25-Sep-05	30,041	5,135	264	25,170	27,885	2.4	598	13.5	3,313	-2,715
02-Oct-05	30,041	6,487	264	23,818	26,417	2.2	522	13.4	3,121	-2,599
09-Oct-05	30,041	6,607	264	23,698	26,837	0.4	89	13.7	3,228	-3,139
16-Oct-05	30,041	6,111	264	24,194	23,539	15.9	3,315	12.7	2,660	655
23-Oct-05	30,041	6,143	264	24,162	24,332	12.0	2,597	12.8	2,767	-170
30-Oct-05	30,041	6,101	264	24,204	24,609	11.0	2,398	12.9	2,803	-405
06-Nov-05	30,041	5,382	264	24,923	25,303	11.6	2,583	13.3	2,963	-380
13-Nov-05	30,066	5,080	264	25,250	25,642	11.4	2,588	13.2	2,980	-392
20-Nov-05	30,066	4,706	264	25,624	26,489	9.1	2,126	12.7	2,991	-865
27-Nov-05	30,066	4,303	264	26,027	27,149	8.4	2,020	13.1	3,142	-1,122
04-Dec-05	30,066	3,570	264	26,760	27,726	9.2	2,254	13.1	3,220	-966
11-Dec-05	30,066	3,417	264	26,913	28,688	6.2	1,567	13.2	3,342	-1,775
18-Dec-05	30,066	2,357	264	27,973	28,169	12.1	3,019	12.9	3,215	-196
25-Dec-05	30,066	1,136	264	29,194	29,173	13.2	3,403	13.1	3,382	21

(Table A4 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Response MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
01-Jan-06	30,066	1,136	264	29,194	26,606	23.3	5,513	12.4	2,925	2,588
08-Jan-06	30,066	1,169	264	29,161	28,727	13.8	3,525	12.1	3,091	434
15-Jan-06	30,066	1,243	264	29,087	29,358	11.3	2,944	12.3	3,215	-271
22-Jan-06	30,066	1,288	264	29,042	28,890	12.7	3,277	12.1	3,125	152
29-Jan-06	30,066	1,312	264	29,018	28,958	12.4	3,199	12.2	3,139	60
05-Feb-06	30,066	1,870	264	28,460	28,780	10.9	2,787	12.1	3,107	-320
12-Feb-06	30,066	2,590	264	27,740	28,401	9.7	2,441	12.3	3,102	-661
19-Feb-06	30,066	2,590	264	27,740	28,359	9.8	2,478	12.3	3,097	-619
26-Feb-06	30,066	2,546	264	27,784	27,474	13.4	3,281	12.1	2,971	310
05-Mar-06	30,066	4,130	264	26,200	27,613	6.6	1,611	12.3	3,024	-1,413
12-Mar-06	30,066	4,201	264	26,129	27,443	7.0	1,698	12.3	3,012	-1,314
19-Mar-06	30,066	4,284	264	26,046	26,680	9.6	2,281	12.3	2,915	-634
26-Mar-06	30,066	4,291	264	26,039	26,082	11.9	2,758	12.0	2,801	-43
02-Apr-06	30,066	4,367	264	25,963	25,616	14.4	3,276	12.9	2,929	347
09-Apr-06	30,066	4,611	264	25,719	25,783	12.8	2,911	13.0	2,975	-64
16-Apr-06	30,066	4,834	264	25,496	24,792	15.8	3,469	12.6	2,765	704
23-Apr-06	30,066	4,890	264	25,440	24,225	18.1	3,904	12.5	2,689	1,215
30-Apr-06	30,066	5,854	264	24,476	23,883	15.5	3,290	12.7	2,697	593
07-May-06	30,066	5,355	264	24,975	22,786	24.5	4,920	13.6	2,731	2,189
14-May-06	30,066	5,487	264	24,843	25,639	9.6	2,172	13.1	2,968	-796
21-May-06	30,066	5,975	264	24,355	25,308	8.4	1,896	12.7	2,849	-953
28-May-06	30,066	6,944	264	23,386	25,427	3.0	683	12.0	2,724	-2,041
04-Jun-06	30,066	4,548	264	25,782	27,764	5.4	1,326	13.5	3,308	-1,982
11-Jun-06	30,117	2,610	264	27,771	29,010	8.7	2,230	13.6	3,469	-1,239
18-Jun-06	30,117	2,515	264	27,866	29,898	6.0	1,565	13.7	3,597	-2,032
25-Jun-06	30,117	2,608	264	27,773	29,878	5.7	1,496	13.7	3,601	-2,105
02-Jul-06	30,117	1,857	264	28,524	29,366	9.1	2,381	12.3	3,223	-842
09-Jul-06	30,117	1,992	264	28,389	31,128	2.8	785	12.8	3,524	-2,739
16-Jul-06	30,117	1,964	264	28,417	30,331	5.6	1,493	12.7	3,407	-1,914
23-Jul-06	30,117	1,933	264	28,448	29,967	6.8	1,809	12.5	3,328	-1,519
30-Jul-06	30,117	1,933	264	28,448	29,508	8.4	2,194	12.4	3,254	-1,060
06-Aug-06	30,117	1,982	264	28,399	29,919	6.8	1,800	12.5	3,320	-1,520
13-Aug-06	30,117	1,857	264	28,524	30,147	6.4	1,719	12.5	3,342	-1,623
20-Aug-06	30,117	1,880	264	28,501	29,584	8.3	2,174	12.4	3,257	-1,083
27-Aug-06	30,117	1,834	264	28,547	29,313	9.4	2,444	12.3	3,210	-766
03-Sep-06	30,117	3,181	264	27,200	30,311	0.9	243	12.4	3,354	-3,111
10-Sep-06	30,117	3,235	264	27,146	28,916	5.3	1,355	12.1	3,125	-1,770
17-Sep-06	30,117	4,055	264	26,326	28,753	2.9	731	12.3	3,158	-2,427
24-Sep-06	30,117	4,278	264	26,103	28,171	3.9	987	12.2	3,055	-2,068
01-Oct-06	30,117	4,623	264	25,758	26,714	8.1	1,918	12.1	2,874	-956

Table A5 Assessment of Resource Adequacy: Extreme Weather,
Planned Resource Scenario

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Response MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
03-Apr-05	31,164	6,008	359	25,515	25,440	14.9	3,309	14.6	3,234	75
10-Apr-05	31,164	6,251	359	25,272	25,642	13.1	2,926	14.8	3,296	-370
17-Apr-05	31,164	6,770	409	24,803	24,723	15.0	3,236	14.6	3,156	80
24-Apr-05	31,164	7,815	409	23,758	23,742	12.8	2,694	12.7	2,678	16
01-May-05	31,164	6,912	409	24,661	23,815	19.1	3,948	15.0	3,102	846
08-May-05	30,016	6,285	409	24,140	22,392	23.3	4,566	14.4	2,818	1,748
15-May-05	30,016	4,879	409	25,546	25,027	15.5	3,422	13.1	2,903	519
22-May-05	30,016	5,512	409	24,913	24,850	13.7	3,000	13.4	2,937	63
29-May-05	30,016	4,581	409	25,844	25,148	16.7	3,688	13.5	2,992	696
05-Jun-05	30,016	5,271	409	25,154	27,320	5.2	1,246	14.3	3,412	-2,166
12-Jun-05	30,041	3,973	409	26,477	28,517	5.9	1,484	14.1	3,524	-2,040
19-Jun-05	30,041	3,378	418	27,081	29,481	5.2	1,328	14.5	3,728	-2,400
26-Jun-05	30,041	3,573	418	26,886	29,495	4.5	1,149	14.6	3,758	-2,609
03-Jul-05	30,041	3,998	418	26,461	29,088	3.4	859	13.6	3,486	-2,627
10-Jul-05	30,041	3,633	418	26,826	30,702	-0.6	-155	13.8	3,721	-3,876
17-Jul-05	30,041	3,013	418	27,446	29,939	4.0	1,064	13.5	3,557	-2,493
24-Jul-05	30,041	2,772	418	27,687	29,592	6.1	1,583	13.4	3,488	-1,905
31-Jul-05	30,041	2,114	418	28,345	29,080	10.2	2,627	13.1	3,362	-735
07-Aug-05	30,041	2,342	418	28,117	29,395	8.2	2,135	13.1	3,413	-1,278
14-Aug-05	30,041	2,714	418	27,745	29,898	5.1	1,350	13.3	3,503	-2,153
21-Aug-05	30,041	2,696	418	27,763	29,214	7.6	1,963	13.2	3,414	-1,451
28-Aug-05	30,041	2,664	418	27,795	28,924	8.7	2,220	13.1	3,349	-1,129
04-Sep-05	30,041	3,651	418	26,808	29,912	1.5	389	13.2	3,493	-3,104
11-Sep-05	30,041	4,256	418	26,203	28,551	3.8	960	13.1	3,308	-2,348
18-Sep-05	30,041	4,455	432	26,018	28,354	3.9	971	13.2	3,307	-2,336
25-Sep-05	30,041	5,135	432	25,338	27,885	3.1	766	13.5	3,313	-2,547
02-Oct-05	30,041	6,487	432	23,986	26,417	3.0	690	13.4	3,121	-2,431
09-Oct-05	30,556	6,607	432	24,381	26,760	3.3	772	13.4	3,151	-2,379
16-Oct-05	30,673	6,111	432	24,994	23,550	19.7	4,115	12.8	2,671	1,444
23-Oct-05	30,673	6,143	432	24,962	24,259	15.8	3,397	12.5	2,694	703
30-Oct-05	30,673	6,101	432	25,004	24,562	14.7	3,198	12.6	2,756	442
06-Nov-05	30,673	5,382	506	25,797	25,243	15.5	3,457	13.0	2,903	554
13-Nov-05	30,698	5,080	506	26,124	25,587	15.3	3,462	12.9	2,925	537
20-Nov-05	30,698	4,706	506	26,498	26,419	12.8	3,000	12.4	2,921	79
27-Nov-05	30,698	4,303	506	26,901	27,095	12.1	2,894	12.9	3,088	-194
04-Dec-05	30,698	3,570	506	27,634	27,653	12.8	3,128	12.8	3,147	-19
11-Dec-05	30,698	3,417	562	27,843	28,617	9.9	2,497	12.9	3,271	-774
18-Dec-05	30,698	2,357	562	28,903	28,119	15.8	3,949	12.7	3,165	784
25-Dec-05	30,698	1,136	562	30,124	29,115	16.8	4,333	12.9	3,324	1,009

(Table A5 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Response MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
01-Jan-06	30,698	1,136	562	30,124	26,653	27.2	6,443	12.6	2,972	3,471
08-Jan-06	30,698	1,169	562	30,091	28,674	17.4	4,455	11.9	3,038	1,417
15-Jan-06	30,698	1,243	562	30,017	29,287	14.8	3,874	12.0	3,144	730
22-Jan-06	30,698	1,288	562	29,972	28,845	16.3	4,207	12.0	3,080	1,127
29-Jan-06	30,698	1,312	562	29,948	28,913	16.0	4,129	12.0	3,094	1,035
05-Feb-06	30,698	1,870	562	29,390	28,727	14.5	3,717	11.9	3,054	663
12-Feb-06	30,698	2,590	562	28,670	28,352	13.3	3,371	12.1	3,053	318
19-Feb-06	30,698	2,590	562	28,670	28,307	13.5	3,408	12.1	3,045	363
26-Feb-06	30,698	2,546	562	28,714	27,404	17.2	4,211	11.8	2,901	1,310
05-Mar-06	30,698	4,130	562	27,130	27,577	10.3	2,541	12.2	2,988	-447
12-Mar-06	30,698	4,201	562	27,059	27,407	10.8	2,628	12.2	2,976	-348
19-Mar-06	30,698	4,284	562	26,976	26,606	13.5	3,211	12.0	2,841	370
26-Mar-06	30,698	4,291	562	26,969	26,023	15.8	3,688	11.8	2,742	946
02-Apr-06	30,698	4,367	562	26,893	25,565	18.5	4,206	12.7	2,878	1,328
09-Apr-06	30,698	4,611	562	26,649	25,712	16.8	3,841	12.7	2,904	937
16-Apr-06	30,698	4,834	562	26,426	24,771	20.0	4,399	12.5	2,744	1,655
23-Apr-06	30,698	4,890	562	26,370	24,280	22.5	4,834	12.7	2,744	2,090
30-Apr-06	30,698	5,854	562	25,406	23,878	19.9	4,220	12.7	2,692	1,528
07-May-06	30,698	5,355	562	25,905	22,839	29.2	5,850	13.9	2,784	3,066
14-May-06	30,698	5,487	562	25,773	25,576	13.7	3,102	12.8	2,905	197
21-May-06	30,698	5,975	562	25,285	25,249	12.6	2,826	12.4	2,790	36
28-May-06	30,698	6,944	562	24,316	25,343	7.1	1,613	11.6	2,640	-1,027
04-Jun-06	30,698	4,548	562	26,712	27,692	9.2	2,256	13.2	3,236	-980
11-Jun-06	30,749	2,610	562	28,701	28,953	12.4	3,160	13.4	3,412	-252
18-Jun-06	30,749	2,515	562	28,796	29,843	9.5	2,495	13.5	3,542	-1,047
25-Jun-06	30,749	2,608	562	28,703	29,823	9.2	2,426	13.5	3,546	-1,120
02-Jul-06	30,749	1,857	655	29,547	29,287	13.0	3,404	12.0	3,144	260
09-Jul-06	30,749	1,992	655	29,412	31,077	6.6	1,808	12.6	3,473	-1,665
16-Jul-06	30,749	1,964	655	29,440	30,269	9.3	2,516	12.4	3,345	-829
23-Jul-06	30,749	1,933	655	29,471	29,918	10.6	2,832	12.3	3,279	-447
30-Jul-06	30,749	1,933	655	29,471	29,434	12.3	3,217	12.1	3,180	37
06-Aug-06	30,749	1,982	655	29,422	29,873	10.6	2,823	12.3	3,274	-451
13-Aug-06	30,749	1,857	655	29,547	30,090	10.2	2,742	12.3	3,285	-543
20-Aug-06	30,749	1,880	655	29,524	29,514	12.1	3,197	12.1	3,187	10
27-Aug-06	30,749	1,834	655	29,570	29,234	13.3	3,467	12.0	3,131	336
03-Sep-06	30,749	3,181	655	28,223	30,248	4.7	1,266	12.2	3,291	-2,025
10-Sep-06	30,749	3,235	655	28,169	28,857	9.2	2,378	11.9	3,066	-688
17-Sep-06	30,749	4,055	655	27,349	28,698	6.9	1,754	12.1	3,103	-1,349
24-Sep-06	30,749	4,278	655	27,126	28,134	8.0	2,010	12.0	3,018	-1,008
01-Oct-06	30,749	4,623	655	26,781	26,645	12.3	2,941	11.8	2,805	136

Table A6 Energy Production Capability Forecast

Month	Existing Resource Scenario Forecast Energy Production Capability (GWh)	Planned Resource Scenario Forecast Energy Production Capability (GWh)
Apr 2005	16,731	16,731
May 2005	16,590	16,590
Jun 2005	14,842	14,842
Jul 2005	14,281	14,281
Aug 2005	14,308	14,308
Sep 2005	15,167	15,167
Oct 2005	16,941	16,941
Nov 2005	17,218	17,218
Dec 2005	16,161	16,161
Jan 2006	14,740	14,740
Feb 2006	14,752	14,752
Mar 2006	17,415	17,767
Apr 2006	17,479	17,843
May 2006	16,824	17,176
Jun 2006	15,024	15,388
Jul 2006	14,911	15,275
Aug 2006	14,119	14,448
Sep 2006	15,234	15,598

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Appendix B Transmission Projects

Zone	CAA-ID#	Description	Proposed I/S Date
East	2002-072	Belle River East DS	2006-Q2
East	2004-161	Cornwall 115KV Transmission	2006-Q2
Essa	2004-135	Essa Shunt Capacitor	2006-Q2
Northeast	2002-070	Sault #1 and #2 circuits (115 kV) take out of service	2005-Q1
Northeast	2004-EX208	New 115 kV tie breaker at Third Line TS between CB 445 & CB 455 in service	2005-Q4
Northeast	2004-EX210	Hollingsworth TS - 115/12 kV transformer (T1) replaced with new 28 MVA transformer	2005-Q4
Northeast	2002-070	W23K - 230 kV line between MacKay TS and Wawa TS in service	2005-Q4
Northeast	2002-070	K24G - 230 kV line between Third Line TS and MacKay TS in service	2005-Q4
Northeast	2002-070	New MacKay TS 230 kV switchyard with 3 x breaker ring-bus, 230/115 kV 200 MVA autotransformers & 40 MVAr reactor in service	2005-Q4
Northeast	2002-070	New Third Line TS 230 kVswitchyard with 5 x breaker ring-bus in service	2005-Q4
Northeast	2004-EX211	Patrick St. TS - 8 oil circuit breakers replaced with SF6 breakers	2006-Q3
Southwest	2004-115	Trafalgar TS: New 230 kV, 300 MVAR shunt capacitor	2005-Q2
Toronto	2003-104	Cardiff TS: New transformer station (formerly Mississauga TS).	2005-Q2
Toronto	2003-089	Vaughan MTS #1: Add new 3rd transformer.	2005-Q2
Toronto	2003-099	Parkway TS - Build new transformer station with first of two 750 MVA, 500/230 kV auto-transformers. V75P and V71P on load.	2005-Q1
Toronto	2004-113	Cooksville TS reconfigure connections from Applewood Junction	2006-Q2
Toronto	2003-099	Parkway TS - Completion of second auto-transformer and the remaining work for project 2003-099	2006-Q2

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Appendix C Planned Transmission Outages

The following tables list the planned transmission outages by transmission zone, for transmission outages with an expected duration greater than five days, and/or for those transmission outages associated with a major project.

Table C1 Bruce Zone

No outages to assess.

Table C2 East Zone

No outages to assess.

Table C3 Essa Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
9/19/05 5:00 AM	9/25/05 6:00 PM	Parry Sound TS: 77T1-E27, T1, T1B	CWW	Non-Recallable	None	
9/26/05 5:00 AM	10/2/05 6:00 PM	Parry Sound TS: T2, 77T2-E26, T2Y	CWW	Non-Recallable	None	
10/3/05 5:00 AM	10/9/05 6:00 PM	Waubaushene TS: T5J, 98-E27, T5	CWW	Non-Recallable	None	
10/10/05 5:00 AM	10/16/05 6:00 PM	Waubaushene TS: T6Q, 98-E26, T6	CWW	Non-Recallable	None	

Table C4 Niagara Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
4/2/05 5:00 AM	4/15/05 6:00 PM	Crowland TS: T6, QY, Q_BUS, T6Q, 41T6-A7C	CWW	3 Day	None	
4/23/05 5:00 AM	5/2/05 6:00 PM	Crowland TS: QY, SC1Y, T5, T5Y, Y_BUS, 41T5-A6C	CWW	3 Day	None	

Table C5 Northeast Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
4/18/04 3:37 PM	4/19/05 11:59 PM	Anjigami Line #1	CWW	Non-Recallable		

Table C6 Northwest Zone

No outages to assess.

Table C7 Ottawa Zone

No outages to assess.

Table C8 Southwest Zone

No outages to assess.

Table C9 Toronto Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
10/3/05 5:00 AM	11/18/05 6:00 PM	Manby East TS: T5-H2, TR5-T, TR5-S, T5	CWW	4 Week		
3/6/06 5:00 AM	4/14/06 6:00 PM	Manby East TS: T5-H2, TR5-T, TR5-S, T5	CWW	4 Week		
3/7/05 7:00 AM	4/29/05 3:00 PM	Claireville TS: KL83	CWW	5 Day		
7/12/04 8:01 AM	5/1/05 4:00 PM	Markham MTS #3: SC2	CWW	Non-Recallable		
11/29/04 7:00 AM	2/4/05 6:00 PM	Cecil TS: T3A5A6	CWW	Non-Recallable		
4/4/05 7:00 AM	4/15/05 6:00 PM	Fairchild TS: SS1-X, B_BUS, BSC1, BY, T1B, BY, T2B	CWW	Non-Recallable		
10/7/05 5:00 AM	12/9/05 6:00 PM	Claireville TS: HT14	CWW	8 Week		

Table C10 West Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
12/13/04 6:00 AM	1/21/05 5:00 PM	Tillsonburg TS: T2-LC, T2Y, T2, T2-L	CWW	Non-Recallable		
7/15/04 12:00 PM	12/31/05 3:00 PM	Chatham SS: SC21K, SC21	CWW	Non-Recallable		

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