18-MONTH OUTLOOK:

An Assessment of the Reliability of the Ontario Electricity System

From July 2005 to December 2006

ieso
Power to Ontario. On Demand.

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Executive Summary

Hot weather during the first half of the summer will result in significantly increased reliance on imports to supplement Ontario generation. However, as the Outlook progresses, this concern should ease with the addition of new generation over the next 18 months.

Ontario Power Generation's plans to return Pickering A Unit 1 to service in the third quarter of 2005 will result in a projected increase of 515 MW to Ontario's electricity system. In addition, eight of the 10 new projects announced in November 2004 from the provincial government's Request for Proposals for Renewable Generation are expected to be available within the 18 month timeframe of this Outlook.

Hydro One's development of the first phase of the Parkway Transformer Station is complete and has effectively addressed the short-term concerns related to the April 30, 2005 shutdown of the Lakeview coal-fired generating station in Mississauga. Additional transmission reinforcement and local generation capability is required to address loading and voltage support as the load in the Greater Toronto Area (GTA) continues to grow.

Reserve levels for the first part of this summer are below requirements. Some periods of reduced reserve levels over the remainder of 2005 have been identified as a result of a combination of additional generator planned maintenance, delays in implementation of price-responsive demand measures by market participants and higher forecast forced outage rates from some thermal units. As with previous Outlooks, under hot 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.

It should be noted that the IESO expects continuing limitations on the Queenston Flow West (QFW) interface under hot weather when demands exceed 24,000 megawatts (MW) and Ontario is importing power. On several recent occasions this has limited import capability from New York.

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 July 1, 2005 to December 31, 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 10 weeks in the summer of 2005.

In addition to new supply, by the end of the 18 month study timeframe, price-responsive demand is forecast to exceed 700 MW, due to continuing increases in the amount 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 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 in southwestern Ontario and in the GTA, especially during summer peak demand periods.

The immediate transmission system impacts arising from the shutdown of the Lakeview coal-fired Generating Station in Mississauga on April 30, 2005 have been addressed. Hydro One completed the first phase of the Parkway Transformer Station which alleviates transformer overload concerns. Voltage support requirements have been dealt with by the installation of additional shunt capacitors and related transformer controls by Hydro One. These temporary measures were required to avoid overloading of auto-transformers at the Claireville Transformer Station and Milton Transformer Station, and lower than acceptable voltages in the western portion of the GTA during heavy load conditions. However additional steps are identified in the 10-Year Outlook, to be published at the end of June, 2005, which are required to address this growing problem.

Over the past several years, the loading on transmission supplying downtown Toronto has been growing to the point where facilities are increasingly likely to become overloaded during high demand periods, especially those which occur under extreme hot weather. A combination of generation, demand-side initiatives and transmission reinforcement have been identified by the IESO and are also detailed in the 10-Year Outlook.

Ontario Demand Forecast

The IESO demand forecast has been updated to reflect actual economic, demand and weather data through to the end of March 2005. The economic outlook is more pessimistic than the previous forecast as the economic signals remain mixed. Ontario economic growth has not been strong, but given the environment of high oil prices and a high dollar this is not surprising. On the positive side, low inflation and low interest rates continue to facilitate domestic demand and business investment. As the spread between U.S. and Canadian interest rates increase, the dollar will lose some of its value thereby helping exports. With a combination of positive and negative signals, the economic outlook remains modest.

On a weather-corrected basis, energy demand was higher than expected in March but weaker than forecast for April and May. This is attributable to a weaker resource sector. Likewise, weather-corrected peaks for March, April and May were all lower than expected.

Normal weather peak demand for summer 2005 is forecasted to be 23,800 MW for the summer and 24,200 MW for the winter of 2006. Energy demand is expected to be 155.0 TWh for 2005 and 156.8 TWh for 2006 a 0.8% and 1.2% increase respectively.

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	23,802	25,374	26,931
Winter 2006	24,207	24,728	25,731
Summer 2006	24,066	25,689	27,269

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Caution and Disclaimer

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 July 1, 2005 to December 31, 2006. It supersedes the report titled "An Assessment of the Reliability of the Ontario Electricity System from April 2005 to September 2006", dated March 29, 2005. 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 July 1, 2005 to December 31, 2006" (IESO_REP_0250) (found on the IESO web site at http://www.ieso.ca/imoweb/pubs/marketReports/18Month_ODF_2005jun.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_2005jun.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_2005jun.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 lower than expected throughout the spring as demand from the resource sector has started to show some weakness.

The economic outlook has also been updated and is not as optimistic as the previous forecast. The combination of lower than expected demand and a lower projected economic growth means that both peak and energy demand are lower than in the previous forecast. Annual energy demand is expected to grow by 0.8% and 1.2% in 2005 and 2006 while peak demands are lower than the previous forecast.

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 announced in November 2004 from the 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. The results of the Request for Proposals for the additional new clean generation and demand side projects were also announced in the spring of 2005. It is expected the first energy from 2,225 MW of new generation will start flowing in the fall of 2007 (outside

the range of this Outlook). The impact of the demand side project of 10 MW is reflected in the Ontario demand forecast beginning in the winter of 2006.

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 700 MW, due to continuing increases in the amount 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 352 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 30,114 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) stopped producing power at the end of April 2005, resulting in a decrease in the installed generation resources of 1,148 MW.

Table 2.1 Existing Installed Generation Resources

Fuel Type	Total Capacity (MW)	Number of Stations
Nuclear	10,882	5
Coal	6,434	4
Oil / Gas	4,976	20
Hydroelectric	7,756	67
Miscellaneous	66	2
Total	30,114	98

The number of stations which are fuelled primarily by coal has decreased by one since the last Outlook, due to the closure of the Lakeview Generating Station. The total capacity of coal-fired resources is also decreased, mainly due to the closure of Lakeview.

The capacity of oil/gas resources remains unchanged, but the method of accounting for the number of stations that are primarily fuelled by gas/oil has changed.

Beginning with this Outlook report, each station is assigned a fuel category based on the primary fuel category associated with it. For some stations that are primarily fuelled by uranium, there are some smaller resources at those stations that are fuelled by oil/gas. For purposes of accounting for a station count by fuel type, these stations are now uniquely classified as nuclear stations, and are therefore only included as a "Nuclear" station. Therefore, the station count for the number of stations that are primarily fuelled by oil/gas has decreased by three.

The total capacity of resources that are fuelled by water is now recognized to be higher, mainly to reflect the increases in capacity that have been completed at the Beck and Kipling hydroelectric

stations. The number of generating stations that are now recognized as having water as the primary fuel has been increased by six, to recognize that some individual resource delivery points have multiple generating stations behind the resource point. However, no new hydroelectric stations have come into service since the last Outlook report.

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 projects selected under the RFP process which 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.

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 249 MW is expected to become operational by the end 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, was 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 were released in the spring of 2005. The study concluded that the median capacity contribution which can be expected from wind generation would range from about 47% in the winter to 19% in the summer. Other areas in North America typically rely on 2% 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 actual wind generation information from the province 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 125 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 entire duration of the study period. 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 but the number of smaller generation capacity increases of about 125 MW to the existing generation facilities. The existing resource scenario includes 352 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 entire duration of the study period. 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 703 MW, due to continuing increases in the amount 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. 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 listed in Table 2.2. 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 394 MW to a maximum of 703 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)	30,114	30,114	30,164	30,807	30,215	30,878
2	Imports (MW)	0	0	0	0	0	0
3	Total Resources (MW)	30,114	30,114	30,164	30,807	30,215	30,878
4	Total Reductions in Resources (MW)	3,953	3,953	1,604	1,604	1,863	1,873
5	Price-responsive Demand (MW)	352	394	352	449	352	703
6	Available Resources (MW)	26,513	26,555	28,912	29,652	28,704	29,708

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 new 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

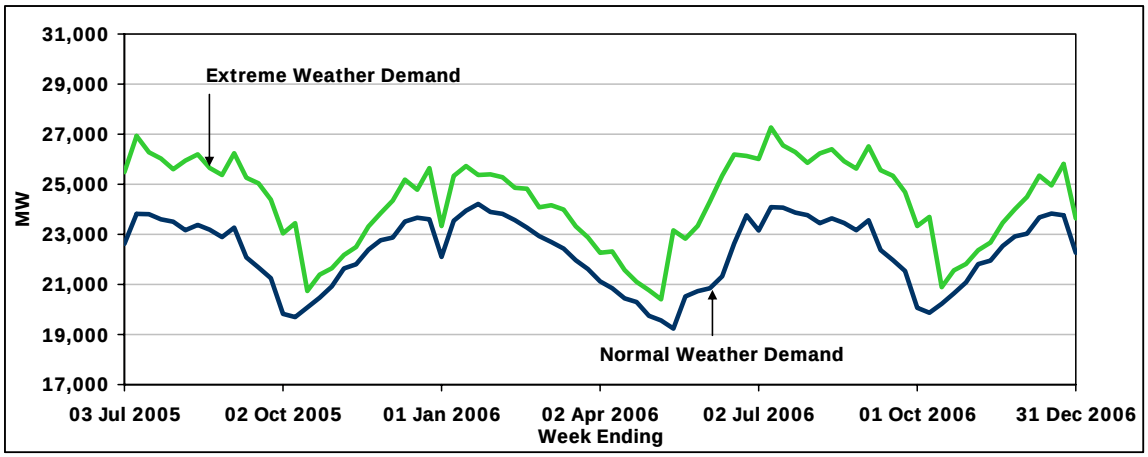


Figure 3.2 shows the Total Reductions in Resources used in the calculation of the Available Resources (as described in Section 2.3).

Figure 3.2 Total Reductions in Resources

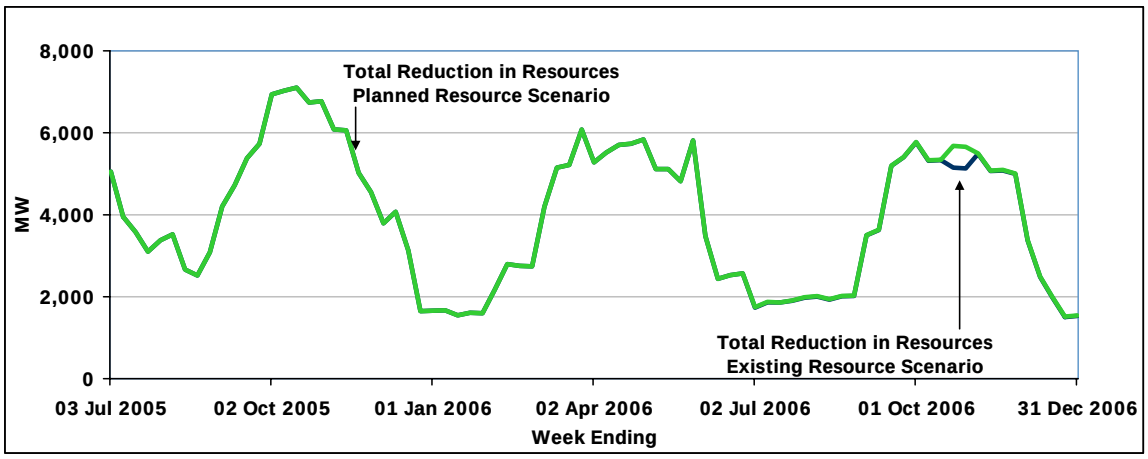


Figure 3.3 provides a comparison between Available Resources, and Required Resources for each week, for the Existing Resource Scenario. The latter quantity is the sum of Demand and Required Reserve, and is based on a probabilistic calculation, which takes into account load forecast uncertainty due to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

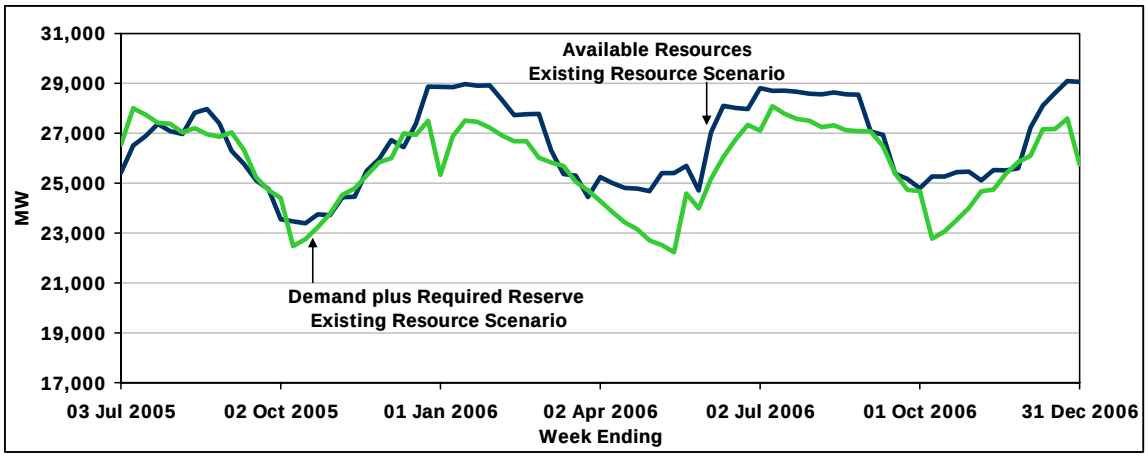
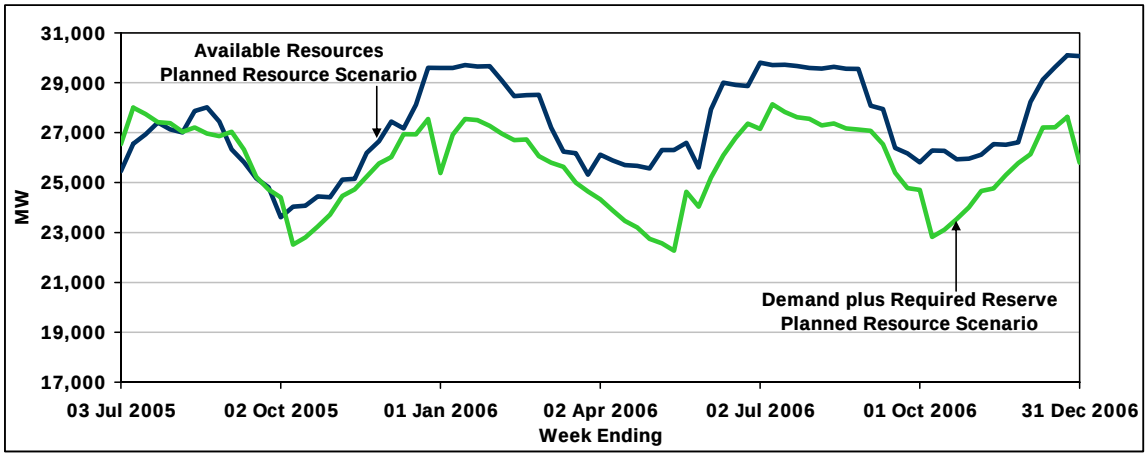
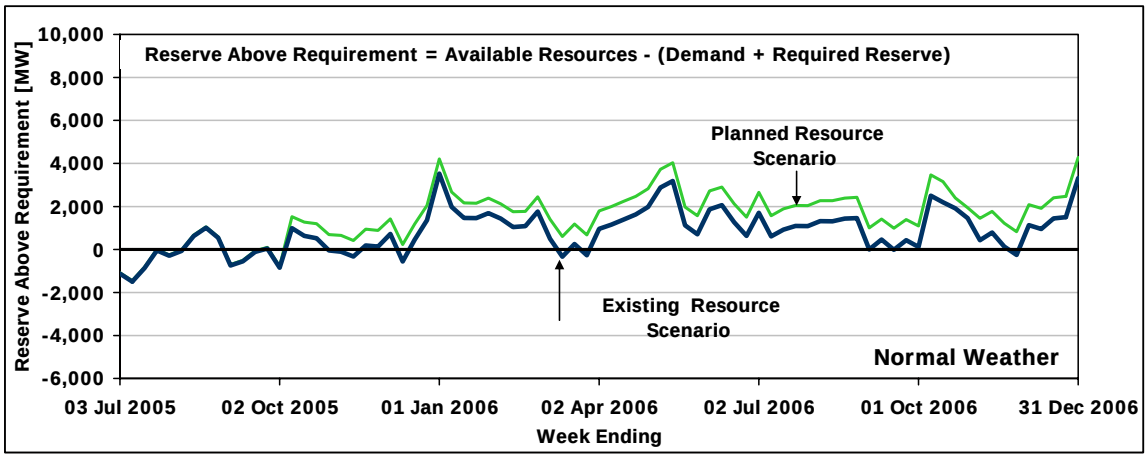


Figure 3.4 Available vs. Required Resources: Planned Resource Scenario



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 18 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 10 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 March 29, 2005. 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

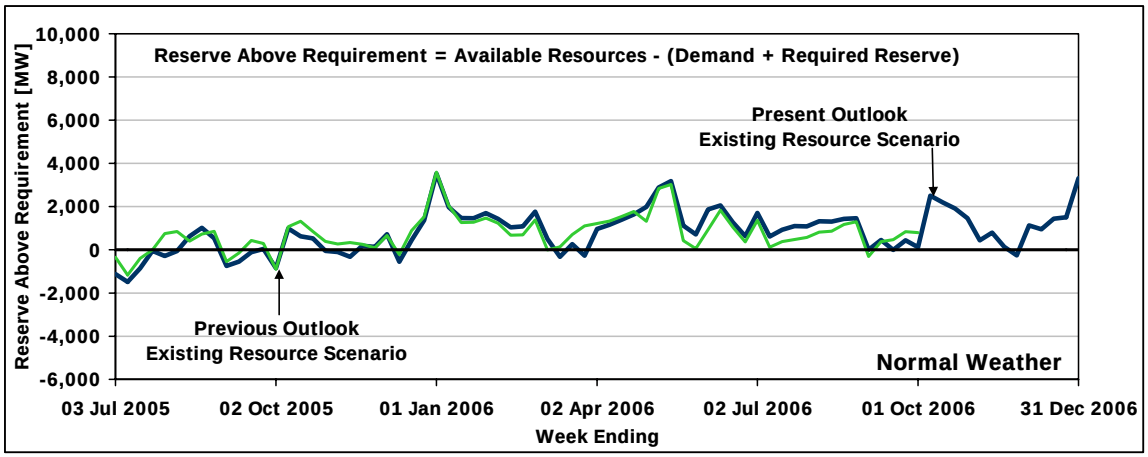
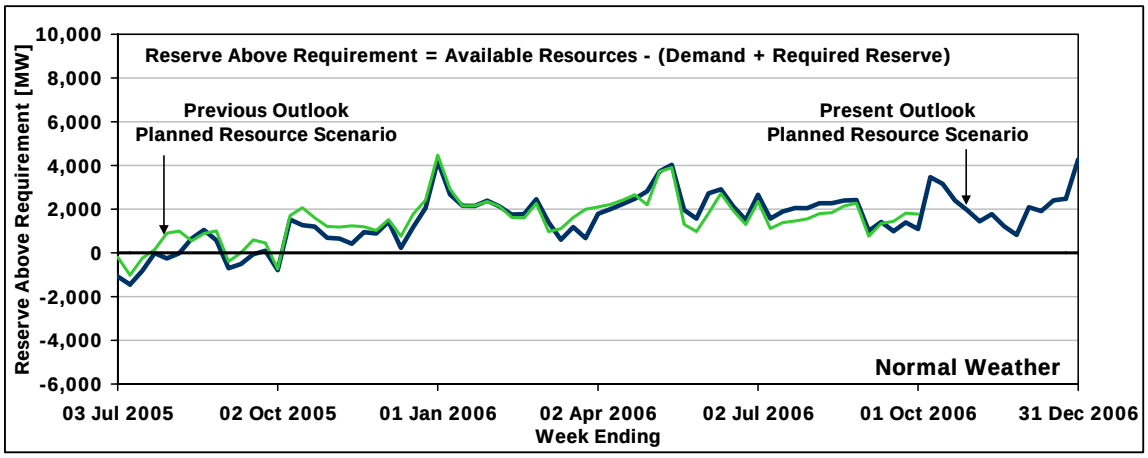


Figure 3.7 Reserve Above Requirement: Planned Resource Scenario vs. Previous Planned Resource Scenario



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.

Hot weather during the first half of the summer will result in significantly increased reliance on imports to supplement Ontario generation. However, as the Outlook progresses, this concern should ease with the addition of new generation over the next 18 months.

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

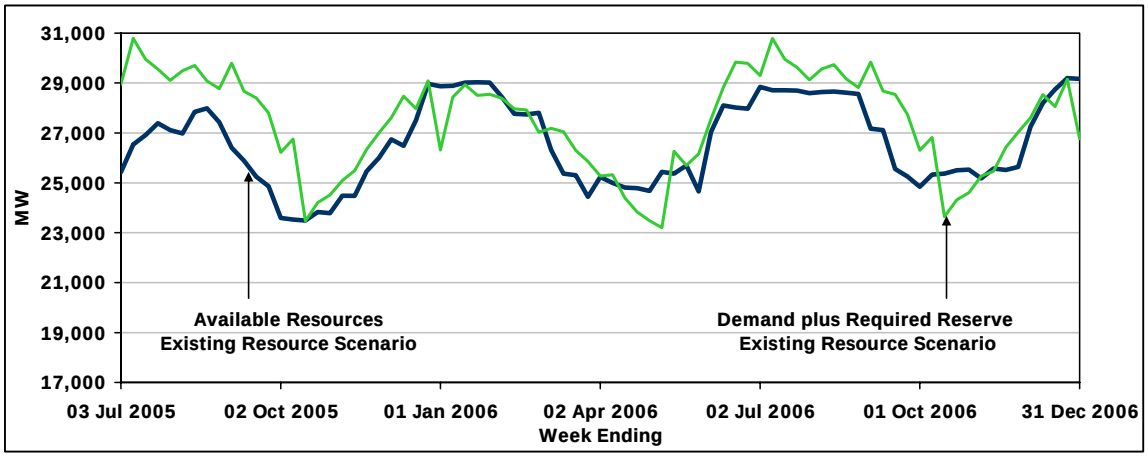


Figure 3.9 Available vs. Required Resources: Planned Resource Scenario Extreme Weather Demand

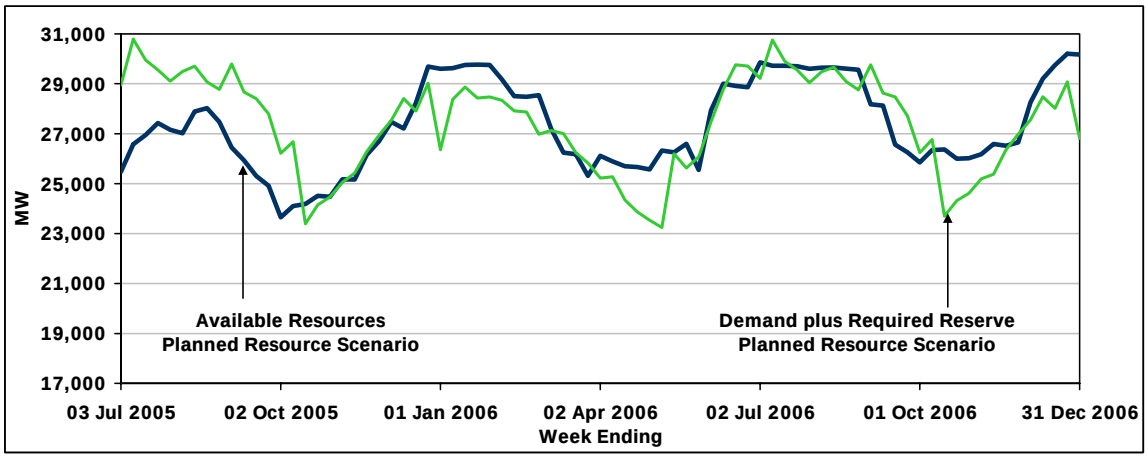
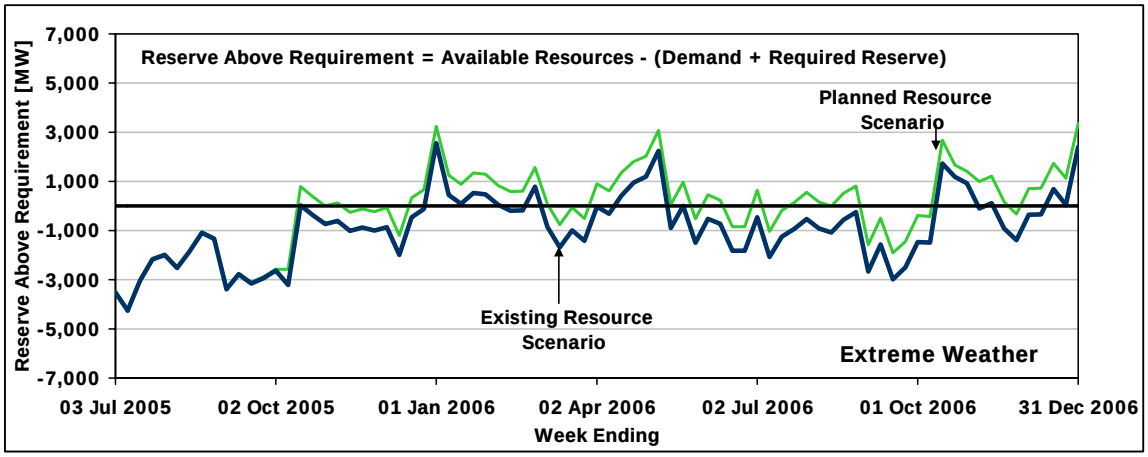


Figure 3.10 Reserve Above Requirement: Existing Resource Scenario and Planned Resource Scenario, Extreme Weather Demand



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 and/or cancellation of planned generator outages.

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 the summer of 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 1,146 MW for all hours. During the hours when Ontario demand exceeded 20,000 MW the average import level was about 1,432 MW. During the hours when Ontario demand exceeded 23,000 MW the average import level was around 2,121 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 shut-down of TGS.

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 shut-down of Lakeview, and the remainder of the work is now scheduled for completion by the end of 2005.

Additional information regarding each of the transmission projects in the CAA queue can be found at the IESO's Connection Assessments 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 May 2005 were used. Since the previous 18-Month Outlook report, there have been some 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.

The IESO expects continuing limitations on the Queenston Flow West (QFW) interface under hot weather when demands exceed 24,000 megawatts (MW) and Ontario is importing power. On several recent occasions this has limited import capability from New York.

4.3.1 Impact of Lakeview Thermal Generating Station (TGS) Shutdown

Ontario Power Generation's Lakeview TGS stopped producing power at the end of April 2005, in accordance with Ontario Regulation 396/01. The 1,148 MW Lakeview facility had four units in service before it ceased operations.

A number of generation and transmission projects were identified and implemented to address potential reliability impacts associated with the shutdown of Lakeview.

These reliability impacts included 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 during heavy load conditions with all transmission elements in service. The risk to supply reliability increased significantly for contingency conditions or when transmission elements are out of service.

In order to address the reliability impacts associated with the shutdown of Lakeview TGS, Hydro One constructed the Parkway Transformer Station, with the first phase of this facility coming in service in March 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 installed shunt capacitors with a reactive power capability of approximately 1,100 Mvar at Burlington TS, Richview TS, John TS and Trafalgar TS. 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 was commendable that all of the work above was completed before the shut-down of Lakeview TGS, in order 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.

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 18 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.
- Hot weather during the first half of the summer will result in significantly increased reliance on imports to supplement Ontario generation. However, as the Outlook progresses, this concern should ease with the addition of new generation over the next 18 months.
- Under the more likely Planned Resource-Normal Weather Scenario, the resource adequacy situation is improved over the Existing Resource Scenario, mainly in the last 15 months of the Outlook period. For all but 10 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 18 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 10 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

- The IESO expects continuing limitations on the Queenston Flow West (QFW) interface under hot weather when demands exceed 24,000 megawatts (MW) and Ontario is importing power. On several recent occasions this has limited import capability from New York.
- 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 ceased operations as a coal-fired generating station on April 30, 2005 in accordance with Ontario Regulation 396/01. Adequate transmission plans were 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	Price-sensitive Demand MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
03-Jul-05	30,114	5,049	352	25,417	26,541	12.3	2,789	17.3	3,913	-1,124
10-Jul-05	30,114	3,953	352	26,513	28,003	11.3	2,693	17.6	4,183	-1,490
17-Jul-05	30,114	3,575	352	26,891	27,750	13.0	3,089	16.6	3,948	-859
24-Jul-05	30,114	3,098	352	27,368	27,416	16.0	3,768	16.2	3,816	-48
31-Jul-05	30,114	3,376	352	27,090	27,382	15.2	3,581	16.5	3,873	-292
07-Aug-05	30,139	3,521	352	26,970	27,033	16.4	3,804	16.7	3,867	-63
14-Aug-05	30,139	2,665	352	27,826	27,206	19.1	4,454	16.4	3,834	620
21-Aug-05	30,139	2,517	352	27,974	26,964	20.7	4,792	16.3	3,782	1,010
28-Aug-05	30,139	3,085	352	27,406	26,867	19.7	4,512	17.4	3,973	539
04-Sep-05	30,139	4,200	352	26,291	27,032	13.0	3,026	16.2	3,767	-741
11-Sep-05	30,139	4,717	352	25,774	26,323	16.7	3,696	19.2	4,245	-549
18-Sep-05	30,139	5,377	352	25,114	25,228	15.9	3,437	16.4	3,551	-114
25-Sep-05	30,139	5,732	352	24,759	24,717	16.6	3,517	16.4	3,475	42
02-Oct-05	30,139	6,938	352	23,553	24,402	18.8	3,732	23.1	4,581	-849
09-Oct-05	30,139	7,028	352	23,463	22,478	19.1	3,764	14.1	2,779	985
16-Oct-05	30,139	7,103	352	23,388	22,761	16.5	3,311	13.4	2,684	627
23-Oct-05	30,139	6,738	352	23,753	23,226	16.0	3,282	13.5	2,755	527
30-Oct-05	30,139	6,770	352	23,721	23,771	13.4	2,799	13.6	2,849	-50
06-Nov-05	30,164	6,082	352	24,434	24,537	12.9	2,796	13.4	2,899	-103
13-Nov-05	30,164	6,058	352	24,458	24,786	12.2	2,653	13.7	2,981	-328
20-Nov-05	30,164	5,020	352	25,496	25,311	13.9	3,108	13.1	2,923	185
27-Nov-05	30,164	4,549	352	25,967	25,833	14.1	3,202	13.5	3,068	134
04-Dec-05	30,164	3,794	352	26,722	26,005	16.8	3,849	13.7	3,132	717
11-Dec-05	30,164	4,074	352	26,442	26,996	12.4	2,926	14.8	3,480	-554
18-Dec-05	30,164	3,130	352	27,386	26,937	15.7	3,716	13.8	3,267	449
25-Dec-05	30,164	1,648	352	28,868	27,505	22.4	5,273	16.6	3,910	1,363
01-Jan-06	30,164	1,655	352	28,861	25,331	30.6	6,767	14.7	3,237	3,530
08-Jan-06	30,164	1,665	352	28,851	26,874	22.6	5,308	14.2	3,331	1,977
15-Jan-06	30,164	1,544	352	28,972	27,507	21.0	5,029	14.9	3,564	1,465
22-Jan-06	30,164	1,604	352	28,912	27,456	19.4	4,705	13.4	3,249	1,456
29-Jan-06	30,164	1,596	352	28,920	27,225	21.0	5,023	13.9	3,328	1,695
05-Feb-06	30,164	2,173	352	28,343	26,912	19.0	4,525	13.0	3,094	1,431
12-Feb-06	30,164	2,793	352	27,723	26,678	17.6	4,158	13.2	3,113	1,045
19-Feb-06	30,164	2,752	352	27,764	26,681	19.3	4,498	14.7	3,415	1,083
26-Feb-06	30,164	2,738	352	27,778	26,018	21.1	4,845	13.5	3,085	1,760
05-Mar-06	30,164	4,194	352	26,322	25,825	16.0	3,625	13.8	3,128	497
12-Mar-06	30,164	5,151	352	25,365	25,695	13.1	2,934	14.6	3,264	-330
19-Mar-06	30,164	5,213	352	25,303	25,046	15.2	3,338	14.0	3,081	257
26-Mar-06	30,164	6,077	352	24,439	24,708	13.1	2,827	14.3	3,096	-269

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	Price-sensitive Demand MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
02-Apr-06	30,164	5,276	352	25,240	24,283	19.5	4,121	15.0	3,164	957
09-Apr-06	30,164	5,516	352	25,000	23,840	19.9	4,154	14.4	2,994	1,160
16-Apr-06	30,164	5,703	352	24,813	23,420	21.4	4,373	14.6	2,980	1,393
23-Apr-06	30,164	5,732	352	24,784	23,152	22.1	4,490	14.1	2,858	1,632
30-Apr-06	30,164	5,836	352	24,680	22,701	25.0	4,933	15.0	2,954	1,979
07-May-06	30,164	5,114	352	25,402	22,522	29.9	5,843	15.2	2,963	2,880
14-May-06	30,164	5,112	352	25,404	22,225	32.1	6,167	15.5	2,988	3,179
21-May-06	30,164	4,817	352	25,699	24,578	25.2	5,179	19.8	4,058	1,121
28-May-06	30,164	5,814	352	24,702	23,991	19.2	3,974	15.7	3,263	711
04-Jun-06	30,164	3,479	352	27,037	25,170	29.7	6,194	20.8	4,327	1,867
11-Jun-06	30,189	2,436	352	28,105	26,050	31.8	6,780	22.2	4,725	2,055
18-Jun-06	30,189	2,521	352	28,020	26,752	23.8	5,389	18.2	4,121	1,268
25-Jun-06	30,189	2,571	352	27,970	27,336	17.7	4,209	15.1	3,575	634
02-Jul-06	30,189	1,734	352	28,807	27,103	24.4	5,654	17.1	3,950	1,704
09-Jul-06	30,215	1,863	352	28,704	28,088	19.2	4,615	16.6	3,999	616
16-Jul-06	30,215	1,860	352	28,707	27,782	19.3	4,641	15.4	3,716	925
23-Jul-06	30,215	1,902	352	28,665	27,570	20.1	4,802	15.5	3,707	1,095
30-Jul-06	30,215	1,977	352	28,590	27,505	20.3	4,820	15.7	3,735	1,085
06-Aug-06	30,215	2,003	352	28,564	27,251	21.9	5,122	16.3	3,809	1,313
13-Aug-06	30,215	1,929	352	28,638	27,328	21.2	4,999	15.6	3,689	1,310
20-Aug-06	30,215	2,006	352	28,561	27,128	21.8	5,111	15.7	3,678	1,433
27-Aug-06	30,215	2,019	352	28,548	27,089	23.2	5,378	16.9	3,919	1,459
03-Sep-06	30,215	3,495	352	27,072	27,071	14.9	3,516	14.9	3,515	1
10-Sep-06	30,215	3,627	352	26,940	26,483	20.4	4,566	18.4	4,109	457
17-Sep-06	30,215	5,190	352	25,377	25,386	15.5	3,401	15.5	3,410	-9
24-Sep-06	30,215	5,402	352	25,165	24,732	16.9	3,632	14.9	3,199	433
01-Oct-06	30,215	5,768	352	24,799	24,680	23.6	4,735	23.0	4,616	119
08-Oct-06	30,241	5,318	352	25,275	22,771	27.2	5,406	14.6	2,902	2,504
15-Oct-06	30,241	5,331	352	25,262	23,066	24.9	5,035	14.0	2,839	2,196
22-Oct-06	30,241	5,151	352	25,442	23,530	23.3	4,801	14.0	2,889	1,912
29-Oct-06	30,241	5,130	352	25,463	24,001	20.8	4,376	13.8	2,914	1,462
05-Nov-06	30,241	5,485	352	25,108	24,671	15.1	3,294	13.1	2,857	437
12-Nov-06	30,241	5,063	352	25,530	24,740	16.3	3,577	12.7	2,787	790
19-Nov-06	30,241	5,081	352	25,512	25,380	13.2	2,977	12.6	2,845	132
26-Nov-06	30,241	4,995	352	25,598	25,852	11.7	2,685	12.8	2,939	-254
03-Dec-06	30,241	3,371	352	27,222	26,096	18.3	4,202	13.4	3,076	1,126
10-Dec-06	30,241	2,480	352	28,113	27,164	18.7	4,435	14.7	3,486	949
17-Dec-06	30,241	1,981	352	28,612	27,172	20.1	4,781	14.0	3,341	1,440
24-Dec-06	30,241	1,501	352	29,092	27,586	22.5	5,336	16.1	3,830	1,506
31-Dec-06	30,241	1,530	352	29,063	25,746	30.6	6,802	15.7	3,485	3,317

Table A2 Assessment of Resource Adequacy:
Planned Resource Scenario

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Price-sensitive Demand MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
03-Jul-05	30,114	5,049	394	25,459	26,541	12.5	2,831	17.3	3,913	-1,082
10-Jul-05	30,114	3,953	394	26,555	28,003	11.5	2,735	17.6	4,183	-1,448
17-Jul-05	30,114	3,575	394	26,933	27,750	13.2	3,131	16.6	3,948	-817
24-Jul-05	30,114	3,098	394	27,410	27,416	16.1	3,810	16.2	3,816	-6
31-Jul-05	30,114	3,376	394	27,132	27,382	15.4	3,623	16.5	3,873	-250
07-Aug-05	30,139	3,521	394	27,012	27,033	16.6	3,846	16.7	3,867	-21
14-Aug-05	30,139	2,665	394	27,868	27,206	19.2	4,496	16.4	3,834	662
21-Aug-05	30,139	2,517	394	28,016	26,964	20.9	4,834	16.3	3,782	1,052
28-Aug-05	30,139	3,085	394	27,448	26,867	19.9	4,554	17.4	3,973	581
04-Sep-05	30,139	4,200	394	26,333	27,032	13.2	3,068	16.2	3,767	-699
11-Sep-05	30,139	4,717	394	25,816	26,323	16.9	3,738	19.2	4,245	-507
18-Sep-05	30,139	5,377	408	25,170	25,228	16.1	3,493	16.4	3,551	-58
25-Sep-05	30,139	5,732	408	24,815	24,717	16.8	3,573	16.4	3,475	98
02-Oct-05	30,139	6,938	408	23,609	24,402	19.1	3,788	23.1	4,581	-793
09-Oct-05	30,654	7,028	408	24,034	22,512	22.0	4,335	14.3	2,813	1,522
16-Oct-05	30,771	7,103	408	24,076	22,806	19.9	3,999	13.6	2,729	1,270
23-Oct-05	30,771	6,738	408	24,441	23,240	19.4	3,970	13.5	2,769	1,201
30-Oct-05	30,771	6,770	408	24,409	23,713	16.7	3,487	13.3	2,791	696
06-Nov-05	30,796	6,082	408	25,122	24,462	16.1	3,484	13.1	2,824	660
13-Nov-05	30,796	6,058	408	25,146	24,727	15.3	3,341	13.4	2,922	419
20-Nov-05	30,796	5,020	408	26,184	25,239	17.0	3,796	12.7	2,851	945
27-Nov-05	30,796	4,549	408	26,655	25,766	17.1	3,890	13.2	3,001	889
04-Dec-05	30,796	3,794	449	27,451	26,024	20.0	4,578	13.8	3,151	1,427
11-Dec-05	30,796	4,074	449	27,171	26,940	15.5	3,655	14.6	3,424	231
18-Dec-05	30,796	3,130	449	28,115	26,930	18.8	4,445	13.8	3,260	1,185
25-Dec-05	30,796	1,648	449	29,597	27,546	25.4	6,002	16.8	3,951	2,051
01-Jan-06	30,796	1,655	449	29,590	25,378	33.9	7,496	14.9	3,284	4,212
08-Jan-06	30,807	1,665	449	29,591	26,919	25.7	6,048	14.3	3,376	2,672
15-Jan-06	30,807	1,544	449	29,712	27,550	24.1	5,769	15.1	3,607	2,162
22-Jan-06	30,807	1,604	449	29,652	27,504	22.5	5,445	13.6	3,297	2,148
29-Jan-06	30,807	1,596	449	29,660	27,271	24.1	5,763	14.1	3,374	2,389
05-Feb-06	30,807	2,173	449	29,083	26,959	22.1	5,265	13.2	3,141	2,124
12-Feb-06	30,807	2,793	449	28,463	26,706	20.8	4,898	13.3	3,141	1,757
19-Feb-06	30,807	2,752	449	28,504	26,729	22.5	5,238	14.9	3,463	1,775
26-Feb-06	30,807	2,738	449	28,518	26,065	24.4	5,585	13.7	3,132	2,453
05-Mar-06	30,807	4,194	587	27,200	25,795	19.8	4,503	13.7	3,098	1,405
12-Mar-06	30,807	5,151	587	26,243	25,637	17.0	3,812	14.3	3,206	606
19-Mar-06	30,807	5,213	587	26,181	24,997	19.2	4,216	13.8	3,032	1,184
26-Mar-06	30,807	6,077	587	25,317	24,645	17.1	3,705	14.0	3,033	672

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	Price-sensitive Demand MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
02-Apr-06	30,807	5,277	587	26,117	24,327	23.7	4,998	15.2	3,208	1,790
09-Apr-06	30,817	5,516	587	25,888	23,888	24.2	5,042	14.6	3,042	2,000
16-Apr-06	30,817	5,703	587	25,701	23,466	25.7	5,261	14.8	3,026	2,235
23-Apr-06	30,817	5,733	587	25,671	23,201	26.5	5,377	14.3	2,907	2,470
30-Apr-06	30,817	5,836	587	25,568	22,746	29.5	5,821	15.2	2,999	2,822
07-May-06	30,827	5,114	587	26,300	22,570	34.5	6,741	15.4	3,011	3,730
14-May-06	30,827	5,112	587	26,302	22,273	36.7	7,065	15.8	3,036	4,029
21-May-06	30,827	4,817	587	26,597	24,631	29.6	6,077	20.0	4,111	1,966
28-May-06	30,827	5,814	587	25,600	24,031	23.5	4,872	15.9	3,303	1,569
04-Jun-06	30,827	3,479	587	27,935	25,206	34.0	7,092	20.9	4,363	2,729
11-Jun-06	30,852	2,436	587	29,003	26,095	36.0	7,678	22.4	4,770	2,908
18-Jun-06	30,852	2,521	587	28,918	26,794	27.8	6,287	18.4	4,163	2,124
25-Jun-06	30,852	2,571	587	28,868	27,361	21.5	5,107	15.2	3,600	1,507
02-Jul-06	30,852	1,744	701	29,808	27,151	28.7	6,655	17.3	3,998	2,657
09-Jul-06	30,878	1,873	703	29,708	28,137	23.3	5,619	16.8	4,048	1,571
16-Jul-06	30,878	1,860	703	29,721	27,829	23.5	5,655	15.6	3,763	1,892
23-Jul-06	30,878	1,912	703	29,669	27,617	24.3	5,806	15.7	3,754	2,052
30-Jul-06	30,878	1,987	703	29,594	27,552	24.5	5,824	15.9	3,782	2,042
06-Aug-06	30,878	2,013	703	29,568	27,293	26.1	6,126	16.4	3,851	2,275
13-Aug-06	30,878	1,939	703	29,642	27,374	25.4	6,003	15.8	3,735	2,268
20-Aug-06	30,878	2,016	703	29,565	27,174	26.1	6,115	15.9	3,724	2,391
27-Aug-06	30,878	2,029	703	29,552	27,129	27.5	6,382	17.1	3,959	2,423
03-Sep-06	30,878	3,501	703	28,080	27,073	19.2	4,524	14.9	3,517	1,007
10-Sep-06	30,878	3,632	703	27,949	26,533	24.9	5,575	18.6	4,159	1,416
17-Sep-06	30,878	5,195	703	26,386	25,399	20.1	4,410	15.6	3,423	987
24-Sep-06	30,878	5,407	703	26,174	24,781	21.6	4,641	15.1	3,248	1,393
01-Oct-06	30,878	5,773	703	25,808	24,713	28.6	5,744	23.2	4,649	1,095
08-Oct-06	30,909	5,328	703	26,284	22,818	32.3	6,415	14.8	2,949	3,466
15-Oct-06	30,909	5,341	703	26,271	23,113	29.9	6,044	14.3	2,886	3,158
22-Oct-06	30,909	5,676	703	25,936	23,542	25.7	5,295	14.1	2,901	2,394
29-Oct-06	30,909	5,655	703	25,957	24,013	23.1	4,870	13.9	2,926	1,944
05-Nov-06	30,909	5,495	703	26,117	24,667	19.7	4,303	13.1	2,853	1,450
12-Nov-06	30,909	5,073	703	26,539	24,767	20.9	4,586	12.8	2,814	1,772
19-Nov-06	30,909	5,091	703	26,521	25,303	17.7	3,986	12.3	2,768	1,218
26-Nov-06	30,909	5,005	703	26,607	25,782	16.1	3,694	12.5	2,869	825
03-Dec-06	30,909	3,381	703	28,231	26,142	22.6	5,211	13.6	3,122	2,089
10-Dec-06	30,909	2,490	703	29,122	27,210	23.0	5,444	14.9	3,532	1,912
17-Dec-06	30,909	1,991	703	29,621	27,219	24.3	5,790	14.2	3,388	2,402
24-Dec-06	30,909	1,511	703	30,101	27,629	26.7	6,345	16.3	3,873	2,472
31-Dec-06	30,909	1,540	703	30,072	25,792	35.1	7,811	15.9	3,531	4,280

Table A3 Demand Forecast Range For Required Resources Calculation

Week Ending Day	Ontario Demand Normal Weather MW	Ontario Demand Extreme Weather MW
03-Jul-05	22628	25484
10-Jul-05	23820	26931
17-Jul-05	23802	26280
24-Jul-05	23600	26027
31-Jul-05	23509	25598
07-Aug-05	23166	25939
14-Aug-05	23372	26192
21-Aug-05	23182	25654
28-Aug-05	22894	25365
04-Sep-05	23265	26240
11-Sep-05	22078	25262
18-Sep-05	21677	25041
25-Sep-05	21242	24389
02-Oct-05	19821	23039
09-Oct-05	19699	23448
16-Oct-05	20077	20738
23-Oct-05	20471	21391
30-Oct-05	20922	21647
06-Nov-05	21638	22174
13-Nov-05	21805	22493
20-Nov-05	22388	23315
27-Nov-05	22765	23840
04-Dec-05	22873	24350
11-Dec-05	23516	25185
18-Dec-05	23670	24788
25-Dec-05	23595	25647
01-Jan-06	22094	23330
08-Jan-06	23543	25328
15-Jan-06	23943	25731
22-Jan-06	24207	25364
29-Jan-06	23897	25399
05-Feb-06	23818	25287
12-Feb-06	23565	24859
19-Feb-06	23266	24824
26-Feb-06	22933	24077
05-Mar-06	22697	24168
12-Mar-06	22431	23987
19-Mar-06	21965	23324
26-Mar-06	21612	22875

(Table A3 continued)

Week Ending Day	Ontario Demand Normal Weather MW	Ontario Demand Extreme Weather MW
02-Apr-06	21119	22267
09-Apr-06	20846	22317
16-Apr-06	20440	21572
23-Apr-06	20294	21102
30-Apr-06	19747	20767
07-May-06	19559	20399
14-May-06	19237	23159
21-May-06	20520	22823
28-May-06	20728	23334
04-Jun-06	20843	24308
11-Jun-06	21325	25348
18-Jun-06	22631	26187
25-Jun-06	23761	26136
02-Jul-06	23153	26009
09-Jul-06	24089	27269
16-Jul-06	24066	26553
23-Jul-06	23863	26290
30-Jul-06	23770	25862
06-Aug-06	23442	26233
13-Aug-06	23639	26402
20-Aug-06	23450	25920
27-Aug-06	23170	25631
03-Sep-06	23556	26518
10-Sep-06	22374	25560
17-Sep-06	21976	25340
24-Sep-06	21533	24682
01-Oct-06	20064	23330
08-Oct-06	19869	23700
15-Oct-06	20227	20889
22-Oct-06	20641	21558
29-Oct-06	21087	21817
05-Nov-06	21814	22367
12-Nov-06	21953	22669
19-Nov-06	22535	23457
26-Nov-06	22913	24007
03-Dec-06	23020	24497
10-Dec-06	23678	25346
17-Dec-06	23831	24955
24-Dec-06	23756	25814
31-Dec-06	22261	23638

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

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Price-responsive Demand MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
03-Jul-05	30,114	5,034	352	25,432	28,954	-0.2	-52	13.6	3,470	-3,522
10-Jul-05	30,114	3,933	352	26,533	30,783	-1.5	-398	14.3	3,852	-4,250
17-Jul-05	30,114	3,555	352	26,911	29,955	2.4	631	14.0	3,675	-3,044
24-Jul-05	30,114	3,080	352	27,386	29,557	5.2	1,359	13.6	3,530	-2,171
31-Jul-05	30,114	3,350	352	27,116	29,110	5.9	1,518	13.7	3,512	-1,994
07-Aug-05	30,139	3,512	352	26,979	29,497	4.0	1,040	13.7	3,558	-2,518
14-Aug-05	30,139	2,646	352	27,845	29,704	6.3	1,653	13.4	3,512	-1,859
21-Aug-05	30,139	2,504	352	27,987	29,081	9.1	2,333	13.4	3,427	-1,094
28-Aug-05	30,139	3,061	352	27,430	28,771	8.1	2,065	13.4	3,406	-1,341
04-Sep-05	30,139	4,083	352	26,408	29,793	0.6	168	13.5	3,553	-3,385
11-Sep-05	30,139	4,598	352	25,893	28,673	2.5	631	13.5	3,411	-2,780
18-Sep-05	30,139	5,243	352	25,248	28,401	0.8	207	13.4	3,360	-3,153
25-Sep-05	30,139	5,631	352	24,860	27,799	1.9	471	14.0	3,410	-2,939
02-Oct-05	30,139	6,895	352	23,596	26,224	2.4	557	13.8	3,185	-2,628
09-Oct-05	30,139	6,958	352	23,533	26,751	0.4	85	14.1	3,303	-3,218
16-Oct-05	30,139	6,998	352	23,493	23,468	13.3	2,755	13.2	2,730	25
23-Oct-05	30,139	6,662	352	23,829	24,205	11.4	2,438	13.2	2,814	-376
30-Oct-05	30,139	6,705	352	23,786	24,516	9.9	2,139	13.3	2,869	-730
06-Nov-05	30,164	6,031	352	24,485	25,090	10.4	2,311	13.2	2,916	-605
13-Nov-05	30,164	6,038	352	24,478	25,491	8.8	1,985	13.3	2,998	-1,013
20-Nov-05	30,164	5,050	352	25,466	26,341	9.2	2,151	13.0	3,026	-875
27-Nov-05	30,164	4,508	352	26,008	27,004	9.1	2,168	13.3	3,164	-996
04-Dec-05	30,164	3,771	352	26,745	27,611	9.8	2,395	13.4	3,261	-866
11-Dec-05	30,164	4,034	352	26,482	28,474	5.2	1,297	13.1	3,289	-1,992
18-Dec-05	30,164	3,010	352	27,506	27,970	11.0	2,718	12.8	3,182	-464
25-Dec-05	30,164	1,555	352	28,961	29,087	12.9	3,314	13.4	3,440	-126
01-Jan-06	30,164	1,645	352	28,871	26,317	23.8	5,541	12.8	2,987	2,554
08-Jan-06	30,164	1,631	352	28,885	28,437	14.0	3,557	12.3	3,109	448
15-Jan-06	30,164	1,501	352	29,015	28,930	12.8	3,284	12.4	3,199	85
22-Jan-06	30,164	1,483	352	29,033	28,502	14.5	3,669	12.4	3,138	531
29-Jan-06	30,164	1,498	352	29,018	28,546	14.3	3,619	12.4	3,147	472
05-Feb-06	30,164	2,075	352	28,441	28,390	12.5	3,154	12.3	3,103	51
12-Feb-06	30,164	2,752	352	27,764	27,962	11.7	2,905	12.5	3,103	-198
19-Feb-06	30,164	2,777	352	27,739	27,921	11.7	2,915	12.5	3,097	-182
26-Feb-06	30,164	2,715	352	27,801	27,024	15.5	3,724	12.2	2,947	777
05-Mar-06	30,164	4,194	352	26,322	27,178	8.9	2,154	12.5	3,010	-856
12-Mar-06	30,164	5,151	352	25,365	27,054	5.7	1,378	12.8	3,067	-1,689
19-Mar-06	30,164	5,213	352	25,303	26,296	8.5	1,979	12.7	2,972	-993
26-Mar-06	30,164	6,077	352	24,439	25,861	6.8	1,564	13.1	2,986	-1,422

(Table A4 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Price-responsive Demand MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
02-Apr-06	30,164	5,276	352	25,240	25,275	13.4	2,973	13.5	3,008	-35
09-Apr-06	30,164	5,516	352	25,000	25,321	12.0	2,683	13.5	3,004	-321
16-Apr-06	30,164	5,703	352	24,813	24,395	15.0	3,241	13.1	2,823	418
23-Apr-06	30,164	5,732	352	24,784	23,834	17.5	3,682	13.0	2,732	950
30-Apr-06	30,164	5,836	352	24,680	23,488	18.8	3,913	13.1	2,721	1,192
07-May-06	30,164	5,079	352	25,437	23,199	24.7	5,038	13.7	2,800	2,238
14-May-06	30,164	5,146	352	25,370	26,266	9.6	2,211	13.4	3,107	-896
21-May-06	30,164	4,817	352	25,699	25,697	12.6	2,876	12.6	2,874	2
28-May-06	30,164	5,854	352	24,662	26,164	5.7	1,328	12.1	2,830	-1,502
04-Jun-06	30,164	3,479	352	27,037	27,558	11.2	2,729	13.4	3,250	-521
11-Jun-06	30,189	2,436	352	28,105	28,828	10.9	2,757	13.7	3,480	-723
18-Jun-06	30,189	2,521	352	28,020	29,840	7.0	1,833	14.0	3,653	-1,820
25-Jun-06	30,189	2,571	352	27,970	29,788	7.0	1,834	14.0	3,652	-1,818
02-Jul-06	30,189	1,701	352	28,840	29,302	10.9	2,831	12.7	3,293	-462
09-Jul-06	30,215	1,860	352	28,707	30,786	5.3	1,438	12.9	3,517	-2,079
16-Jul-06	30,215	1,860	352	28,707	29,952	8.1	2,154	12.8	3,399	-1,245
23-Jul-06	30,215	1,873	352	28,694	29,628	9.1	2,404	12.7	3,338	-934
30-Jul-06	30,215	1,973	352	28,594	29,123	10.6	2,732	12.6	3,261	-529
06-Aug-06	30,215	1,923	352	28,644	29,560	9.2	2,411	12.7	3,327	-916
13-Aug-06	30,215	1,913	352	28,654	29,733	8.5	2,252	12.6	3,331	-1,079
20-Aug-06	30,215	1,960	352	28,607	29,171	10.4	2,687	12.5	3,251	-564
27-Aug-06	30,215	2,005	352	28,562	28,814	11.4	2,931	12.4	3,183	-252
03-Sep-06	30,215	3,393	352	27,174	29,840	2.5	656	12.5	3,322	-2,666
10-Sep-06	30,215	3,453	352	27,114	28,683	6.1	1,554	12.2	3,123	-1,569
17-Sep-06	30,215	5,011	352	25,556	28,541	0.9	216	12.6	3,201	-2,985
24-Sep-06	30,215	5,318	352	25,249	27,744	2.3	567	12.4	3,062	-2,495
01-Oct-06	30,215	5,725	352	24,842	26,307	6.5	1,512	12.8	2,977	-1,465
08-Oct-06	30,241	5,261	352	25,332	26,821	6.9	1,632	13.2	3,121	-1,489
15-Oct-06	30,241	5,227	352	25,366	23,645	21.4	4,477	13.2	2,756	1,721
22-Oct-06	30,241	5,090	352	25,503	24,314	18.3	3,945	12.8	2,756	1,189
29-Oct-06	30,241	5,067	352	25,526	24,606	17.0	3,709	12.8	2,789	920
05-Nov-06	30,241	5,416	352	25,177	25,279	12.6	2,810	13.0	2,912	-102
12-Nov-06	30,241	5,014	352	25,579	25,470	12.8	2,910	12.4	2,801	109
19-Nov-06	30,241	5,080	352	25,513	26,428	8.8	2,056	12.7	2,971	-915
26-Nov-06	30,241	4,954	352	25,639	27,028	6.8	1,632	12.6	3,021	-1,389
03-Dec-06	30,241	3,346	352	27,247	27,607	11.2	2,750	12.7	3,110	-360
10-Dec-06	30,241	2,398	352	28,195	28,537	11.2	2,849	12.6	3,191	-342
17-Dec-06	30,241	1,852	352	28,741	28,056	15.2	3,786	12.4	3,101	685
24-Dec-06	30,241	1,399	352	29,194	29,151	13.1	3,380	12.9	3,337	43
31-Dec-06	30,241	1,428	352	29,165	26,763	23.4	5,527	13.2	3,125	2,402

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

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Price-responsive Demand MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
03-Jul-05	30,114	5,034	394	25,474	28,954	0.0	-10	13.6	3,470	-3,480
10-Jul-05	30,114	3,933	394	26,575	30,783	-1.3	-356	14.3	3,852	-4,208
17-Jul-05	30,114	3,555	394	26,953	29,955	2.6	673	14.0	3,675	-3,002
24-Jul-05	30,114	3,080	394	27,428	29,557	5.4	1,401	13.6	3,530	-2,129
31-Jul-05	30,114	3,350	394	27,158	29,110	6.1	1,560	13.7	3,512	-1,952
07-Aug-05	30,139	3,512	394	27,021	29,497	4.2	1,082	13.7	3,558	-2,476
14-Aug-05	30,139	2,646	394	27,887	29,704	6.5	1,695	13.4	3,512	-1,817
21-Aug-05	30,139	2,504	394	28,029	29,081	9.3	2,375	13.4	3,427	-1,052
28-Aug-05	30,139	3,061	394	27,472	28,771	8.3	2,107	13.4	3,406	-1,299
04-Sep-05	30,139	4,083	394	26,450	29,793	0.8	210	13.5	3,553	-3,343
11-Sep-05	30,139	4,598	394	25,935	28,673	2.7	673	13.5	3,411	-2,738
18-Sep-05	30,139	5,243	408	25,304	28,401	1.1	263	13.4	3,360	-3,097
25-Sep-05	30,139	5,631	408	24,916	27,799	2.2	527	14.0	3,410	-2,883
02-Oct-05	30,139	6,895	408	23,652	26,224	2.7	613	13.8	3,185	-2,572
09-Oct-05	30,654	6,958	408	24,104	26,683	2.8	656	13.8	3,235	-2,579
16-Oct-05	30,771	6,998	408	24,181	23,390	16.6	3,443	12.8	2,652	791
23-Oct-05	30,771	6,662	408	24,517	24,145	14.6	3,126	12.9	2,754	372
30-Oct-05	30,771	6,705	408	24,474	24,472	13.1	2,827	13.1	2,825	2
06-Nov-05	30,796	6,031	408	25,173	25,050	13.5	2,999	13.0	2,876	123
13-Nov-05	30,796	6,038	408	25,166	25,425	11.9	2,673	13.0	2,932	-259
20-Nov-05	30,796	5,050	408	26,154	26,279	12.2	2,839	12.7	2,964	-125
27-Nov-05	30,796	4,508	408	26,696	26,934	12.0	2,856	13.0	3,094	-238
04-Dec-05	30,796	3,771	449	27,474	27,533	12.8	3,124	13.1	3,183	-59
11-Dec-05	30,796	4,034	449	27,211	28,408	8.0	2,026	12.8	3,223	-1,197
18-Dec-05	30,796	3,010	449	28,235	27,908	13.9	3,447	12.6	3,120	327
25-Dec-05	30,796	1,555	449	29,690	29,029	15.8	4,043	13.2	3,382	661
01-Jan-06	30,796	1,645	449	29,600	26,358	26.9	6,270	13.0	3,028	3,242
08-Jan-06	30,807	1,631	449	29,625	28,379	17.0	4,297	12.1	3,051	1,246
15-Jan-06	30,807	1,501	449	29,755	28,870	15.6	4,024	12.2	3,139	885
22-Jan-06	30,807	1,483	449	29,773	28,429	17.4	4,409	12.1	3,065	1,344
29-Jan-06	30,807	1,498	449	29,758	28,472	17.2	4,359	12.1	3,073	1,286
05-Feb-06	30,807	2,075	449	29,181	28,344	15.4	3,894	12.1	3,057	837
12-Feb-06	30,807	2,752	449	28,504	27,916	14.7	3,645	12.3	3,057	588
19-Feb-06	30,807	2,777	449	28,479	27,876	14.7	3,655	12.3	3,052	603
26-Feb-06	30,807	2,715	449	28,541	26,980	18.5	4,464	12.1	2,903	1,561
05-Mar-06	30,807	4,194	587	27,200	27,131	12.6	3,032	12.3	2,963	69
12-Mar-06	30,807	5,151	587	26,243	27,002	9.4	2,256	12.6	3,015	-759
19-Mar-06	30,807	5,213	587	26,181	26,242	12.3	2,857	12.5	2,918	-61
26-Mar-06	30,807	6,077	587	25,317	25,829	10.7	2,442	12.9	2,954	-512

(Table A5 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Price-responsive Demand MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
02-Apr-06	30,807	5,277	587	26,117	25,220	17.3	3,850	13.3	2,953	897
09-Apr-06	30,817	5,516	587	25,888	25,273	16.0	3,571	13.3	2,956	615
16-Apr-06	30,817	5,703	587	25,701	24,344	19.1	4,129	12.9	2,772	1,357
23-Apr-06	30,817	5,733	587	25,671	23,868	21.7	4,569	13.1	2,766	1,803
30-Apr-06	30,817	5,836	587	25,568	23,541	23.1	4,801	13.4	2,774	2,027
07-May-06	30,827	5,089	587	26,325	23,247	29.1	5,926	14.0	2,848	3,078
14-May-06	30,827	5,156	587	26,258	26,194	13.4	3,099	13.1	3,035	64
21-May-06	30,827	4,817	587	26,597	25,627	16.5	3,774	12.3	2,804	970
28-May-06	30,827	5,864	587	25,550	26,072	9.5	2,216	11.7	2,738	-522
04-Jun-06	30,827	3,479	587	27,935	27,476	14.9	3,627	13.0	3,168	459
11-Jun-06	30,852	2,436	587	29,003	28,776	14.4	3,655	13.5	3,428	227
18-Jun-06	30,852	2,521	587	28,918	29,761	10.4	2,731	13.7	3,574	-843
25-Jun-06	30,852	2,571	587	28,868	29,708	10.5	2,732	13.7	3,572	-840
02-Jul-06	30,852	1,701	701	29,851	29,214	14.8	3,842	12.3	3,205	637
09-Jul-06	30,878	1,860	703	29,721	30,752	9.0	2,452	12.8	3,483	-1,031
16-Jul-06	30,878	1,860	703	29,721	29,903	11.9	3,168	12.6	3,350	-182
23-Jul-06	30,878	1,883	703	29,698	29,557	13.0	3,408	12.4	3,267	141
30-Jul-06	30,878	1,983	703	29,598	29,044	14.5	3,736	12.3	3,182	554
06-Aug-06	30,878	1,933	703	29,648	29,489	13.0	3,415	12.4	3,256	159
13-Aug-06	30,878	1,923	703	29,658	29,662	12.3	3,256	12.4	3,260	-4
20-Aug-06	30,878	1,970	703	29,611	29,097	14.2	3,691	12.3	3,177	514
27-Aug-06	30,878	2,015	703	29,566	28,754	15.4	3,935	12.2	3,123	812
03-Sep-06	30,878	3,399	703	28,182	29,760	6.3	1,664	12.2	3,242	-1,578
10-Sep-06	30,878	3,458	703	28,123	28,624	10.0	2,563	12.0	3,064	-501
17-Sep-06	30,878	5,017	703	26,564	28,469	4.8	1,224	12.4	3,129	-1,905
24-Sep-06	30,878	5,323	703	26,258	27,708	6.4	1,576	12.3	3,026	-1,450
01-Oct-06	30,878	5,730	703	25,851	26,243	10.8	2,521	12.5	2,913	-392
08-Oct-06	30,909	5,271	703	26,341	26,768	11.1	2,641	13.0	3,068	-427
15-Oct-06	30,909	5,237	703	26,375	23,698	26.3	5,486	13.5	2,809	2,677
22-Oct-06	30,909	5,615	703	25,997	24,326	20.6	4,439	12.8	2,768	1,671
29-Oct-06	30,909	5,592	703	26,020	24,618	19.3	4,203	12.8	2,801	1,402
05-Nov-06	30,909	5,426	703	26,186	25,194	17.1	3,819	12.6	2,827	992
12-Nov-06	30,909	5,024	703	26,588	25,375	17.3	3,919	11.9	2,706	1,213
19-Nov-06	30,909	5,090	703	26,522	26,352	13.1	3,065	12.3	2,895	170
26-Nov-06	30,909	4,964	703	26,648	26,978	11.0	2,641	12.4	2,971	-330
03-Dec-06	30,909	3,356	703	28,256	27,556	15.3	3,759	12.5	3,059	700
10-Dec-06	30,909	2,408	703	29,204	28,480	15.2	3,858	12.4	3,134	724
17-Dec-06	30,909	1,862	703	29,750	28,015	19.2	4,795	12.3	3,060	1,735
24-Dec-06	30,909	1,409	703	30,203	29,071	17.0	4,389	12.6	3,257	1,132
31-Dec-06	30,909	1,438	703	30,174	26,816	27.7	6,536	13.4	3,178	3,358

Table A6 Energy Production Capability Forecast

Month	Existing Resource Scenario Forecast Energy Production Capability (GWh)	Planned Resource Scenario Forecast Energy Production Capability (GWh)
Jul 2005	16,005	16,005
Aug 2005	16,786	16,786
Sep 2005	14,911	14,911
Oct 2005	13,933	14,297
Nov 2005	14,901	15,254
Dec 2005	17,116	17,480
Jan 2006	17,740	18,104
Feb 2006	15,038	15,367
Mar 2006	14,932	15,296
Apr 2006	14,371	14,724
May 2006	15,188	15,552
Jun 2006	15,967	16,319
Jul 2006	17,296	17,660
Aug 2006	17,224	17,588
Sep 2006	14,555	14,907
Oct 2006	14,857	15,221
Nov 2006	15,324	15,676
Dec 2006	17,587	17,951

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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	2005-EX233	Anjigami TS - 115/44 kV Regulator VR-1 removed from service	2005-Q3
Northeast	2004-EX210	Hollingsworth TS - 115/12 kV transformer (T1) replaced with new 28 MVA transformer	2005-Q4
Northeast	2004-EX208	New 115 kV tie breaker at Third Line TS between CB 445 & CB 455	2005-Q4
Northeast	2002-070	K24G - 230 kV line between Third Line TS and MacKay TS	2005-Q4
Northeast	2002-070	W23K - 230 kV line between MacKay TS and Wawa TS	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	2005-Q4
Northeast	2002-070	New Third Line TS 230 kVswitchyard with 5 x breaker ring-bus	2005-Q4
Northeast	2004-EX211	Patrick St. TS - 8 oil circuit breakers replaced with SF6 breakers	2006-Q3
Northeast	2003-Ex173	New Gartshore TS - 5x115 kV breaker ring-bus to replace existing Gartshore TS	2006-Q4
Northeast	2002-070	P21G 230 kV cct Upgraded to 374 MVA continuous rating	2006-Q4
Toronto	2003-089	Vaughan MTS #1: Add new 3rd transformer.	2005-Q2
Toronto	2004-113	Cooksville TS reconfigure connections from Applewood Junction	2005-Q3
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

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
Jun 26 2005 2:00 PM	Jul 18 2005 7:00 AM	Bruce HW Plant B TS: T7A, T7B, T7B, T8B, T7-B81HW, B_BUS, T7, T7B, T7B, T8B, T7-B81HW, B_BUS, T7	CWW	3 Day	None	

Table C2 East Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
Jun 09 2005 5:00 AM	Jun 30 2005 6:00 PM	IPBJCT: B5D-B31L	CWW	Non-Recallable	None	
Jun 20 2005 7:00 AM	Aug 12 2005 3:00 PM	Lennox TS: 12R51-T, T51, 12T51-H, T51-K	CWW	7 Day	Lennox Autotransformer Transfer Limit	Limit is <630 MW to <400 MW depending on MX flow

Table C3 Essa Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
Sep 26 2005 5:00 AM	Oct 02 2005 6:00 PM	Parry Sound TS: T2Y, 77T2-E26, T2,	CWW	Non-Recallable	None	
Sep 19 2005 5:00 AM	Sep 25 2005 6:00 PM	Parry Sound TS: 77T1-E27, T1B, T1,	CWW	Non-Recallable	None	
Oct 10 2005 5:00 AM	Oct 16 2005 6:00 PM	Waubaushene TS: T6, 98-E26, T6Q,	CWW	Non-Recallable	None	
Oct 03 2005 5:00 AM	Oct 09 2005 6:00 PM	Waubaushene TS: 98-E27, T5J, T5,	CWW	Non-Recallable	None	
Apr 06 2005 4:00 PM	Oct 28 2005 6:00 PM	Essa TS: R4S, R4	CWW	20 Week	None	

Table C4 Niagara Zone

Dec 31 2003 11:00 PM	Dec 31 2005 6:00 PM	Beck #2 TS: R76-S	CWW	Non-Recallable	None	
Oct 03 2005 7:00 AM	Oct 31 2005 6:00 PM	Carlton TS: T2-A, T2B, T2H, T2	CWW	7 Day	None	
Jun 11 2003 5:00 AM	Dec 31 2005 6:00 PM	Murray TS: SC1, SC1J	CWW	Non-Recallable	None	

Table C5 Northeast Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
Jul 10 2003 8:00 AM	Jun 30 2005 11:59 PM	Inco #4 CTS: 230CC4D60-TD, 230CC4D3-M, T1, 69CC4B1	CWW	Non-Recallable	None	
Nov 14 2005 7:00 AM	Nov 30 2005 6:00 PM	Hanmer TS: R6-T6, 33T6-W, 33T6-T6, T6	CWW	3 Day	None	
Feb 26 2005 11:30 AM	Dec 31 2005 11:59 PM	Mackay TS: 591, SAULT#1::MACKAY_TS::BATCHEWANA,	CWW	Non-Recallable	None	
Feb 26 2005 7:00 PM	Dec 31 2005 11:59 PM	Third Line TS: #2-SAULT-LINE::MACKAY_TS::THIRD_LINE_TS, 584, 592	CWW	Non-Recallable	None	
Jun 27 2005 8:00 AM	Jul 09 2005 6:00 PM	P21G P8 JCT: P21G::MISSISSAGI_TS::P21G_P8_JCT, P21G::P21G_P8_JCT::THIRD_LINE_CTS, 34-P21G	CWW	4 Day	None	
May 03 2005 8:00 AM	Jun 30 2005 11:59 PM	Inco #4 CTS: T1	CWW	Non-Recallable	None	
May 25 2005 7:45 AM	Dec 31 2005 11:59 PM	Goulais Bay: 581	CWW	Non-Recallable	None	
May 26 2005 7:45 AM	Dec 31 2005 11:59 PM	Third Line TS: SAULT#1::THIRD_LINE_TS::BATCHEWANA	CWW	Non-Recallable	None	
Apr 10 2006 5:30 PM	Apr 17 2006 4:00 PM	Mississagi TS: P22G::ECHO_RIVER_CTS::MISSISSAGI_TS, 34-P22G	CWW	Non-Recallable	None	
Apr 24 2006 5:30 PM	May 01 2006 5:00 PM	Mississagi TS: 34-P21G, P21G::MISSISSAGI_TS::P21G_P8_JCT, P21G::P21G_P8_JCT::THIRD_LINE_CTS	CWW	Non-Recallable	None	
Jun 22 2003 9:54 PM	Dec 31 2005 6:00 PM	Hearst TS: SC3, SC4Y, SC3B, SC4	CWW	4 Week	None	

Table C6 Northwest Zone

Mar 28 2003 10:02 PM	Dec 31 2005 6:00 PM	Port Arthur TS #2: T1BY, T1, T1-B, 7-P1P	CWW	30 Day	None	
Jan 23 2004 12:01 AM	Dec 31 2005 11:59 PM	Agimak DS: T2, T2-L	CWW	Non-Recallable	None	

Table C7 Ottawa Zone

Jun 25 2004 6:00 PM	Dec 31 2005 11:00 PM	Masson-HQ CGS: H9A-L	CWW	Non-Recallable	None	

Table C8 Southwest Zone

Jun 20 2005 7:30 AM	Jun 30 2005 4:00 PM	Goderich TS: SC1B, T1B, SC1, BJ, B_BUS	CWW	Non-Recallable	None	
Apr 07 2004 8:30 AM	Dec 31 2005 6:00 PM	Beach TS: D1L34	CWW	Non-Recallable	None	
Jun 03 2005 6:30 AM	Jun 30 2005 3:00 PM	Trafalgar TS: KL37		5 Day	None	
Jul 04 2005 7:30 AM	Jul 14 2005 4:00 PM	Goderich TS: Y_BUS, YJ, T2Y, SC2Y	CWW	Non-Recallable	None	
May 24 2005 7:00 AM	Jul 29 2005 2:00 PM	Milton SS: KL572	CWW	5 Day	None	
Dec 04 2004 5:16 AM	Dec 31 2005 6:00 PM	Birmingham TS: 50-B11	CWW	Non-Recallable	None	
Oct 27 2003 11:43 AM	Dec 31 2005 6:00 PM	Gage TS: T2Q, T2-P, T2	CWW	Non-Recallable	None	

Table C9 Toronto Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
Oct 03 2005 5:00 AM	Nov 18 2005 6:00 PM	Manby East TS: TR5-T, T5-H2, T5, TR5-S	CWW	4 Week	None	
Mar 06 2006 5:00 AM	Apr 14 2006 6:00 PM	Manby East TS: T5-H2, T5, TR5-S, TR5-T	CWW	4 Week	None	
Oct 07 2005 5:00 AM	Dec 09 2005 6:00 PM	Claireville TS: HT14	CWW	8 Week	None	
Dec 14 2004 11:00 AM	Dec 31 2005 6:00 PM	Manby East TS: W8-P19, W7-P19, T8W, T7W	CWW	Non-Recallable	None	
Dec 25 2005 7:00 AM	Jan 20 2006 6:00 PM	Pickering B SS: L27R, P27C::CHERRYWOOD_TS::PICKERING_B_SS, T5L27	CWW	2 Day	None	
Dec 25 2005 7:00 AM	Jan 20 2006 6:00 PM	Cherrywood TS: KL27, P27C::CHERRYWOOD_TS::PICKERING_B_SS, L26L27	CWW	2 Day	None	
Oct 03 2005 7:00 AM	Oct 28 2005 6:00 PM	Pickering A SS: P9C::PICKERING_A_SS::CHERRYWOOD_TS, T4L9, L9Q	CWW	2 Day	None	
Oct 03 2005 7:00 AM	Oct 28 2005 6:00 PM	Cherrywood TS: P9C::PICKERING_A_SS::CHERRYWOOD_TS, KL9, L9L23	CWW	2 Day	None	
Jun 06 2005 7:00 AM	Jul 01 2005 6:00 PM	Pickering A SS: P8C::PICKERING_A_SS::CHERRYWOOD_TS, L8D, T2L8	CWW	2 Day	None	
Jun 06 2005 7:00 AM	Jul 01 2005 6:00 PM	Cherrywood TS: P8C::PICKERING_A_SS::CHERRYWOOD_TS, KL8, L8L24	CWW	2 Day	None	
Oct 30 2006 6:00 AM	Dec 01 2006 5:00 PM	Bridgman TS: T14X-H, T14, T14-L14W, T14Y-B	CWW	10 Day	None	
Jun 06 2005 7:00 AM	Jun 30 2005 6:00 PM	Pickering A SS: P6C::CHERRYWOOD_TS::PICKERING_A_SS, L6K, T1L6	CWW	2 Day	None	
Jun 06 2005 7:00 AM	Jun 30 2005 6:00 PM	Cherrywood TS: P6C::CHERRYWOOD_TS::PICKERING_A_SS, DL6, L3L6	CWW	2 Day	None	
Jun 17 2004 10:59 AM	May 01 2006 8:00 PM	Markham MTS #1: SC1	CWW	Non-Recallable	None	
Sep 22 2004 9:31 AM	Dec 31 2005 6:00 PM	Bermondsey TS: SC4Y, SC4	CWW	Non-Recallable	None	

Table C10 West Zone

Start Date/Time	End Date/Time	Equipment	Outage Type	Recall	Impact	Reduction in Limit
Jul 25 2005 6:00 AM	Aug 04 2005 6:00 PM	Strathroy TS: M2, T2Q, O_BUS, BO	CWW	2 Day	None	
Mar 14 2003 12:52 PM	Dec 31 2005 11:59 PM	Bunce Creek-USA TS: PS3	CWW	Non-Recallable	None	
Apr 20 2003 5:35 PM	Dec 31 2005 6:00 PM	Sarnia Scott TS: B3N::BUNCE_CREEK-USA_TS::SARNIA_SCOTT_TS, 40-B3N	CWW	Non-Recallable	FABC, BLIP	FABC - Up to 150 MW of penalty to the FABC limit BLIP - Positive and Negative BLIP limits are restricted to 3000 MW and -1000 MW respectively
Aug 31 2003 11:59 PM	Dec 31 2006 11:59 PM	Bunce Creek-USA TS: PS3	CWW	Non-Recallable	None	
Aug 18 2004 5:00 AM	Dec 31 2005 3:00 PM	Wanstead TS: SC1, SC1B	CWW	Non-Recallable	None	

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