

Annex I

Updated Scenarios and Requirements

September 13, 2005

1.1 Background

On March 30, 2005 the Ontario Energy Board (Board or OEB) issued its report “Natural Gas Regulation in Ontario: A Renewed Policy Framework Report on the Ontario Energy Board Natural Gas Forum” (NGF Report). In the NGF report the Board described the steps that it intended to follow to address the issues identified in its report. The Natural Gas Electricity Interface Review (NGEIR) is one of the first steps that the Board has taken to implement the new policy framework.

NGEIR was announced on June 10, 2005. The following work has been commenced:

Stakeholder consultations;

Identification of potential services that gas-fired generators may wish to utilize;

Research describing how gas-fired generation services and cost recovery has been managed in other jurisdictions;

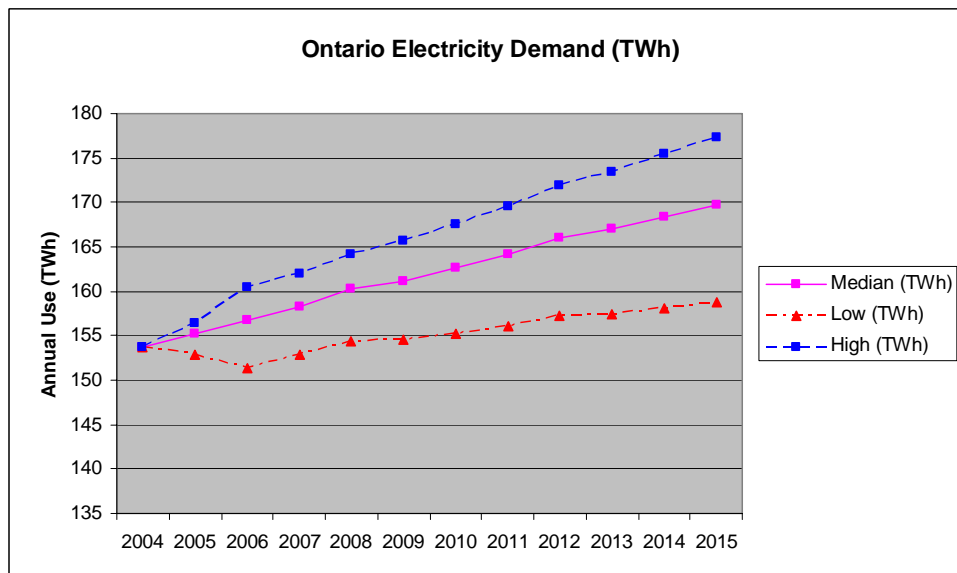
Development of potential generation demand scenarios (based on the Independent Electricity System Operator’s (IESO) July 8, 2005 10-Year Outlook). The forecast period is 2005-2012; and

Identification of potential facilities requirements along with a range of costs for these new facilities.

1.2 Projected Ontario Power Demand

Based on the IESO’s demand forecast projected electricity demand in Ontario is as illustrated in Chart 1 below:

Chart 1



Annex I

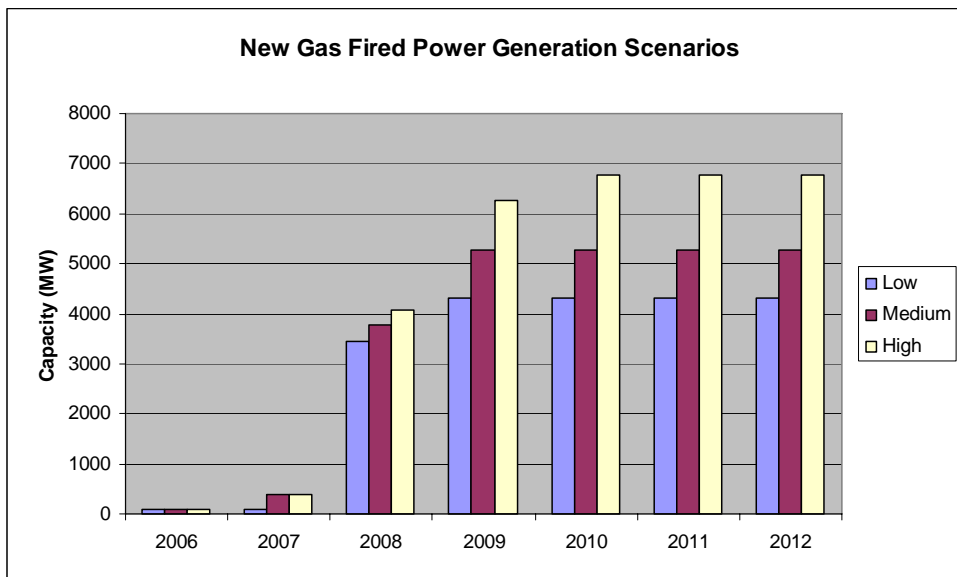
Updated Scenarios and Requirements

September 13, 2005

1.3 New Gas-Fired Power Generation

Two timelines for building new gas-fired generation were assessed under the low, medium and high demand scenarios. The scenarios were based on the IESO's report adjusted to reflect the most recent information as at August 1, 2005. The chart 2 below illustrates the potential new generation build scenarios based on the base case time line. The alternative time line delayed the 2008 - 2010 generation builds approximately 1 year.

Chart 2



Annex I

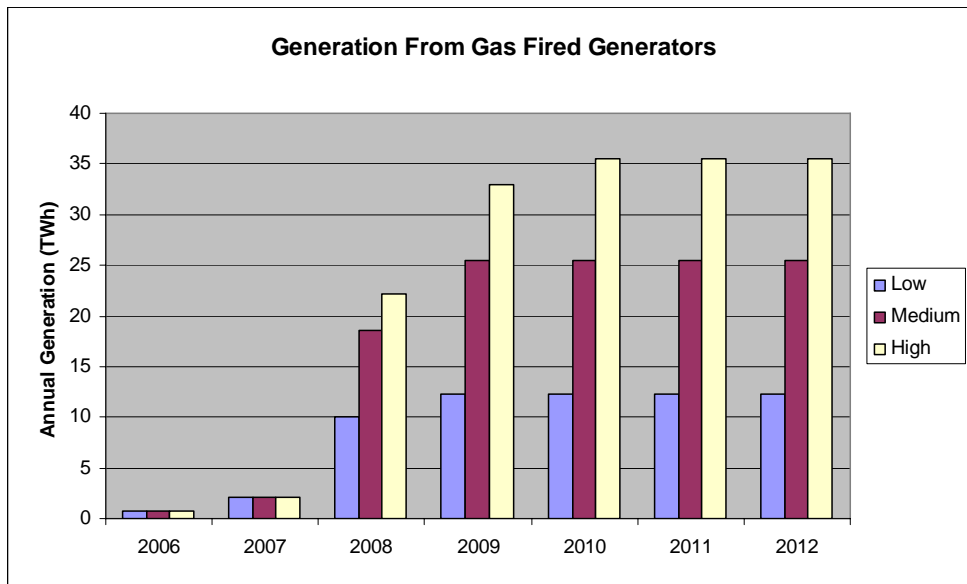
Updated Scenarios and Requirements

September 13, 2005

1.4 Annual Generation from Gas-Fired Power Generators

Based on the projected new gas-fired generation mix and key assumptions for gas utilization rates estimates of annual generation from new gas-fired generators was projected. The results are illustrated below in Chart 3 for each of the scenarios.

Chart 3



1.5 Potential Flow Scenarios

Facilities required in Ontario will be a function of the flows into the province. Gas arriving via the TransCanada system, with delivery from the north at Toronto (i.e., Parkway), provides deliverability in the Toronto area and east. Deliveries from the north and east (i.e., LNG post 2010) could reduce the overall in Ontario facilities that could be required to serve the Ontario markets. Deliveries arriving from the west end of the system at Dawn, if generators were east of Dawn, would require additional facilities to move the gas from Dawn to the generators' sites.

For new gas-fired generation it is not clear today who will contract for upstream capacity and where the capacity will be connected. Commitments for transmission service to Ontario could be made by generators, marketers or gas utilities. As a consequence it is difficult to determine with precision the actual facilities that could be required. Potential likely scenarios were developed and assessed to determine possible facilities requirement and cost estimates. These scenarios are not intended to be determinative nor a recommendation but rather to provide a range of possible scenarios that could

Annex I

Updated Scenarios and Requirements

September 13, 2005

emerge and to facilitate discussion around a common framework so that parties would have a better understanding of the key issues.

Factors which could determine what new facilities might be required and where they might be built could include:

The gas supply source and type (firm versus interruptible);

The amount of new gas-fired power generation built;

Location of the new generators (urban vs. rural, proximity to transmission and storage, and east or west of Dawn);

The delivery point of gas to Ontario;

The characteristics of the generator (peaking, intermediate or base load, fuel rate);

The types, attributes and pricing of new gas services for generators;

The contracting practices of generators (supply, transportation, storage and distribution). The mix of storage and transmission facilities and the underlying contracts (i.e., deliverability, space and contract demands);

Power contract terms and conditions that the generators enter into with the OPA or other parties such as:

- The price index used to determine the power price (i.e., NGX Dawn Daily Index could bias delivery to Dawn)
- The underlying risk components of the power supply contract (how costs are recovered and embedded in the power contracts)

Gas nominations, provision of intraday nominations and alignment with the power dispatch windows;

Response of wholesale service providers and the range of products and services that they provide;

Degree of wholesale gas competition within the Ontario Market; and

Rules, regulations and gas contract terms and conditions for gas services provided to generators that allow for the movement of gas within Ontario.

Annex I

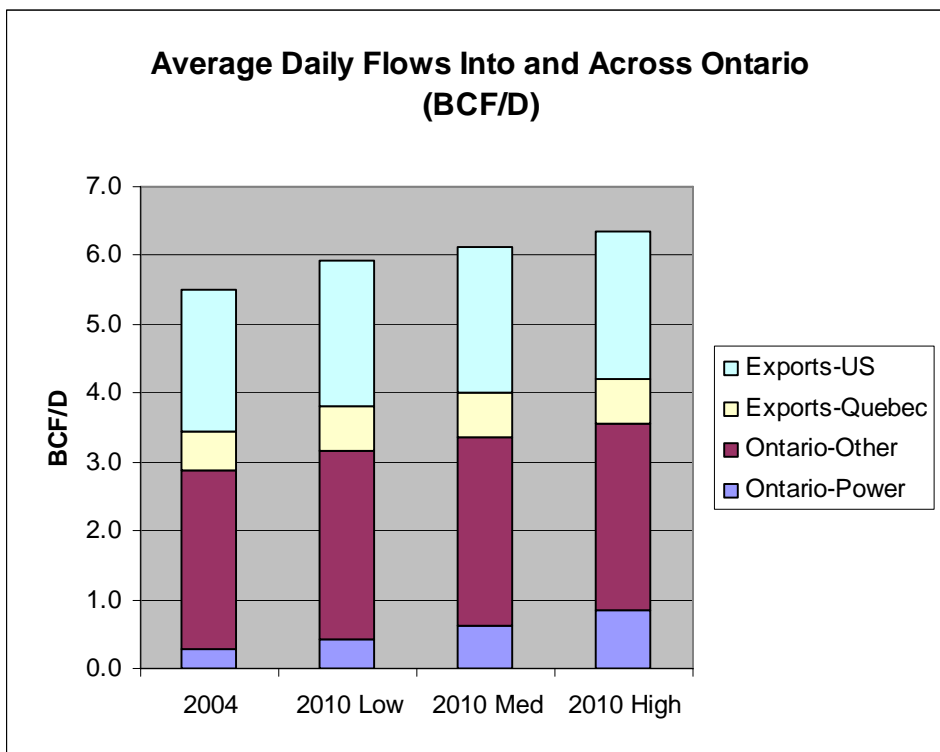
Updated Scenarios and Requirements

September 13, 2005

1.6 Upstream Average Day Flows

Based on the high, medium and low scenarios, potential gas flows into and across Ontario were assessed. Gas delivered to and through Ontario could grow from the 2004 average day level of 5.5 BCF/D to about 5.9 in the low case and 6.4 in the high case. In 2004, the gas flows for power generation was 0.24 BCF/D and this could grow to about 0.43 – 0.84 BCF/D by 2010 depending on the factors described in Chart 4 below.

Chart 4



Annex I

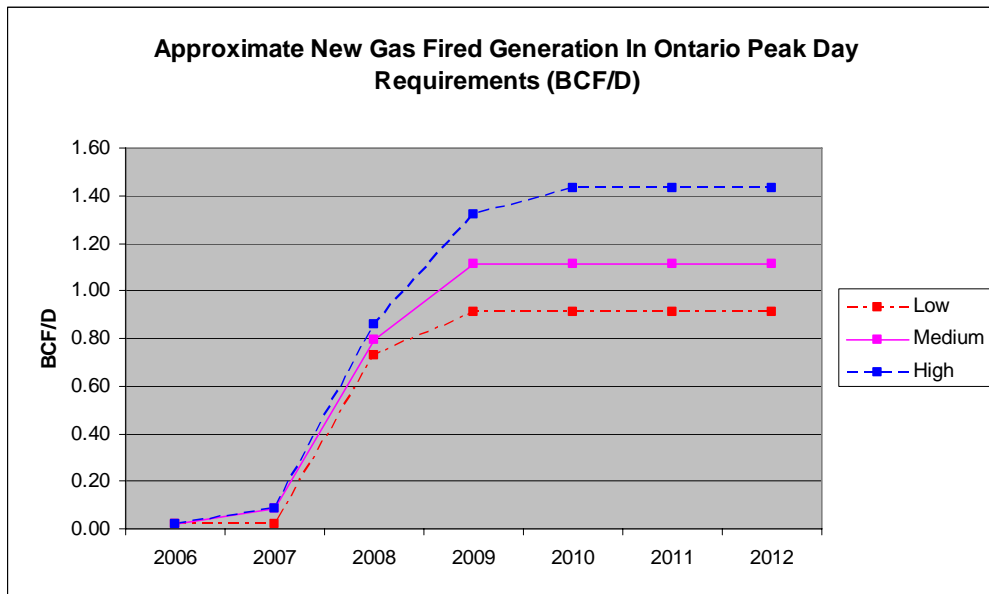
Updated Scenarios and Requirements

September 13, 2005

1.7 In Ontario Peak Day Requirements

Approximate in Ontario peak day requirements were estimated based on the estimated new gas-fired generation capacity under the high, medium and low scenarios as illustrated in chart 5 below. This compares to the winter 2004-2005 Dawn-Trafalgar system winter peak day design of about 4.7 BCF/D.

Chart 5



1.8 Gas Use by New Gas-Fired Generators

Based on the above projected gas-fired generation mix and utilization rates estimates of annual gas requirements were developed. By 2012 gas use by gas-fired generators could grow to about 305 BCF/year in the high case and about 156 BCF/year in the low case.

1.9 Storage Space and Storage Deliverability

Depending on the type of new generation and how new generators and/or their suppliers choose to flow gas to Ontario various levels of storage space and deliverability will be required. Storage space required by 2010 could range from a low of about 6.7 BCF to a high of about 16.6 BCF. Storage deliverability by 2010 at 1.2 % could range from 80 MMCF/D to 200 MMCF/D, at 5% from 335 to 830 MMCF/D and at 10% from 672 to 1660 MMCF/D. Upstream and downstream generator contracting decisions and gas flow routing choices by generators will determine the level of deliverability that generators will require from storage. For example, deliveries via a southern route (although requiring a Dawn to Parkway build for

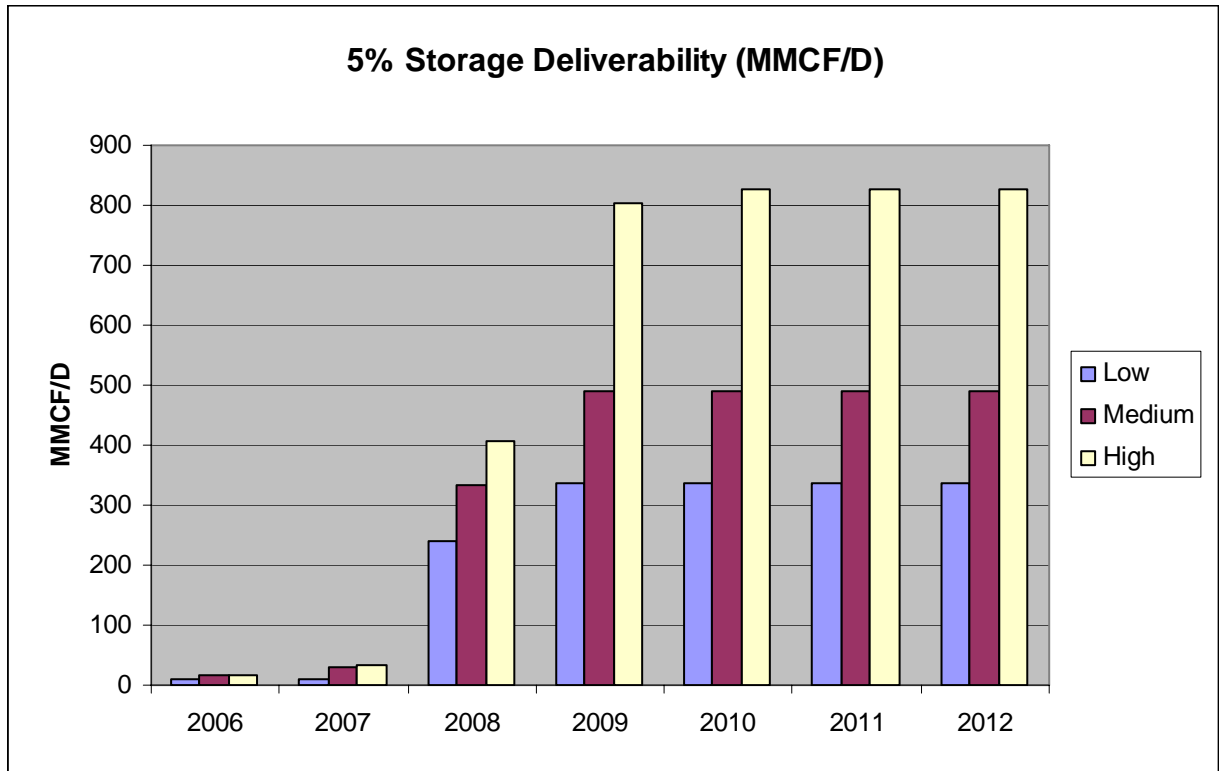
Annex I

Updated Scenarios and Requirements

September 13, 2005

generators east of Dawn) would provide shippers greater storage deliverability options. Chart 6 below shows 5% storage deliverability under the three scenarios.

Chart 6



1.10 Facilities Required to Provide New Gas Services

For new gas-fired power generation to operate efficiently in Ontario new facilities would be required. These facilities would likely include:

- Upstream pipeline capacity;
- In Ontario transmission and compression;
- Storage space and deliverability; and
- Distribution laterals, services, meters and regulation.

The actual facilities set and costs that could be required will be a function of the factors described in Section 1.5. One of the critical factors is where and how the additional gas is delivered to Ontario. To account for this, the analysis looked at three different possibilities for gas supply for each gas demand

Annex I

Updated Scenarios and Requirements September 13, 2005

scenario. Based on input from stakeholders, ranges of estimated costs were developed for each of the three demand scenarios as shown in Table 1.

Assumptions were made for: a) generator locations, b) gas supply delivery location, c) generator load factors, and d) load balancing services. Also, it was assumed that the requirement for storage space and deliverability would be a function of generators' load profile and upstream arrangements. Storage space and deliverability would be influenced by the service offerings and the cost of such offerings provided by gas utilities, upstream transportation providers, and wholesale service providers. As a consequence it is only possible to estimate a range of utilization and costs at this time. Generally higher deliverability from storage results in overall lower space requirements up to a limit imposed by operational constraints and risk tolerances.

In addition, adequate lead time to construct would be required to ensure new facilities and services are available when needed.

Table 1

2012 TOTAL FACILITIES COST ESTIMATES (\$ Million)						
	Low Scenario		Medium Scenario		High Scenario	
	Low	High	Low	High	Low	High
Dawn To Parkway	75	115	110	170	145	230
Storage (Space & Deliverability)	40	240	55	255	90	270
Dist/Reg/Meters	130	225	150	250	205	315
TOTAL Ontario Only	245	580	315	675	440	815
Upstream	30	60	210	255	460	560
TOTAL	275	640	525	930	900	1375
Notes:						
1. Preliminary high level estimates. Costs could vary significantly due to: plant location, lead times, land acquisition, highway crossings and ROWs,						
2. Assumes in the high case 3725 MW served east of Dawn and 3050 MW in the Northwest and cogeneration sourced via TCPL or west of Dawn						
3. Assumed LNG on St. Lawrence only in the high case beyond 2010						

1.11 Generator Services

Generators have indicated that they need more flexible service offerings to effectively manage the risks associated with the demand and price volatility in the Ontario power and gas markets. Some of the services that they have identified are described in the following broad categories:

Enhanced hourly services that allow non-uniform delivery of gas over the day on a firm basis;

Multi-year contracts with negotiated service and pricing for the term of the agreement;

Annex I
Updated Scenarios and Requirements
September 13, 2005

Right to redirect/acquire gas on short notice;

Access to a range of balancing and storage services from multiple suppliers; and

Imbalance management options and services.

Generators believe that the current contractual arrangements with gas utilities do not encompass these service offerings. To provide these services would entail additional costs but with potential benefits.