

Ontario Energy Board



Staff Report to the Board on the
2015 Natural Gas Market Review

EB-2015-0237

April 6, 2016

intentionally blank

Table of Contents

1	The 2015 Natural Gas Market Review.....	1
2	Recent Market Developments & Forecast.....	3
	2.1 Demand	3
	2.2 Supply.....	4
	2.3 Prices.....	5
3	Key Issues & Implications	7
	3.1 Basin & Path Diversity	7
	3.2 Natural Gas Market Driver Uncertainty.....	7
	3.3 Implications.....	8
4	Conclusion.....	9
Appendix	References & Links.....	10

ACRONYMS

Bcfd	billion cubic feet per day
GHG	Greenhouse Gas
MMBtu	million British thermal units
NGMR	Natural Gas Market Review
GRAM	Quarterly Rate Adjustment Mechanism
USD	U.S. dollars
WCSB	Western Canadian Sedimentary Basin

1 The 2015 Natural Gas Market Review

Purpose & Objectives

In its November 25, 2015 [letter](#) to stakeholders, the OEB initiated its 3rd NGMR consultation process to consider:

- the short to medium term impact of recent trends and/or changes in the factors driving North American and Ontario natural gas supply, demand and prices (e.g. geographic expansion of natural gas distribution service in Ontario)
- further developments with respect to issues raised in the 2014 Natural Gas Market Review, such as the impact of winter 2013/14 natural gas prices on distributor and large customer approaches to gas supply planning and the implications, if any, for the OEB's QRAM mechanism going forward
- the potential impact of cap and trade markets and carbon pricing on North American and Ontario natural gas markets
- the implications of recent and anticipated market developments for planning natural gas distribution asset investments over the longer term

Information and insight gained through this consultation will assist the OEB to identify the potential need for modifications to the OEB's regulatory framework/policies; and to review utility applications that affect the rates and quality of service to customers.

The Forum

The focal point of the consultation was the 2015 NGMR *Forum*, held in the OEB's offices and webcast on January 21, 2016. To provide information on recent and prospective North American natural gas market trends for *Forum* discussion purposes, a [report](#) and related [slide presentation](#) (together, the *2015 Report*) prepared for OEB staff by Navigant was posted beforehand.¹

Stakeholders provided [feedback](#) on a preliminary list of topics to be included in the *Forum* and notified OEB staff as to whether they intended to give a *Forum* presentation. Six stakeholders gave a total of 9 presentations on topics in the three *Forum* sessions.² The *Forum* brought together some 50 participants from 28 organizations to:

¹ Page/slide numbers refer to the report/slide presentation, respectively. Unless indicated otherwise, market information provided here is from the *2015 Report*, which should be considered authoritative in the event of any inconsistency.

² *Forum* presentations are posted on the [2015 NGMR consultation](#) webpage.

- share information on market developments since the Dec. 2014 NGMR stakeholder conference and
- exchange views on the extent to which market developments have affected the Ontario gas sector outlook, especially for prices and future pipeline infrastructure

Among the main subjects of discussion, many of which were further explored by stakeholders in written comments, were:

- Natural gas prices have declined more rapidly than previously expected due to higher than forecast gas production combined with little change in gas demand.
- The outlook for near-term Ontario market prices has changed markedly. Due to slower than expected demand growth and continued plentiful supply, the average annual Dawn price in 2020/21 is now forecast to be about 35% lower compared to the 2014 forecast
- Gas-fired electric power generation will be a key factor determining the rate of increase in overall Ontario gas consumption beyond 2020. Key drivers will be changes in nuclear generation during planned refurbishments and the impact of Ontario's greenhouse gas (GHG) Cap and Trade Program.
- Gas transportation options available on Ontario's secondary gas market will be increasingly important to large industrial gas customers, especially during winter peak periods, given the potential for GHG pricing to boost the cost of gas.

This *Staff Report* summarizes information collected in the consultation on the subject areas within the scope of the 2015 NGMR noted above, including stakeholder views on the issues raised as expressed in *Forum* presentations and [written comments](#).³

³ Links to stakeholder written comments are provided in the Appendix.

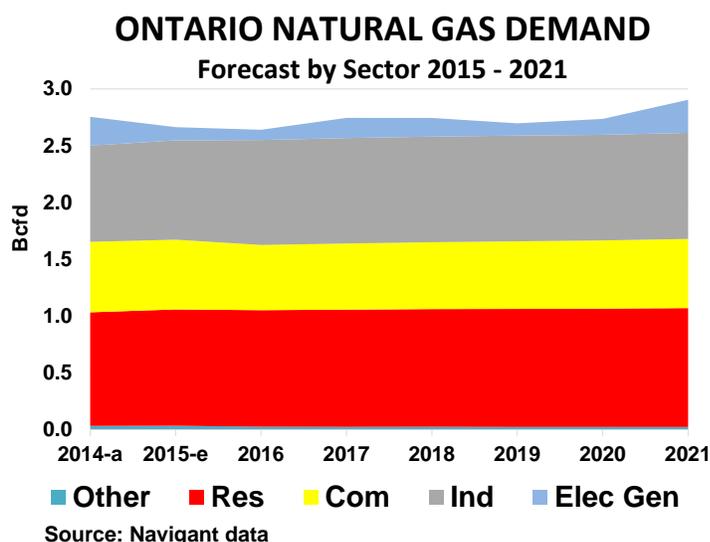
2 Recent Market Developments & Forecast

The 2015 *Forum* considered updated information on key drivers of and forecasts for natural gas supply, demand and prices as discussed below.⁴

2.1 Demand

Ontario natural gas consumption is now forecast to climb somewhat more slowly compared to previous expectations. Whereas the *2014 Report* called for Ontario demand to reach 2.95 Bcfd in 2020, the current forecast is for 2.7 Bcfd in 2020, rising to 2.9 Bcfd in 2021.⁵

Consistent with the *2014 Report*, gas-fired electricity generation and industrial (mainly oil sands related) gas consumption are expected to continue to be key factors affecting Ontario and Canadian markets, respectively, to 2021 and beyond.⁶



According to the *2015 Report*, Ontario gas demand – including any early ‘carbon price’ impact of Ontario’s Cap and Trade Program – is forecast to remain relatively stable for all sectors but one. The exception is electricity generation, which is expected to fluctuate with changes in renewable generation capacity in the near term and after 2020, due to reliance on additional gas generation while some of Ontario’s nuclear fleet is being refurbished.⁷

⁴ In written comments, Union states that “The general conclusions of the ICF and Navigant forecasts are for the most part aligned. However, differences in forecast methodology and modelling assumptions resulted in variations in their specific forecasts.” [Union](#); p. 10.

⁵ Navigant’s [2014 Natural Gas Market Review Final Report](#) (*2014 Report*) called for Ontario demand to reach 2.95 Bcfd in 2020 (Figure 33; p. 33). Navigant’s current forecast is for 2.7 Bcfd in 2020, rising to 2.9 Bcfd in 2021. See *2015 Report*; slide 9.

⁶ See *2014 Report*; p. 32 and *2015 Report*; slides 8 and 9.

⁷ See *2015 Report*; slide 9. Staff notes that the government has recently announced plans to keep in-service through 2024 nuclear capacity previously slated for retirement in 2020, which will have an impact on gas demand between 2020 and 2025.

2.2 Supply

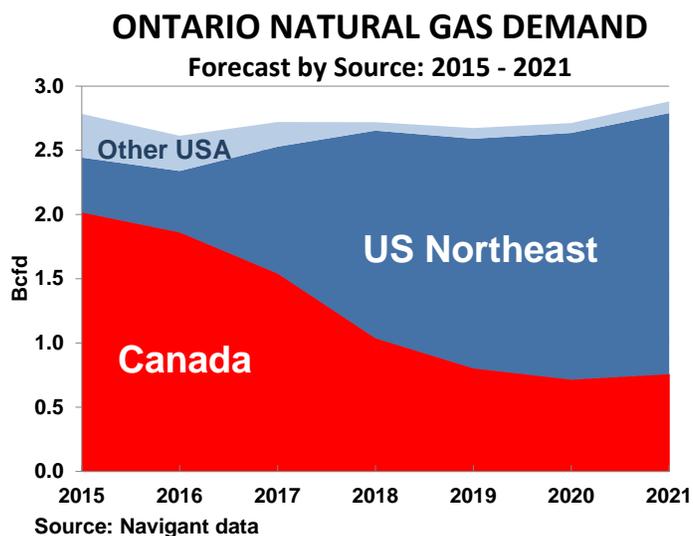
The main theme of the 2014 NGMR was Ontario’s continuing pivot from western (WCSB) to eastern (U.S. northeast) sources of natural gas supply. The *2015 Report* re-examined the drivers behind this trend and updated forecast production and pipeline utilization accordingly.

2.2.1 Production

The *2015 Report* updated projections for North American and Canadian gas production. Gas production growth – from ‘shale gas’ in particular – continues to be a key driver of North American natural gas markets. Overall, the *2015 Report* indicated the change in forecast North American supply for 2020 amounts to an additional 1.6% compared to the *2014 Report* forecast.⁸

The *2014 Report* called for annual average Canadian gas output – primarily from the WCSB – to reach 15.6 Bcfd in 2014 and rise to 17.1 Bcfd by 2020. The *2015 Report* estimates actual 2014 Canadian production was slightly higher at 16 Bcfd. 2021 output, on the other hand, is forecast to be somewhat lower at 16.7 Bcfd, due to greater “displacement” of Canadian sourced gas with supplies from the U.S. northeast than previously expected.⁹

By 2021, U.S. supplies – primarily from the Marcellus and Utica basins – will meet some 74% of Ontario demand, with the balance originating in the Western Canadian Sedimentary Basin (WCSB).¹⁰ Increased access to northeast U.S. shale gas via enhanced pipeline infrastructure (see below) will raise the share of total Ontario gas demand met from shale gas originating in the U.S. northeast from 0.4 Bcfd to 2.0 Bcfd between 2015 and 2021.¹¹



⁸ *2015 Report*, p. 3.

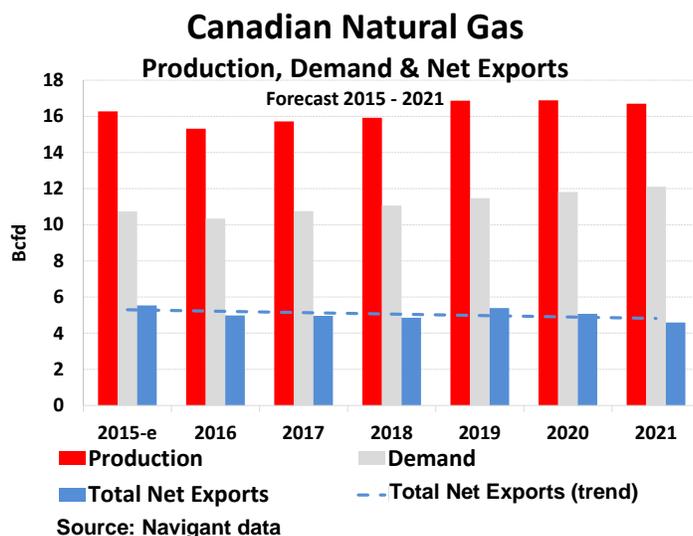
⁹ *2014 Report*; see Figure 27 on p. 28 and *2015 Report*; slide 7; and p. 3.

¹⁰ Navigant data.

¹¹ *2015 Report*, p. 2.

2.2.2 Pipelines and Flows

As mentioned above, Canadian gas production is now expected to rise at a slower rate than previously forecast.¹² A related and equally notable forecast change involves total net Canadian natural gas exports.¹³



Whereas, the *2014 Report* called for total annual net exports to remain relatively stable over the foreseeable future at around 5 Bcfd, the current forecast is for a gradual decline in net exports due to a narrowing gap between Canadian gas production (relatively stable) and domestic demand (slowly rising).

More sluggish demand growth, declining net exports, and increased Ontario access to U.S. northeast supplies are expected to result in a

more rapid decline in gas flows into Ontario on the TransCanada PipeLines' Mainline system originating from the WCSB than previously forecast.¹⁴

For example, whereas the *2014 Report* forecast utilization of the Northern and North Bay Mainline segments would be 39% and 28% respectively, the *2015 Report* estimates actual utilization was about 32% and 18%. Similarly, Western and Northern segment utilization rates in 2020, both forecast in the *2014 Report* to be 35%, are now expected to be about 18%.¹⁵

2.3 Prices

The *2014 Report* called for average annual prices at the Dawn Hub (dashed line in graph below left) to rise from (then) current levels over the period to 2020, when the price was expected to reach \$5.68/MMBtu.¹⁶ According to the *2015 Report*, the opposite has been the case since the winter of 2013/14 (graph below right), resulting in a significantly lower average 2015 price than anticipated last year.¹⁷

¹² *2015 Report*; slide 10.

¹³ Total is the sum of net pipeline and net LNG exports.

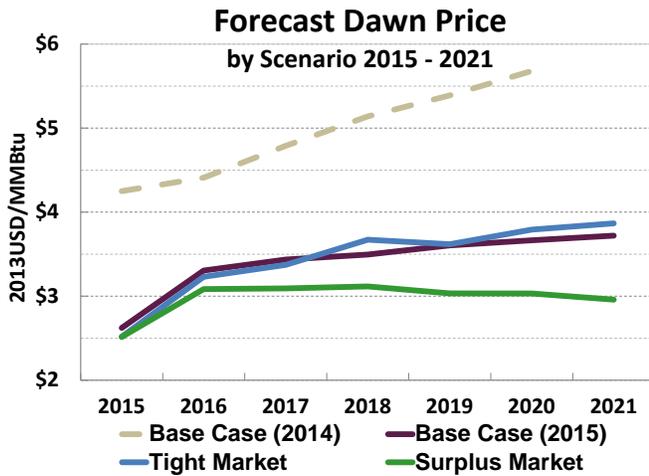
¹⁴ See *2015 Report*; p. 6; and slide 13.

¹⁵ *2015 Report*; Table 2 on p. 6.

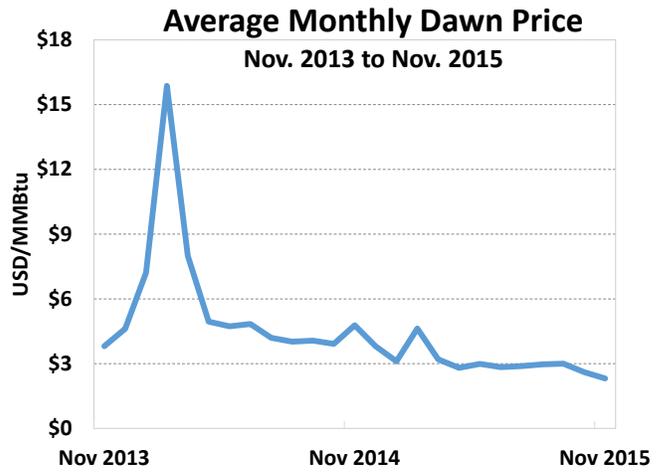
¹⁶ See 'Reference' scenario in the *2014 Report*; p. 41. Prices are 2013 USD unless otherwise indicated.

¹⁷ See *2015 Report*; p. 1. Graph shows actual historical USD prices.

As shown in the graph at left, the 'Base Case' average annual Dawn price is still forecast to rise over the next few years, but more slowly than previously expected, to \$3.72/MMBtu in 2021.¹⁸



Source: Navigant Data



Source: Navigant Data

¹⁸ 2015 Report, slide 16.

3 Key Issues & Implications

The section provides a summary of the key issues raised by stakeholders in written comments submitted following the *Forum* on the issues discussed, including the factors expected to affect markets and prices over the foreseeable future.

3.1 Basin & Path Diversity

Several stakeholders addressed the issue of ‘basin’ and ‘path’ diversity discussed in Session 1 of the *Forum*. Essentially, risk associated with the cost of gas including transportation (i.e. ‘delivered cost’) can be mitigated in part by procuring gas from different supply basins (basin diversity) and/or having access to more than one pipeline route from a given basin (path diversity).

Some stakeholders expressed the expectation that the delivered cost advantage of gas from the U.S. northeast will continue. Others emphasized that access to WCSB supplies including through TCPL’s system should be maintained given the direct path to northwestern Ontario and the potential for increased Canadian shale gas production.

While there was some agreement that exploiting northeastern U.S. gas supplies through more than one pipeline route was a good way to lower risk, the optimum number of alternative paths and the appropriate timing of path development was a source of concern, as discussed below.

3.2 Natural Gas Market Driver Uncertainty

Several stakeholders expressed concern that assets added to increase capacity to deliver gas to Ontario generally or to Dawn specifically could become underutilized before the end of their expected service life if, for example:

- too much capacity from the U.S. northeast into Ontario is developed over a short time
- shale gas production is adversely affected by future environmental restrictions
- future Ontario peak day demand is lower than currently expected due, for example, to the long term impact of carbon pricing or distribution expansion using CNG or LNG.

Underutilized capacity due to declining throughput can have rate impacts. However, as discussed in Session 2 of the *Forum* some Ontario customers cannot easily reduce gas

use when faced with higher prices. IGUA commented that even small changes in the delivered cost of gas can have substantial impacts on large industrial customers using gas for production process purposes.

3.3 Implications

In view of these medium and longer term sources of uncertainty, stakeholders variously suggested that the OEB consider:

- the implications for regulatory policy of market development trends for the assessment of distributor applications involving the recovery of costs over extended periods;
- how incentives or other non-conventional approaches might be employed to optimize the use of existing capacity and potentially defer or avoid new capacity builds
- whether and if so how non-conventional approaches (e.g. LNG or CNG) should be evaluated in the context of expanding gas distribution to unserved communities¹⁹
- the implementation of Ontario's Cap and Trade Program, including the role of natural gas distributors and impact on the sector.²⁰
- how the OEB might develop a perspective on the relationship between distributor infrastructure investments and Ontario's secondary market for gas transportation capacity.

¹⁹ Some stakeholders also commented on OEB policy regarding funding expansion into rural and remote communities, which relates to the scope of the OEB's generic proceeding on Distribution Expansion (EB-2016-0004) currently underway.

²⁰ The OEB's consultation to develop a natural gas regulatory framework to support the implementation of Ontario's Cap and Trade program (EB-2015-0363) was announced on March 10, 2016. The scope of the consultation, as described in the OEB's [cover letter](#), includes:

- identifying issues regarding the natural gas distributors' Cap and Trade activities and developing options to address these issues within the context of the OEB's regulatory responsibility
- developing approaches to assess natural gas distributors' Compliance Plans and methods for cost recovery.

4 Conclusion

The theme emerging from the 2015 NGMR is natural gas market forecast uncertainty. Even the near-term Ontario market forecast has changed markedly since last year as factors within and beyond Ontario's borders combined to lower forecast prices to levels not foreseen a year ago.

This theme was evident throughout the *Forum* discussion and in many written comments. Stakeholder concerns focussed on one or another source of especially medium to longer term market uncertainty. Comments ranged from the potential impact on future demand of Ontario's Cap and Trade Program and to a lesser extent distribution expansion, to the effect on supply of pipeline investment inside and outside Ontario.

Several stakeholders remarked in the *Forum* and written comments that uncertainty around future market outcomes has implications for the OEB's work, the consideration of applications involving long-term gas infrastructure commitments in particular. Some stakeholders suggested in written comments that a common understanding of long term market drivers and the potential range of market outcomes related to them would facilitate the assessment of such applications.

With this in mind, staff recommends that the OEB consider:

- how best to foster this shared understanding; and
- how the resulting long-term market perspective might be used in OEB proceedings.

On a closing note, stakeholders expressed interest in gaining a perspective on the important role played by Ontario's secondary gas markets. Staff will therefore consider how a 'primer' on this subject might be integrated into the next NGMR *Forum*.

APPENDIX

Appendix

References

Navigant Consulting Ltd. [2014 Natural Gas Market Review Final Report](#); prepared for the Ontario Energy Board (EB-2014-0289); December 22, 2014

[2015 Natural Gas Market Review Summary Report](#); prepared for the Ontario Energy Board (EB-2015-0237); December 28, 2015

[2015 Natural Gas Market Review - Stakeholder Forum](#) prepared for the Ontario Energy Board (EB-2015-0237); December 21, 2015

Links to Stakeholder:

Input on Forum Agenda

Industrial Gas Users Association 

Northeast Midstream LP 

TransCanada PipeLines Limited 

Vulnerable Energy Consumers Coalition 

[RETURN TO MAIN TEXT](#)

Post-Forum Written Comments

Association of Power Producers of Ontario 

Canadian Manufacturers & Exporters 

Enbridge Gas Distribution Inc. 

Energy Probe 

Federation of Rental Property Owners 

Industrial Gas Users Association 

London Property Management Association 

School Energy Coalition 

TransCanada PipeLines Limited 

Union Gas 

Vulnerable Energy Consumers Coalition 

[RETURN TO MAIN TEXT](#)