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POWER PRODUCERS
OF ONTARIO

Association of Power Producers of Ontario

Submission for the
NATURAL GAS ELECTRICITY INTERFACE REVIEW (NGEIR)

To Fred Hassan
(Consultant for the Ontario Energy Board)

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The Association of Power Producers of Ontario (APPrO) has prepared this document in response to a request from Fred Hassan acting as a consultant to the Ontario Energy Board for information to support the initial fact-finding phase of the Natural Gas Electricity Interface Review (NGEIR).

This paper will outline some of the key areas of interest to APPrO. The document will incorporate many of the ideas and comments presented in APPrO's original submission to the Natural Gas Forum. Our comments represent the general view of the organization and may differ in some cases from the positions of individual members. It is intended only to meet the request for information and is not intended to represent APPrO's final view on any matter touched upon herein.

The timeframe provided in this process is rather short and as a result this document will only touch on a few of the key areas under the initial phase of the review. APPrO and its members are very interested in participating in this process and in its advancement. We will provide any additional information we can moving forward in order for you to complete your report to the Ontario Energy Board.

The document will provide a description of new gas services that gas generators need, value and use and some examples of how some of these services may be used in other jurisdictions. It will also look at the location criteria for electricity as it relates to the natural gas infrastructure.

1. New Services or Changes to Existing Services

The gas market has been designed to meet a customer base with a relatively stable load profile over a period of time. The power generators gas operation has historically been viewed as a base load with a high load factor. This can be explained by the fact that many of the early gas-fired generation projects in the province were cogeneration projects, which both generated power and supplied steam to industrial plants. Gas generators typically forecast their production on a day-ahead basis but are physically dispatched in real time based on hourly market conditions. Differences between day-ahead gas nominations and real time consumption are balanced on a day to day basis.

The role of the gas-fired generator are changing with the increased use of gas-fired generation to meet the electric market intermediate load and peaking requirements. Gas-fired generation is being called upon to meet the high electricity demand periods but is typically requested to shutdown during low load periods. This changing environment has increased the challenges created by the disconnection between scheduling in the electricity and gas markets. While electricity is managed on an hourly basis (generators dispatched on a 5 minute basis) natural gas is managed on a daily basis. APPrO believes that it is time for changes in the gas market in Ontario to better reflect its inter-relationships with the electricity market, changes which would allow generators access to new services and increased operational flexibility.

New services and increased operational flexibility must be developed so that the industry can deal efficiently between the electricity and gas market. Generators must be provided with the tools to manage the risks associated with the demand and price volatility that exists in both of these markets. Service changes must be implemented in consultation with the customers who will be using the services. The LDC's and pipelines must work together with their customers to develop these new services and improve the operational flexibility.

The services must also be available at reasonable cost based prices. If the price for the service is not reasonable then the service will be impractical and will pose a barrier to the development of gas-fired generation. Although the second phase of this process will consider costs and who pays, it must take into account cost levels that will be imposed on various gas generator technologies (i.e. transport/distribution costs to intermediate duty generators can be significantly different than for peaking duty generators) to ensure that toll structures and levels do not act as barriers.

The main areas of interest for APPrO and its members are described below:

a. Unbundling of Assets and Services

The LDC's should provide full access to all assets and services used in their portfolio to manage a customers' gas consumption at their plant location. A customer must be allowed to disaggregate the bundled services and select only the type, or part of the service they require for their facility. The unbundled services should be structured to enable rather than restrict their utilization and pricing must be reasonable. This is not just specific to generators but to all customers on the LDC system. Furthermore, it is important that the LDCs continue to offer bundled services for those customers that prefer this type of service.

The unbundling of assets and services must also be applied consistently throughout Ontario. The unbundling of assets or the release of assets with its intrinsic flexibility will in turn enhance the efficiency and operation of the customer's plant. The ability of the customer to manage this asset freely and seamlessly from one unbundled LDC to another unbundled LDC is critical to the success of unbundling across Ontario.

b. Bypass

Power generators should also have the option to connect directly to the transportation pipeline whether that is TCPL or the Dawn to Trafalgar system without contracting for distribution services. The power generator may be able to economically connect to the transport pipeline at or lower than that of the LDC. They may also be able to manage their transportation, distribution and storage on a daily/hourly basis under the same guidelines as the LDC. If that is the case then there is no reason why they should not be allowed to connect directly to the transportation system.

c. Negotiated Contracts

The LDC should be able to compete to provide services for customers who can connect to the pipeline themselves by way of a negotiated rate for multiple years. The development of power generating plants has significant capital outlay that must be supported by long term supply and service contracts. The risk of LDC's increased costs year over year due to changing rate design and operational costs could inevitably lead to large increases and unpredictable costs for the power generator. The new contract should be implemented in a way that once the term and price are negotiated, it does not change during the contract term due to regulatory proceedings in the future.

d. LDC Service Consistency Across Ontario

The LDCs should be encouraged to formally submit new services and operational changes to the Board after full consultation and disclosure with its customers. There must be a coordinated effort between the LDC and their customers to remove the barriers in place today and allow the gas market to work effectively across Ontario.

e. Seamless Operation Flexibility

In order for a generator to take full advantage of service offerings and maximize the efficiency of their plant within one LDC franchise they must be able to use services seamlessly in conjunction with other services and assets in another LDC franchise.

A company with two plants, one in Union Gas franchise and the other in the Enbridge Gas franchise would have great difficulty today managing the day to day gas imbalances between the two plants let alone on an hour by hour basis. The LDC's operation policy is designed to retain the gas molecule within its own franchise by restricting movement of the gas molecule to another LDC or other off-system markets. In order to manage the plants efficiently the generator must be able to manage the gas between the plants and balance the gas profiles of the two plants as if they were one. Generators also need to be able to remarket gas when it is not needed for generation.

The LDC may imply that there are only limited restrictions on the movement of gas outside of the franchise. Yet, customers are restricted by current policies and are only free to deliver from one franchise to another ("ex-franchise") on a case by case basis or at the LDC's discretion. Another roadblock is the high financial penalties applied to moving gas ex-franchise. It is difficult to raise the capital for new power plants in the context of quasi firm obligations and exposure to large penalties. Such conditions therefore increase the cost and reduce the likely amount of new gas-fired generation being built in Ontario. .

Not only is there a need to move seamlessly between the LDC's but also seamlessly outside of the province. The ability to move, unrestricted, across and out of Ontario will have a positive impact on the liquidity of the gas market itself. As more and more customers manage their portfolio of assets and services freely on a day to day, or hour by hour basis, then more transactions will occur between the markets.

f. Intra-Day Nomination

There is an urgent need to increase the nomination windows within a day in order to interface and support the electricity system. Hourly nomination for transportation and storage throughout the day could certainly be a new service that will not only support generators but all customers across Ontario.

The system today was designed to have LDC's absorb the daily and hourly imbalance between supply and consumption. Dispatching of electricity on an hourly basis creates large gas imbalances throughout the day if generators can only schedule supplies on a daily basis. A power generator trading in this market will forecast their natural gas consumption based on the projected electricity demand for the next day or over the weekend. The forecast will inevitably be wrong as it is impossible to accurately predict the energy profile for the day. The ability to manage gas supplies and deliveries on an hourly basis will reduce imbalances significantly and will effectively create an hourly market for the purchase and sale of the gas molecule. This will in turn increase liquidity in the intra-day market. Proposed changes in the electricity system may allow for a greater certainty in terms of day-ahead scheduling in the future, but will not change the volatility of the actual demand for power, or the economic value of being able to respond to changes in power demand on short notice.

Ontario is a good starting point for this type of service because of the size and operational scope of the natural gas companies under OEB jurisdiction. However it would be far more effective to have a similar service on upstream pipelines such as TransCanada Pipeline (TCPL) and Vector/Alliance, and downstream pipelines such as Tennessee or Iroquois. An hourly market in Ontario would be effective without these changes upstream and downstream, but would be far more efficient and liquid with hourly markets at other natural gas hubs such as AECO, Niagara or Chicago.

As an example, Vector Pipeline is one leading pipeline that has taken the initiative and offered Firm Hourly Service (FT-H). The hourly service was developed to accommodate the requirements of various potential power generators off their system. However, the usefulness of this service is limited without markets for hourly storage and balancing services at the Dawn hub.

g. Storage Deliverability

The growth in gas-fired power generation in Ontario will create a need for significant changes in the traditional seasonal storage assets which are used to provide deliverability in the higher demand months of the winter. The higher costs of supply in the winter months can be managed by injecting cheaper gas in the summer months, then withdrawing the cheaper gas from storage in the winter months. The demand profile for power generation will shorten the storage injection to occur mainly in spring and fall and create a high demand for multiple cycling and higher deliverability.

Power generating plants increasingly need the ability to turn on their plants with very short notice. This results in a significant volume of gas consumption in any hour. This will require also require significant additional volume of gas to be transported and delivered out of storage.

Other Issues of Importance to APPrO

1. The demand for storage in Ontario may grow marginally over the next few years to support power generation. Storage should be provided under a cost of service based rate and consumers in Ontario should have priority access to storage prior to releasing storage at market based rates. In Ontario both existing and new in-franchise customers have access to low cost storage, 30% to 50% lower than market based storage. The fact that cost based storage is available for ALL new and existing in-franchise customers in Ontario is positive in that it does not create competitive disadvantages from one customer to another within the Ontario region. However, if there was a different price signal for new customers versus existing customers then APPrO would be concerned with it being discriminatory and concerned that the new customer would have a competitive disadvantage within the market of Ontario.
2. Penalties for operating outside of the parameters of rates and services are understandable however the level of the penalties applied should be reviewed. The penalties were designed to restrict operation within a contractual obligation. In an environment with hourly rather than daily changes the ability to forecast correctly becomes much more difficult. A system other than automatic daily imbalance “cash-outs” is preferred.
3. There are many LDC contractual requirements that create extra costs and reduced flexibility for generators that must be reviewed. Some of these limitations are:
 - Minimum annual volumes and associated penalties
 - Daily delivery obligations
 - Restrictive delivery points
 - Restrictive nomination windows
 - Supply overrun gas and supply under run gas penalties.
4. The interface between gas and electricity should also be reviewed when considering cost consequences of increased storage or transportation costs. In some cases in the U.S the regulatory body supports a shifting of increased costs due to gas infrastructure and services over to the Power Purchase Agreement to protect the generator from rate shock. This in turn obviously would support the development of the electric infrastructure as generators consider the reduced regulatory risk of the project. Such PPA terms have generally not been available in Ontario, but could be considered by the OPA going forward.

Creative Services Offerings in Other Jurisdictions

There are not many services that support or match the type of services APPrO and its members are requesting in Ontario. In our opinion it is not necessary to create services to match other jurisdictions. Although there may be a good template to use for

structuring new services, such as the Vector hourly service, there is no reason not to take a lead on new service offering suited to what the customers in your own jurisdiction will require. Other jurisdictions will soon follow suite as customers and marketers request similar services.

In our review to date there are only a few examples of services that are somewhat similar to what is required in Ontario. These include:

Transport Flexibility

There are many times when generators or other customers use the flexibility of transport pipelines and the line pack to meet high hourly load requirements throughout a day. In the U.S the transportation system may be able to accommodate an increased deliverability to a plant at certain times due to the location of storage and the ability of a pipeline to divert gas or fill the unutilized capacity to meet this requirement. The problem with this type of flexibility is that it is not a firm service. It may be well suited for those plants that can match the pipeline flexibility on a day to day basis however it is not a type of service you can rely on to build a generation facility. The services should be designed to accommodate the needs of the plant not the requirements of the pipeline or the location of the storage pools. This type of service also relies heavily on the so called “trust me” factor.

Vector

Vector is a 348 mile, 42 inch pipeline project in the United States and Canada that transports approximately 1 Bcf per day of natural gas from the Chicago market into Indiana and Michigan, and into the Ontario market. The pipeline was operational in December 2000.

As mentioned earlier Vector has taken the initiative and is offering Firm Hourly Service (FT-H) and a Market Balancing Agreement (MBA). Both of these services are available on one hour's nomination if the supply can be delivered simultaneously downstream presumably using storage. Although these services have not been widely used due to the mismatch with services offered downstream it is certainly one service that can be well suited to the power industry if Ontario LDC's and other pipelines can develop similar services.

Yesterday Market

For a defined period each morning, shippers in Alberta are permitted to buy or sell gas on NOVA system for the prior gas day. This permits the shipper to balance its pipeline account after the fact and avoid penalty consequences. This has obvious benefit for shippers, such as generators, that cannot accurately forecast their dispatch on a day-ahead basis.

Location Criteria

The 10 year outlook prepared by the Independent Electricity System Operator (IESO) provides a detailed review of system requirements for the province over the next decade.

There is no reference to gas infrastructure which may have a significant impact on the costs associated with the location of a generating plant.

If the criteria for locating a plant was based on gas infrastructure alone then all the new generating plants would be built on top of Dawn storage. But the electrical transmission implications of such location would be unacceptable. It is generally less optimal to adapt the electricity infrastructure to accommodate the gas infrastructure. The gas infrastructure and services must be adapted to support the electricity infrastructure.

Toronto and its surrounding area have been identified as a key demand growth area for generation. One of the major facilities to consider for gas infrastructure to support the electric demand growth is the Dawn to Trafalgar system. The design and growth of the system has historically been supported with long term binding obligations that are typically supported by consumers with a high load factor market. The much higher costs associated with gas transportation from Dawn to the Toronto market for gas fired generators (and more acutely for peaking gas plants) must be reviewed when expanding the system.

The one process issue that must also be reviewed is the RFP Process for Dawn to Trafalgar expansion. Typically today there are LDC open seasons to expand the system which are released periodically at the LDC's discretion. This may require a binding obligation by the customer. This process is not in any way planned or coordinated with the RFP process for the electricity infrastructure. There must be a process developed where the obligations and regulatory approvals are interlinked between the electric and natural gas process.