# Industrial User Practices Securing Natural Gas in Current Market Conditions

OEB 2016 Gas Market Review
(EB-2015-0237)

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# Industrial Gas Users Association

- Founded in 1973
- Represent large gas user interests in regulatory tribunals
- Membership spans energy and emissions intensive sectors which are often commodity dependent and cyclical
  - Mining, metals, petrochemicals, pulp & paper and manufacturing sectors
- Gas consumption exceeds 148 PJ per year (88 PJ per year equivalent to 40% of industrial natural gas demand in Ontario)
  - Over 24,000 jobs in Canada, 750,000 jobs worldwide
- Large employers in rural and remote communities
- Energy costs factor in international competitiveness

# Overview

- Shed light on the gas supply considerations for half the volumes consumed in the province that are not on system gas: important role of secondary market
- Appeal for a long term outlook on Ontario gas markets in view of
  - Climate Change
  - Rapidly evolving gas supply market and associated infrastructure investments

# Natural Gas Use in Industry

- Large operations have multiple uses
  - Feedstock
  - Process heat (steam, hot water, direct heating)
  - Back-up fuel
  - Co-gen
- Operational Parameters Trump Gas Usage
  - May be more efficient to run at full capacity half the time than run at 50% load all the time
  - Output obligations may mandate purchasing expensive daily spot
- Competitiveness depends on reliable supply of natural gas at the most competitive landed cost

# Range of Gas Supply Options

- System Gas (bundled molecule, transportation and distribution from the utility
- Secondary Market (molecule, transportation, storage) & choice of firm or interruptible LDC delivery service
  - Annual, seasonal, block, monthly, daily
- Buy own molecule, hold own transportation, manage own storage and balancing, optimize distribution cost with creative portfolio of utility contract

*Objective is to secure reliable supply of natural gas at the most competitive landed cost*

# No Single Optimum Supply Strategy

Choice depends on multiple factors

- Location  and available utility & secondary market services
- Load Profile  and type of use
- Operational flexibility and demand elasticity
- Health of the sector and the commodity price cycle
- Competitive pressure (external /internal)
- Risk appetite
- Tolerance to service interruption
- Resources dedicated to gas purchasing

# Gas Supply & Infrastructure Options Set the Landscape

Deregulation to early 2000s

- Held FT on TCPL for large portion of annual base load
- Sourced seasonal, peak and a small portion of base from the secondary market ( mix of block, monthly, daily)

Early 2000s – Mainline under stress

- Alliance pipeline reduces Mainline volumes
- Marcellus shale results in shift from long haul to short haul

2008 Economic Downturn

- Industrial shutdown destroyed gas demand (temporary & permanent) and Mainline volumes dropped further
- The cost of capacity (FT) soared & the landed cost of gas increased (low double digits)
- Industrials started to turn back capacity as contracts allowed

# Industrial Gas supply Trends

By 2011 – Marcellus gas was a viable supply option

- Only few industrials held capacity on the mainline, and usually for a fraction of base load
- Secondary market had become the main source for supply
- Several active marketers provided a flexible and competitive mix of services (annual, seasonal, block, monthly and daily) to match industry need
- Firm service offerings were not necessarily underpinned by FT due to overcapacity on the Mainline

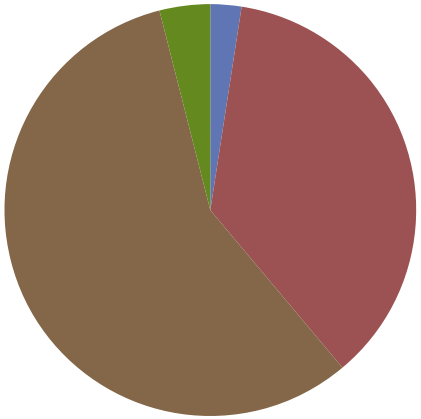
2011- 2014 - Painful process of pipeline adjustment

- Industrials relied on the secondary market even as costs rose in response to infrastructure regulatory uncertainty

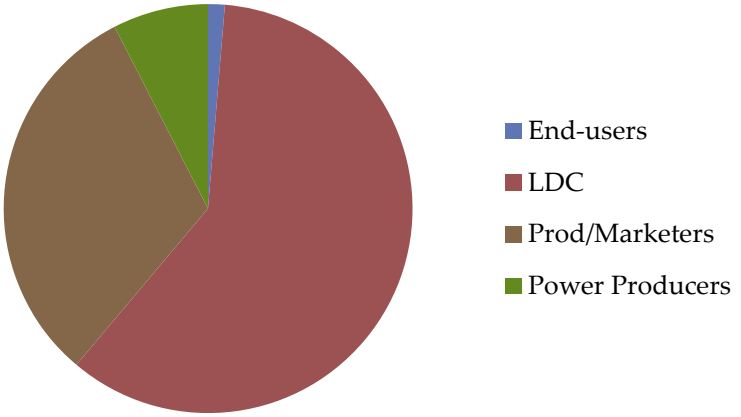
# Mainline Shipper Profile 2006-2016

Source: TransCanada Web site CDE January Report

- 2006



- 2016




| Daily Contract Demand Allocation | 2006 | 2016 |
|---|---|---|
| | % | % |
| End-users | 2.5% | 1.3% |
| LDC | 36.5% | 59.8% |
| Producers/Marketers | 57.0% | 31.3% |
| Power Producers | 4.0% | 7.6% |

# Game Changers

- Abundant shale supply at close proximity
- Pipeline Adjustment Process- Changes to tariffs and services
  - Mainline: Settlement 1on Segmentation (remove EOT bottlenecks & provide supply diversity), Settlement 2 on Energy East (repurposes excess Mainline capacity
  - EOT reinforcements, dawn expansion
- Vortex Winter
  - Daily gas price hit $80
  - Lengthy curtailment periods for interruptible service
  - Difficulty sourcing make-up gas (to continue operations /balance utility delivery obligations)
  - Financial hit, loss of production

***Higher Volatility***

***Fewer secondary market offerings at higher prices***

# Gas Supply Choices this Winter

- E.g.1 Union EDA – Buy daily on the secondary market
  - Couldn't get winter strip or block on secondary market at acceptable price
  - High risk strategy, but economics prevented firming up
  - Company will shift production to another location if price impact exceeds risk tolerance(temporary shut down)
- E.g. 2 Union CDA- FT on TCPL in excess of base load up to winter peak
  - Limited secondary market offering
  - Low risk, but expensive strategy, had no other option given the load profile
- E.g. 3 Enbridge CDA – Bought annual gas on secondary market based on basis difference with AECO and firmed up utility service
  - Lost production when interrupted and couldn't get make-up gas
  - Couldn't get gas even at the high daily price

*Options not Solutions*

# Gas supply & infrastructure in a -80% Carbon World

It matters because…

- Government policy seeks 80% carbon reduction by 2050
- Infrastructure that gets built today will still be on the books by 2050
- Natural gas (methane) used in industrial process or for feedstock cannot be substituted with electricity

Industrial dilemma…

- Who other than industry will remain a gas user in a -80% Carbon world?
- Will there be stranded gas infrastructure assets?
- Will there be a need for huge electricity infrastructure investment?
- Who will bear the cost?
- Who is looking at optimization of infrastructure (pipes & wires)?

# Concluding Remarks

- OEB should have a policy interest in the secondary market that supplies half of Ontario's natural gas demand
  - Establish a relationship with marketers & invite to NGMR
  - Consider the impact of regulatory decisions on the secondary market
  - Advocate with the NEB and government for FERC-like market oversight capability in Canada
- Annual NGMRs should cover multiple time horizons
  - Immediate and near term
  - Medium-long term scenarios
- Industrial gas users need 'Options' not 'Solutions'
  - Supply diversity
  - Path diversity & optimization
  - Flexible, user-oriented service offerings
  - Flexible contract terms
  - Vibrant markets for molecules and capacity

# Thank You

# Questions?