

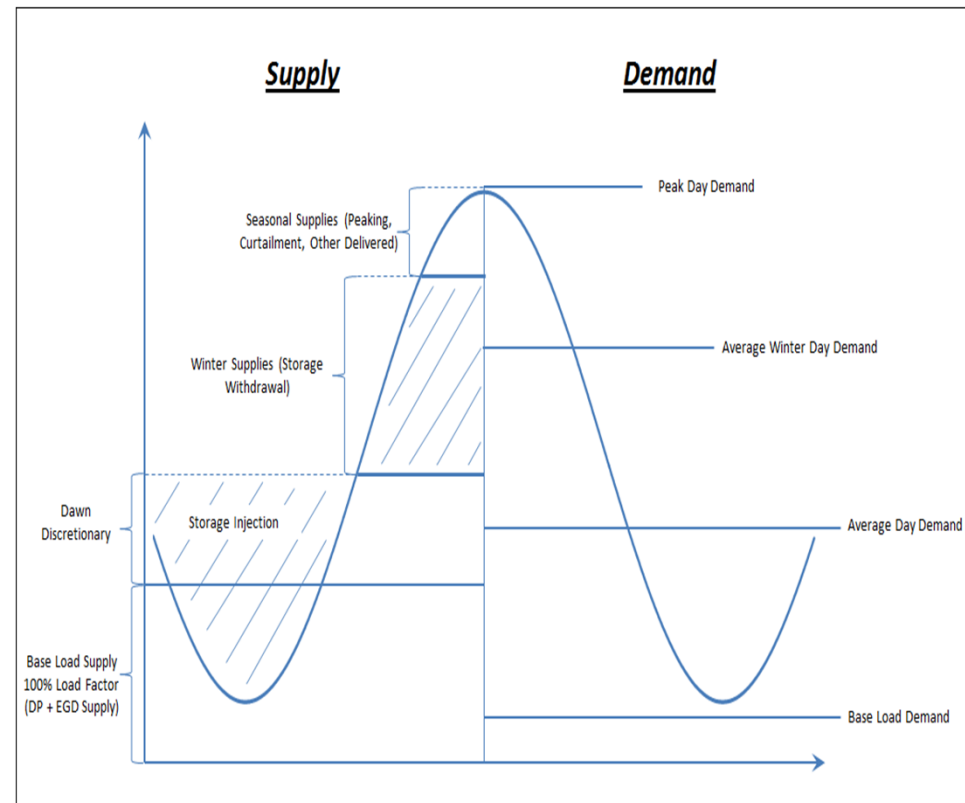


Ontario Energy Board 2014 Natural Gas
Market Review
EB-2014-0289

Session 2: Winter 2013/2014 Natural Gas Price Review

Gas Supply Planning Principles

- Reliability – Firm, discretionary, curtailment, delivered
- Flexibility – Term, renewal rights, other service attributes
- Diversity – Path, access to hubs/basins, access to storage
- Landed Cost - Including toll, fuel, commodity costs



Gas Supply Plan is developed taking into account all principles. No one principle dominates although in certain instances one principle may be given more weight than others.

Gas Supply Plan Development

- Purpose of a gas supply plan is to have assets in place to meet demand under a pre-determined risk level
- Gas Supply Plan inputs include:
 - Budget demand
 - Design Criteria: Peak day and Annual weather assumptions
 - Assets: Transportation & Storage
 - Costs: Demand& Commodity charges, fuel ratios, commodity prices
- Recently improved peak day planning criteria: Moved from 39.5 HDDs to 41.4 HDDs
- Storage targets and peak day requirements are determined under design conditions and are then applied to budget demand to arrive at a gas supply plan
- Supply plan sources gas from a variety of production areas/hubs and identifies the transportation and storage assets required

Primary purpose of a gas supply plan is to serve a variety of demand conditions. Current supply planning parameters focus on very few cold days in the winter and not on a prolonged cold winter.

Design Criteria: Risk & Cost Trade Offs

- Demand is largely determined by weather
- Design Criteria determine the range of demand outcomes that can be met
 - It is the timing and magnitude of demand variances above budget that is most important
- The more conservative the Design Criteria assumptions, the greater the ability to manage demand swings utilizing a Board Approved gas supply plan

| | | Demand Variance Above Budget | |
|-----------------|--------------|--|--|
| | | Minimal | High |
| Design Criteria | Risky | Low Budget Cost Neutral Execution Cost | Low Budget Cost High Execution Cost |
| | Conservative | High Budget Cost Neutral Execution Cost | High Budget Cost Low Execution Cost |

Design Criteria enables a trade-off between budgeted gas costs and the stability of QRAM adjustments over time.

Storage Requirement Analysis

- 2013/2014 winter coldest in 37 years based on ordinal observation: 3,359 HDDs

| Incremental Storage Requirements*: Various Design Criteria (Normal Distribution) | | | |
|--|--|---------------------------------|---------------------------------------|
| Design Criteria Recurrence Interval | Associated Probability of Being \geq | Central Weather Zone Winter HDD | Incremental Storage Requirement (Bcf) |
| Current 1 in 2 | 50% | 2,945 | - |
| 1 in 5 | 20% | 3,207 | 9 |
| 1 in 10 | 10% | 3,303 | 14 |
| 1 in 15 | \approx 6% | 3,364 | 16 |
| Peak Day Equivalent | 5.7% | 3,369 | 16 |
| 1 in 20 | 5% | 3,384 | 21 |

* Analysis based on 2015 budget

Additional storage assets would have assisted in mitigating demand and price variances over the past winter. Incremental storage is ultimately a buy versus build decision and storage values fluctuate over time.

EGD Comments

- Should a common policy in relation to the risk assumed in a gas supply plan be contemplated by the Board?
 - Union storage allocation & storage asset capability
 - Design criteria to be utilized (risk assumed)
 - Similar risk but recognition of differing circumstances in terms of weather/demand and assets contained in supply plan

For 2015 EGD will be applying to alter the manner in which storage targets are set.