

5 Year Gas Supply Plan

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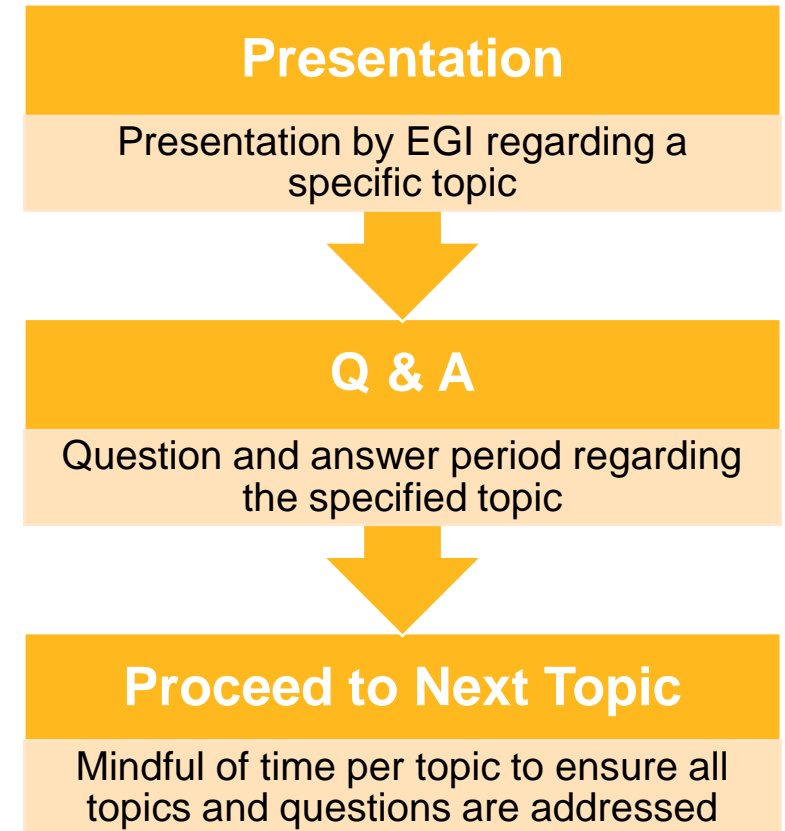
Agenda

- Overview & Process
- Amalgamation & Integrating Gas Supply
- Demand Forecasting
- Supply Option Analysis
- Public Policy & Related Items
- Storage
- Execution & Risk Mitigation
- Performance Measurement
- Additional Q&A

Introduction & Overview

Stakeholder Conference: Format & Approach

- Informed by the Board's guidance in Framework and Initiation letter dated July 25, 2019
- Presentation and Q&A addresses all pertinent questions received
- Agenda distributed ahead of time to allow parties to plan their participation
- Withhold questions until the presentation regarding that topic is complete



Stakeholder Conference: Scope

- Focus on the purpose of stakeholder conference, as outlined in the Board's Framework and initiation letter
- Responsive as possible to questions not directly related to the Plan by providing context and, where appropriate, suggesting other venues
- Board's process direction has been clear
- All Relevant questions will be answered in stakeholder conference

Gas Supply: Regulatory Process



- Stakeholder conference is a central component of the Board's review and assessment of EGI's Plan
- The Plan links to other regulatory applications which provide for the assessment and passing-through of gas supply costs to customers
 - QRAM
 - Annual Rate Applications / Deferral Disposition Applications
 - Leave to Construct Applications
 - Long-Term Contract Applications

Gas Supply: Regulatory Process

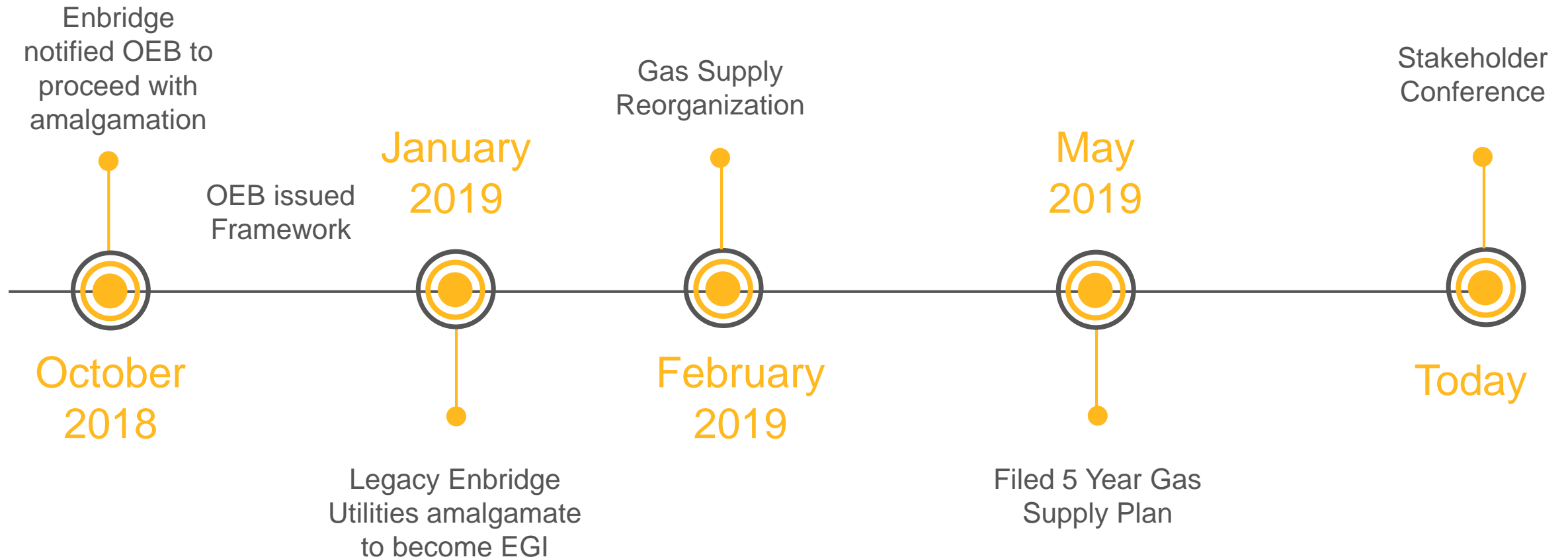


- The Framework does not anticipate that this process will “approve” EGI’s 5 Year Gas Supply Plan, or the cost consequences of the Plan (or of any year of the Plan)
- Ultimate outcome of this consultation will be an indication from the Board that the Plan is reasonable and consistent with the Board’s Guiding Principles.
- Concerns with activities or costs, could be challenged at the time that accounts are brought forward for clearance.

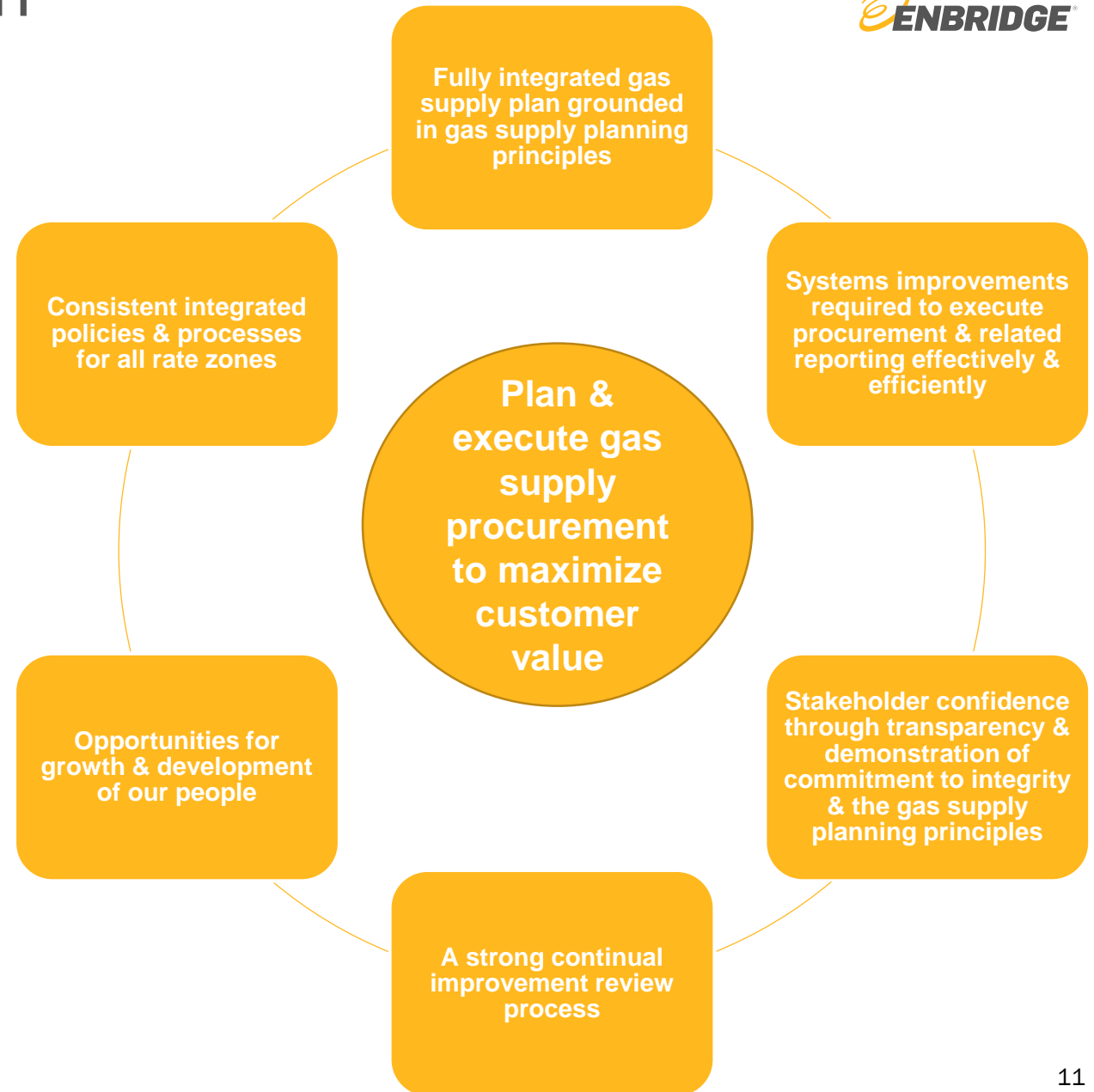
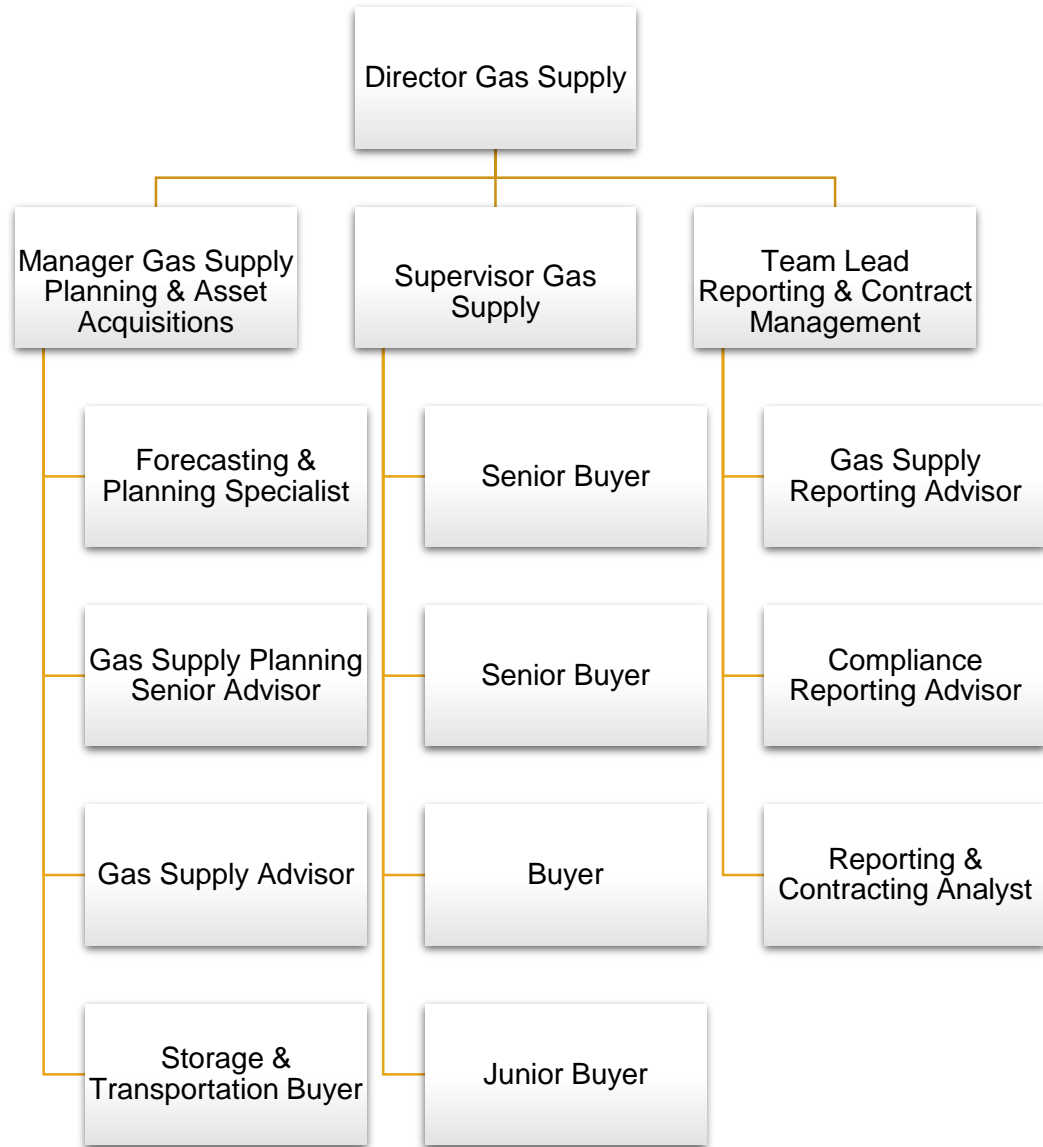
Q & A

Amalgamation & Integration

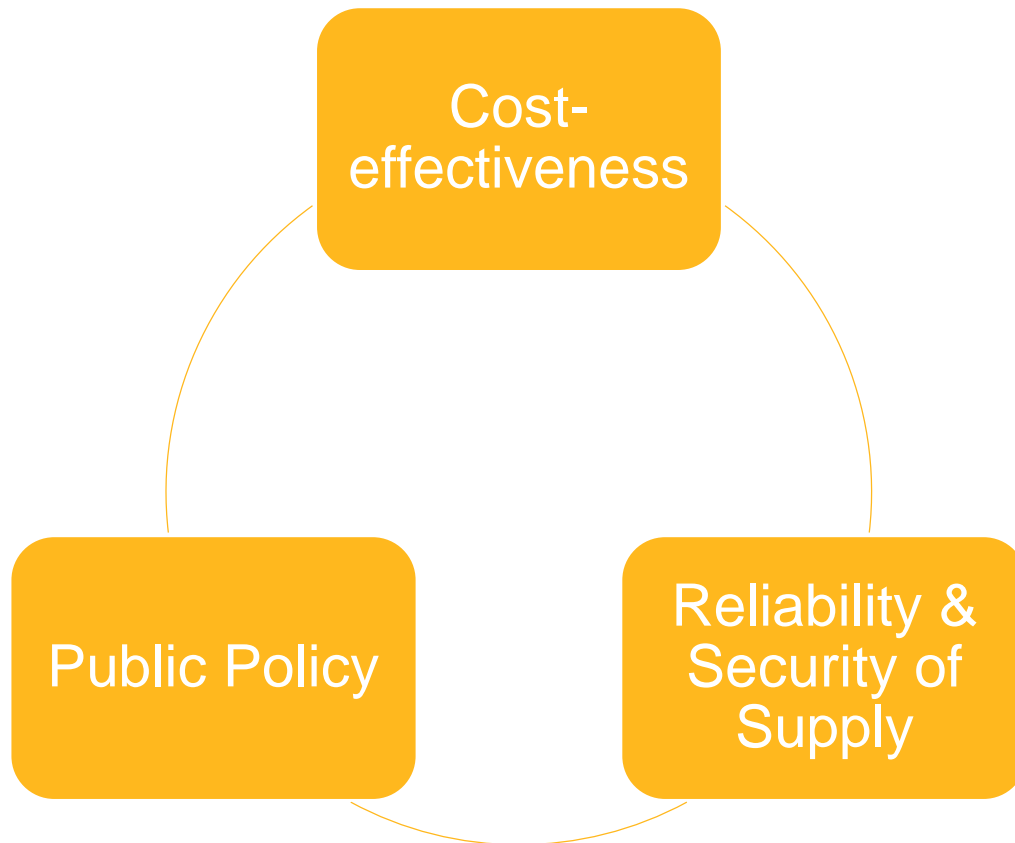
Recent Events



Combined Gas Supply Team



What is NOT Changing



- Enbridge Values: Safety, Integrity and Respect
- Importance of the Guiding Principles in how the Gas Supply function is planned and executed
- Protection of ratepayers through the separation of the utility and non-utility business functions
- Compliance with the Affiliate Relationship Code

Early Integration Successes

In Gas Supply:

- Forming one Gas Supply team
- More efficient execution through early process alignment
- Cross-training between legacy Gas Supply teams
- First combined filing of 5 Year Gas Supply Plan
- Execution of blind RFP for market storage purchase

In related groups:

- Consolidation of control room operations on track for this winter
- Consolidation of nominations to third-party pipelines

When will Integration be Complete

- Integration aspects of the Plans:
 - People
 - Processes and policies
 - Systems
 - Pre-existing Board Approved methodologies and rate structures
 - Assets/service contracts



Some Future Integration Activity Expectations

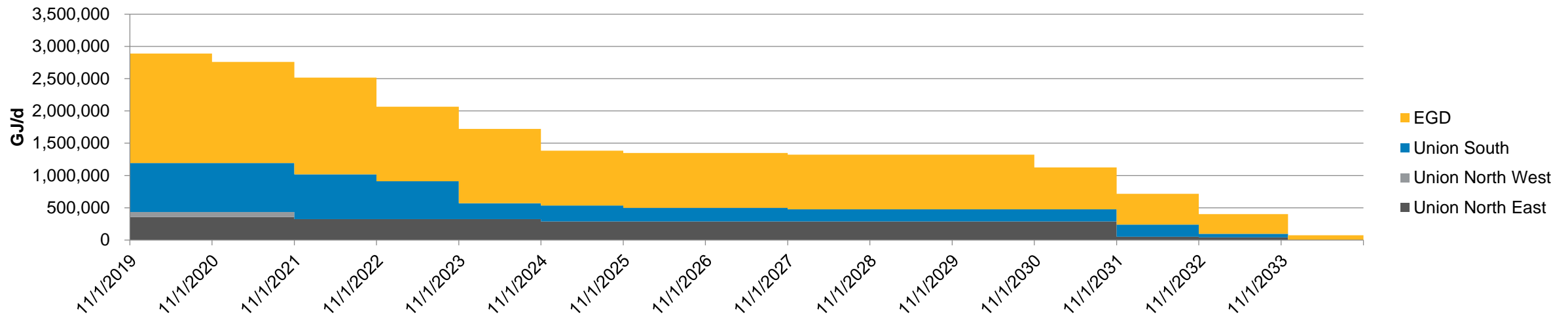


- Combined Gas Supply Procurement Policy
- “Cost of Gas” project kicked-off – integration of underlying IT systems that support Gas Supply execution and reporting – expected mid -2021
- Annual Update – expect to file May 2020
 - Based on 2019/20 – 2023/24 Plan
 - No changes in Board Approved methodologies
 - Update on continuing integration activities
 - Communicate a more detailed plan on stages and timelines for Plan integration

Gas Supply Plan Integration – Setting Expectations



- Integration of the Plans is a complex undertaking
 - Requires a carefully thought-out plan
 - Some timelines are dictated by existing contracts (see graphic below)
 - Some areas require regulatory approvals and/or negotiations with service providers
 - Systems to track costs and benefits and allocate them to proper rate zones need development
- Important considerations to keep in mind:
 - Customer demand is not impacted by integration – significant savings are not expected
 - Operating combined assets during non-design day conditions may increase optimization



Q & A

Demand Forecasting

Annual Demand

- Each rate zone uses Board Approved methodologies
- Separate annual demand forecasting processes for EGD rate zone and Union rate zones will continue
 - All processes leverage regression modeling for General Services forecasts;
 - Forecast by rate class and customer sector
 - Bottom-up processes support Contract market forecasts;
 - Portion of Union rate zone contract market is forecast using regression analysis
- All rate zone modeling takes into account average use, economic factors and weather trends:
 - Forecasts are inherently inaccurate, such that a flexible, diverse and reliable portfolio allows for management of variations
- Conservation initiatives reflected in forecasts by accounting for projected DSM program savings

Design Day Demand

- Separate design day forecasting processes for EGD rate zone and Union rate zones:
 - All processes leverage regression modeling
- Board Approved design criteria assumed for planning
 - EGD: 1-in-5 recurrence interval
 - Union: Coldest observed day
- All rate zones control impact of wind on demand and differences in weekend/weekday consumption

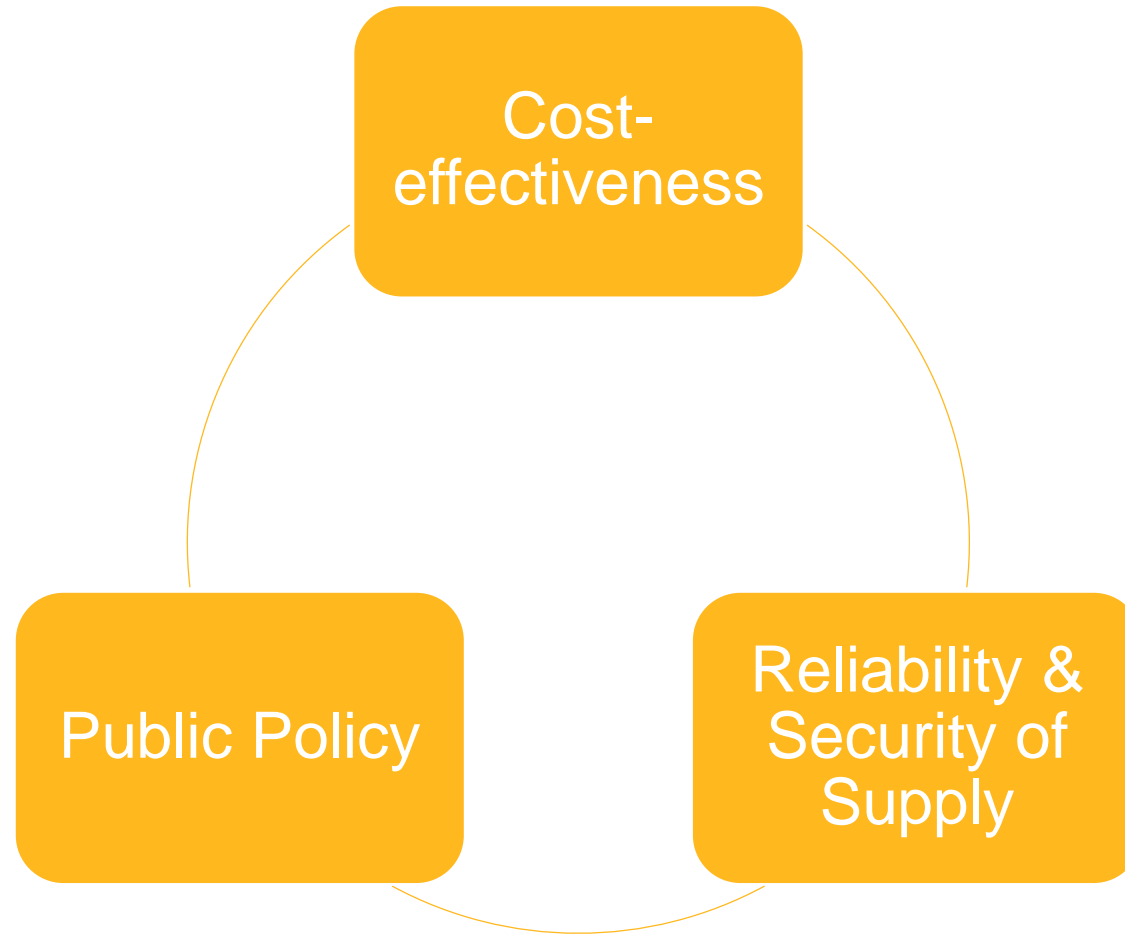
Summary of EGI Design Day Demand (2020-2024)

| <u>Particulars (TJ/d)</u> | <u>2020</u> | <u>2021</u> | <u>2022</u> | <u>2023</u> | <u>2024</u> |
|---------------------------|--------------|--------------|--------------|--------------|--------------|
| <i>Enbridge CDA</i> | 3,414 | 3,426 | 3,439 | 3,451 | 3,463 |
| <i>Enbridge EDA</i> | 723 | 730 | 738 | 745 | 752 |
| EGD | 4,137 | 4,157 | 4,178 | 4,196 | 4,215 |
| <i>Union North West</i> | 130 | 129 | 129 | 128 | 128 |
| <i>Union North East</i> | 403 | 400 | 408 | 408 | 411 |
| Union North | 533 | 529 | 537 | 536 | 539 |
| Union South | 3,108 | 3,139 | 3,265 | 3,314 | 3,344 |

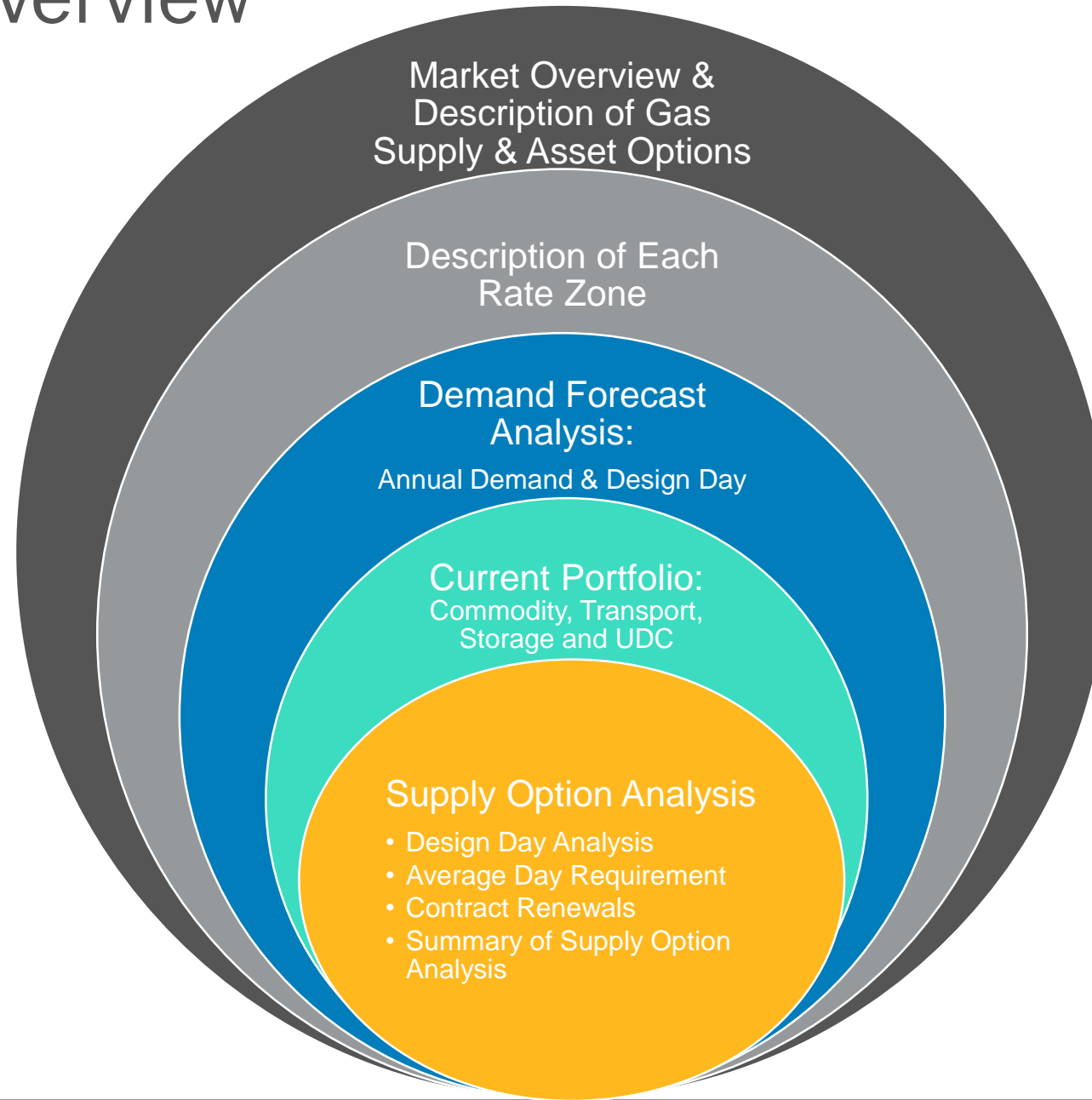
Q & A

Supply Option Analysis

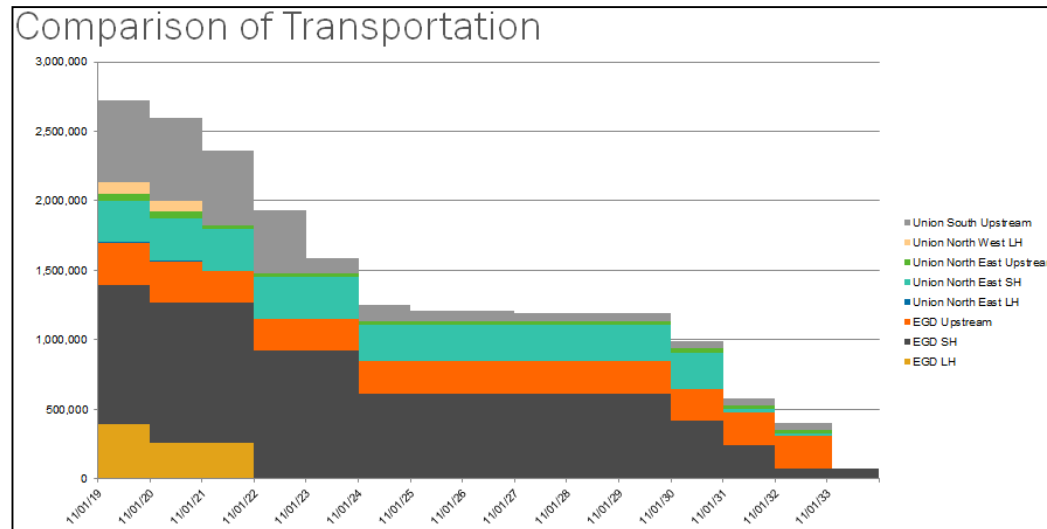
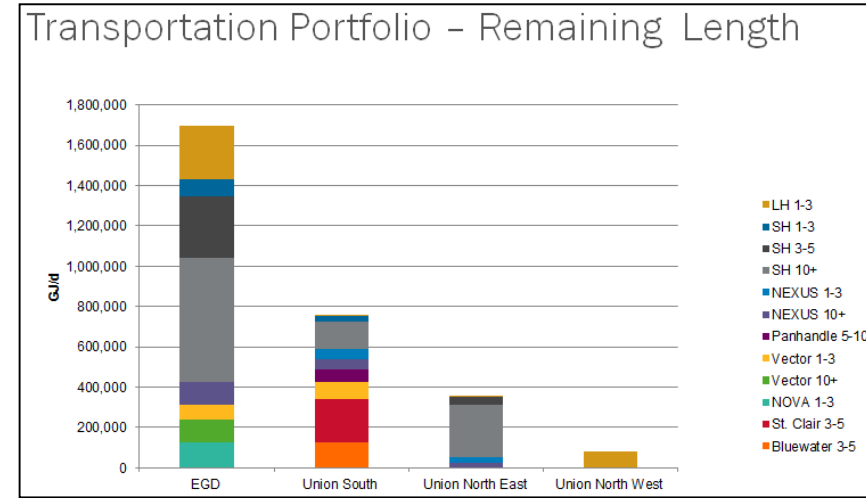
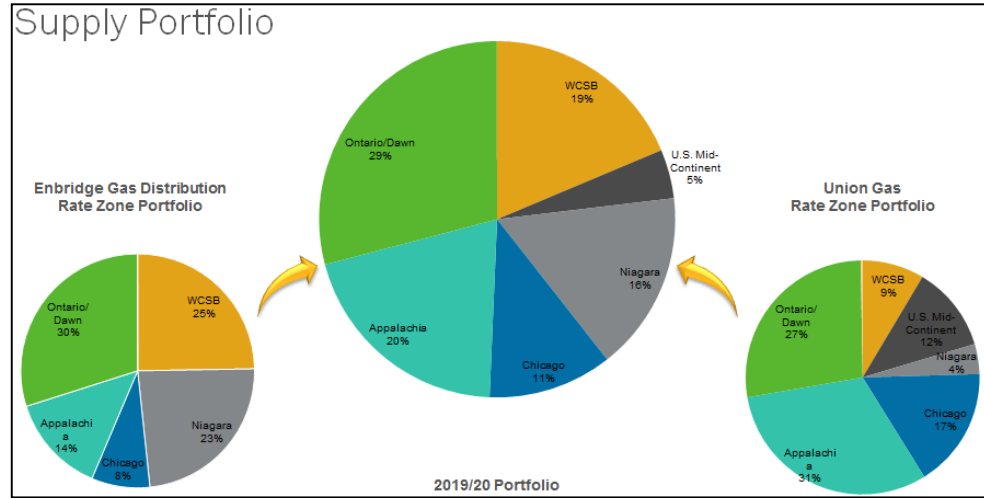
Guiding Principles are Critical to Decision Making



Supply Option Overview

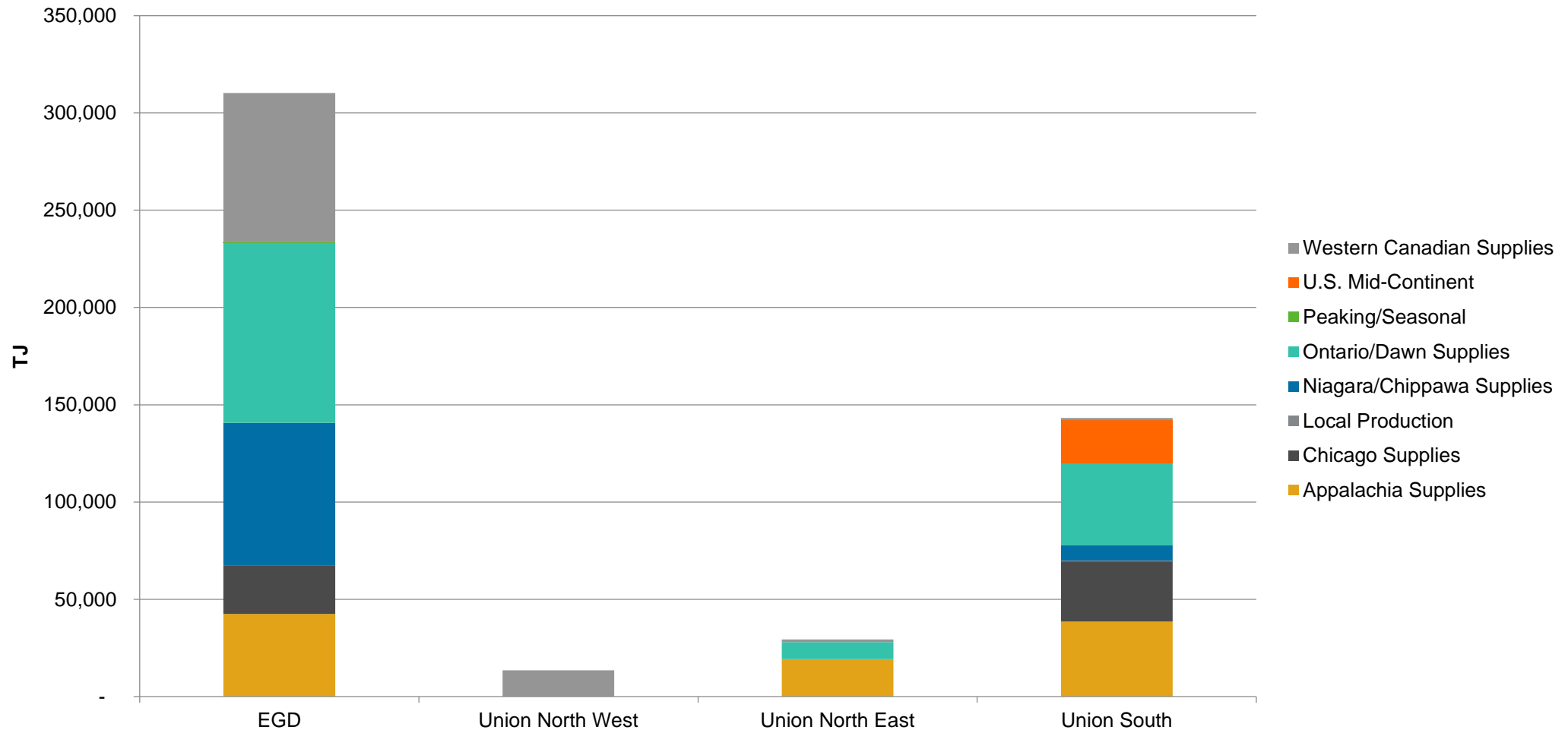


Balancing the Portfolio

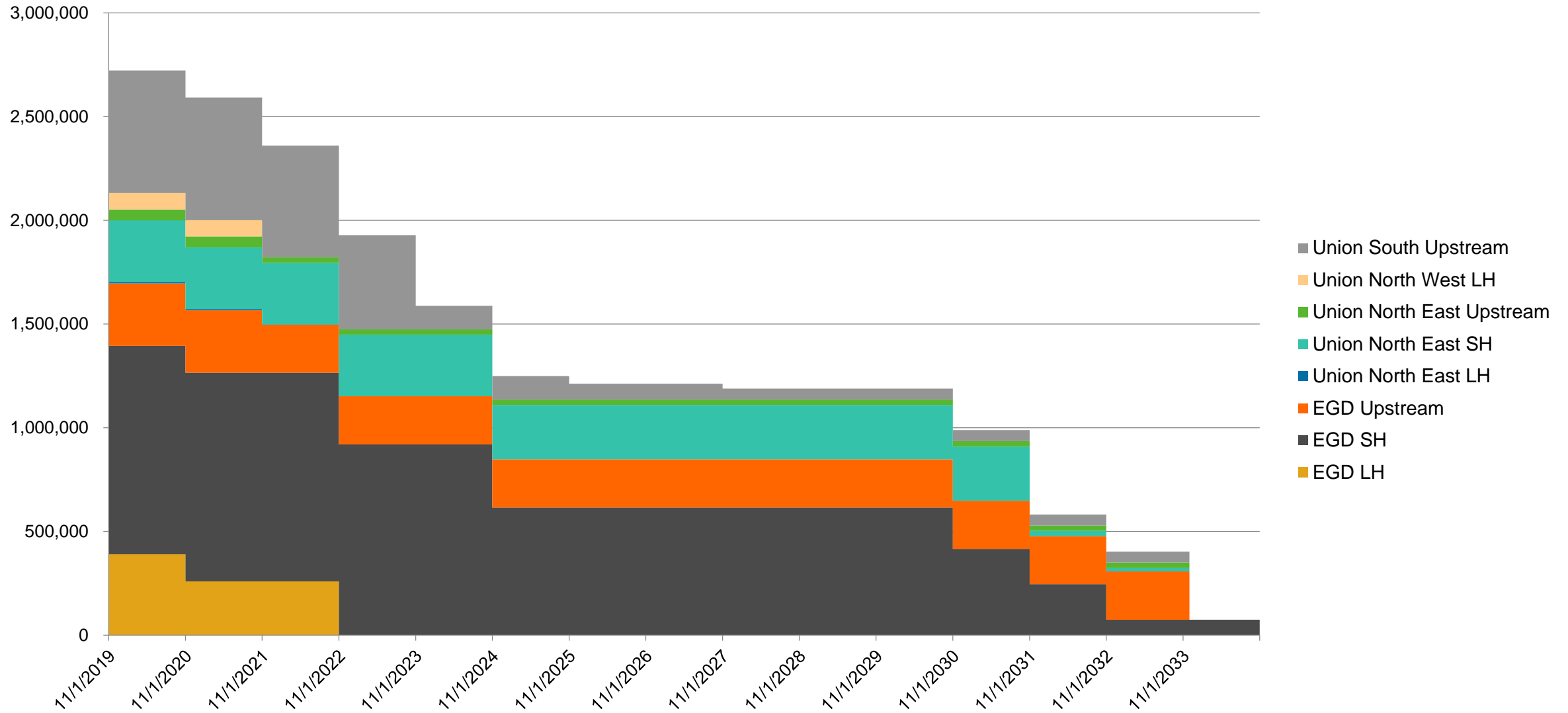


Comparison of Supply Sources by Rate Zone

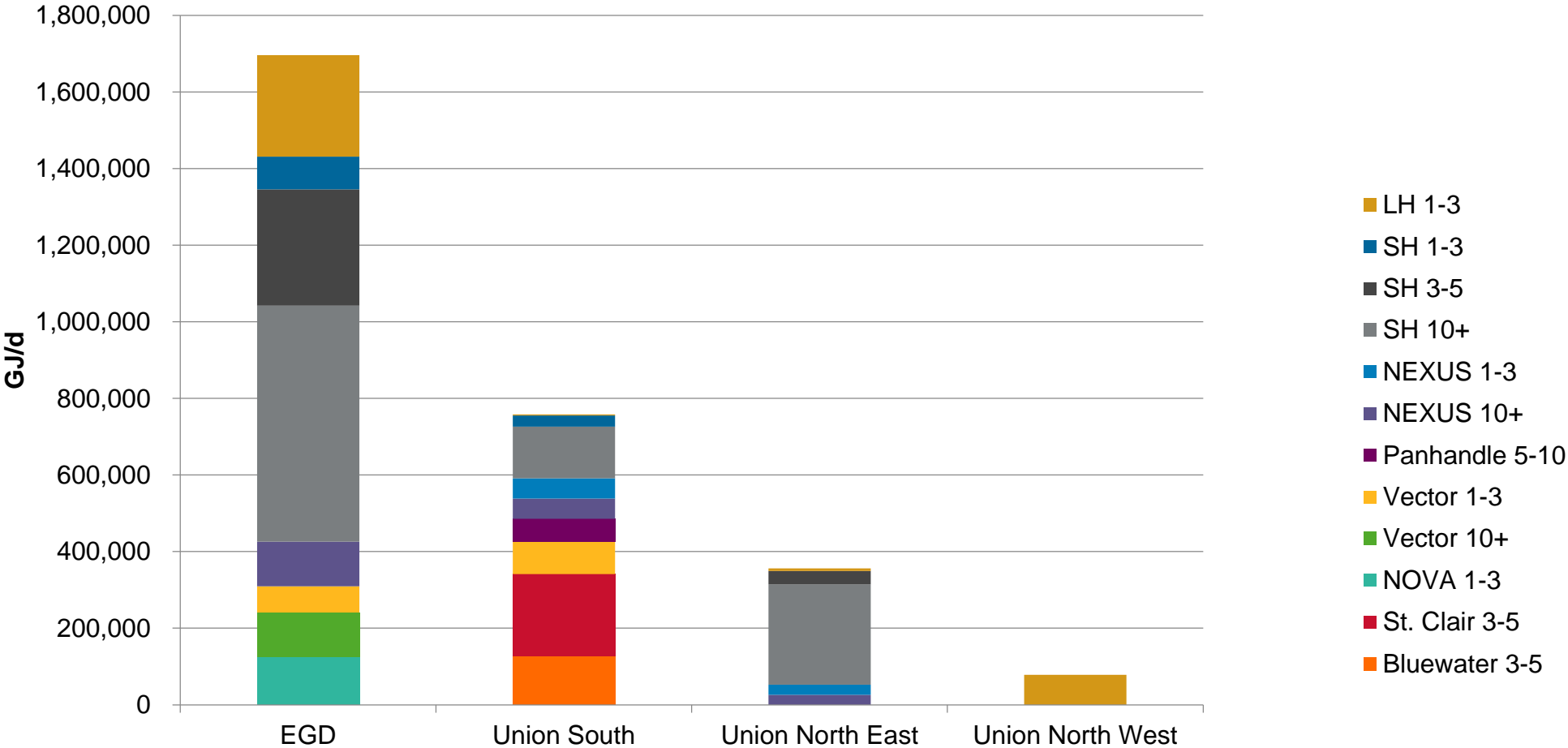
Supply Source by Rate Zone



Comparison of Transportation

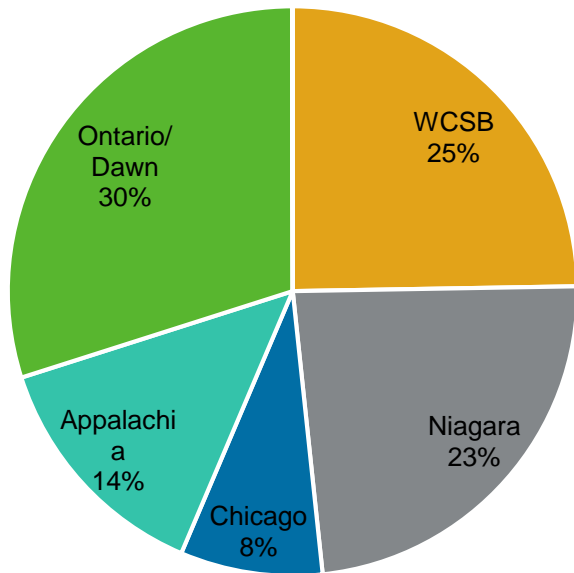


Transportation Portfolio – Remaining Length

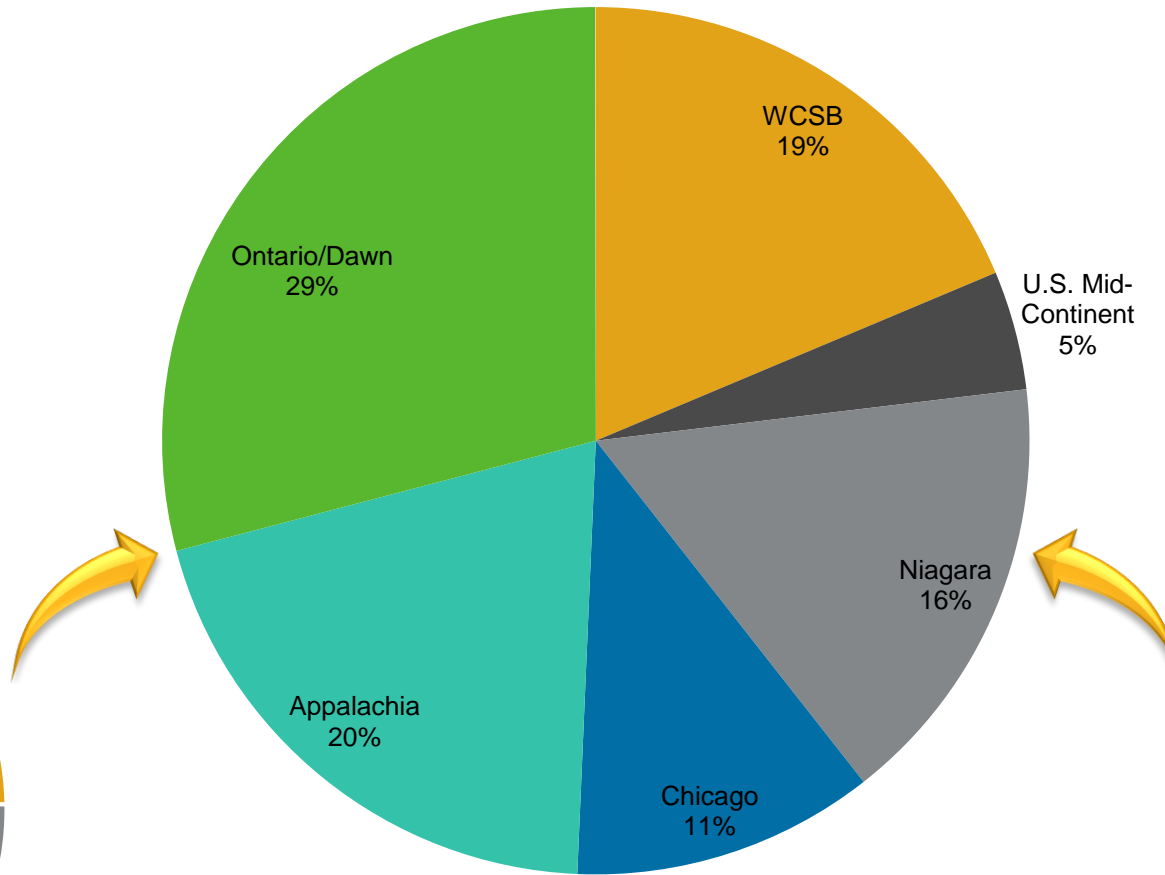
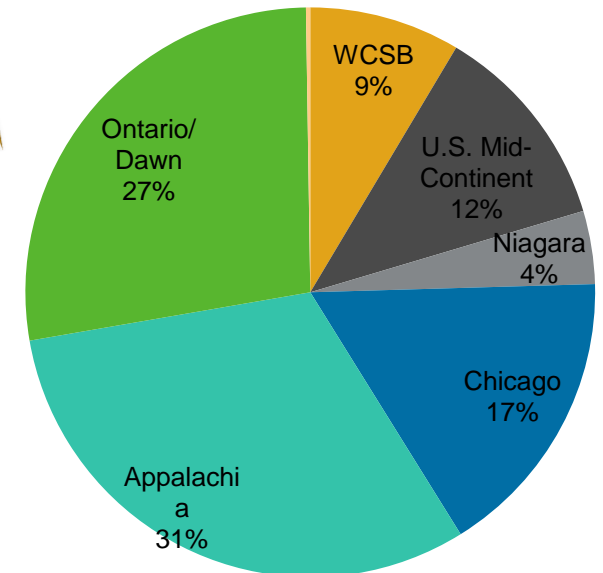


Supply Portfolio

Enbridge Gas Distribution Rate Zone Portfolio



Union Gas Rate Zone Portfolio



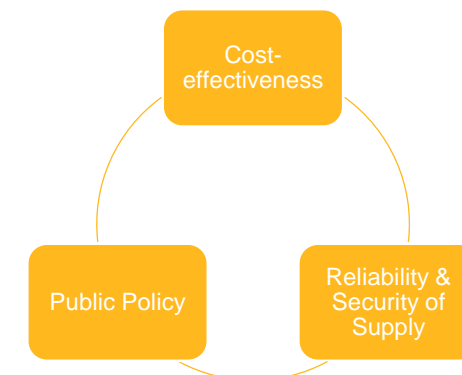
2019/20 Portfolio

Evaluation Process

- Evaluation matrix used to demonstrate the impact of a particular option against existing portfolio

| Option | Reliability | Flexibility | Diversity | Costs (\$/GJ) | Average Cost/Customer Impact |
|--------|-------------|-------------|-----------|---------------|------------------------------|
| | | | | | |
| | | | | | |
| | | | | | |

- Colour-coded symbols indicate option's impact compared to existing portfolio



Landed Cost Calculation Example

- Landed Cost Inputs:
 - Fixed costs: transport tolls, abandonment
 - Variable costs: commodity, fuel %
 - Other: contract days/yr, pipeline utilization days/yr

Landed Costs = [fixed costs] + [variable costs]

Landed Costs = [(tolls + abandonment) * contract days/yr] + [(1+fuel%) * (commodity * pipeline utilization days/yr)]

Landed Cost Example Cont'd



- Q: How much would it cost per day to contract for LH-FT transportation service for the period of Nov 1/19 to Oct 31/20 from TC Energy along the path of Empress-to-Union WDA, assuming 100% load factor?

- A: Step 1: Find Fixed costs:

| | | |
|------------------------------|---|-------------|
| Empress-to-Union WDA Tolls | = | \$0.7445/GJ |
| Empress-to-Union WDA Abandon | = | \$0.0783/GJ |

- Step 2: Find Variable Costs:

| | | |
|-----------------------------|---|-----------|
| Empress Commodity | = | \$2.17/GJ |
| Empress-to-Union WDA Fuel % | = | 2.1% |

- Step 3: Solve for Landed Costs:

| | | |
|--------------|---|--|
| Landed Costs | = | $(\$0.7445/\text{GJ} + \$0.0783/\text{GJ}) + ((1+0.021) * \$2.17/\text{GJ})$ |
| | = | $\$0.8228/\text{GJ} + \$2.22/\text{GJ}$ |
| | = | <u>\$3.04/GJ/d</u> |

Bill Impact Calculation

- Average cost per customer impact in Plan = bill impacts filed in QRAM
 - Simplification is required to account for forecast information
- Intended to be illustrative of incremental cost changes relative to the current gas supply portfolio
- Based on a typical sales service customer with annual consumption of 2,400 m³ in the EGD rate zone and 2,200 m³ in the Union rate zones

Evolution of Planning Decisions

Vector Renewal Example



- Option analysis is forward looking and considers relevant alternatives
- Decisions are made relative to contract expiry depend on several factors
 - Options available in the market
 - Whether asset commitments are required in advance to support long term investment and infrastructure

| | Q1 2018 | Q3 2019 |
|----------------|---------|---------|
| NEXUS | \$4.01 | \$4.11 |
| Rover Vector | \$4.19 | \$4.28 |
| Dawn | \$4.54 | \$3.94 |
| DTE | \$4.63 | \$4.09 |
| Vector | \$4.73 | \$4.20 |
| GLGT (Farwell) | \$4.74 | \$4.21 |

- Vector pipeline renews in 3-year increments with 12-month notice
- Decision to renew must be made by Q3 2021
- Evaluation is ongoing

STS Service

- STS is a transportation service to and from a storage location
 - Works in conjunction with long-haul transport
 - Some STS rights are limited by the related FT capacity
 - Each of the legacy utilities held separate and distinct contracts
 - Unique attributes for the specific rate zones
- EGI holds 7 STS contracts with TC Energy
 - 6 contracts serve Enbridge rate zone
 - 1 contract serves Union North East and North West rate zones
- Non-standard features
 - Balance transfer agreement
 - Ability to transfer balances from Enbridge EDA to Enbridge CDA
 - Union rate zone pooling rights
 - Allows for transportation of firm quantities above contracted injection and withdrawal quantities
 - Pooling are not transferrable to other rate zones

Third-Party Services

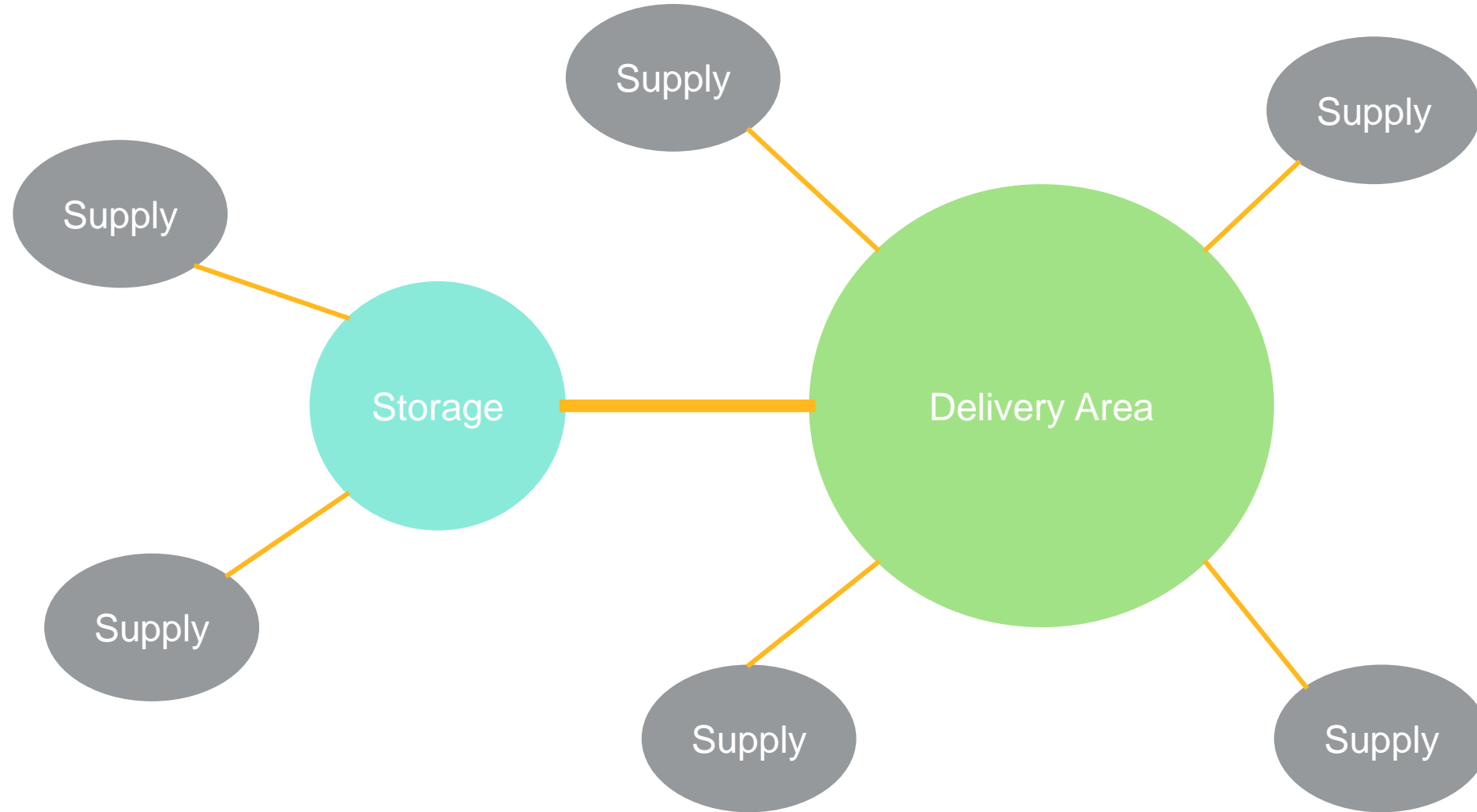
- Third-party services have historically been leveraged to meet a portion of design day needs for the EGD rate zone
- Third-party services have generally taken two forms:
 1. Peaking Service: winter service, typically 10 days of service, callable by the utility when requested, delivers to the distribution system, procured through RFP, no renewal rights, contracted each year
 2. Delivered Service: winter/summer/annual service, baseload service for term/season, may include assignment of capacity or exchange of supply delivered directly to the distribution system, procured through commercial negotiations, no renewal rights
- Third-party services provide flexibility to manage changing design day demands

New Capacity Open Season (NCOS) Bids

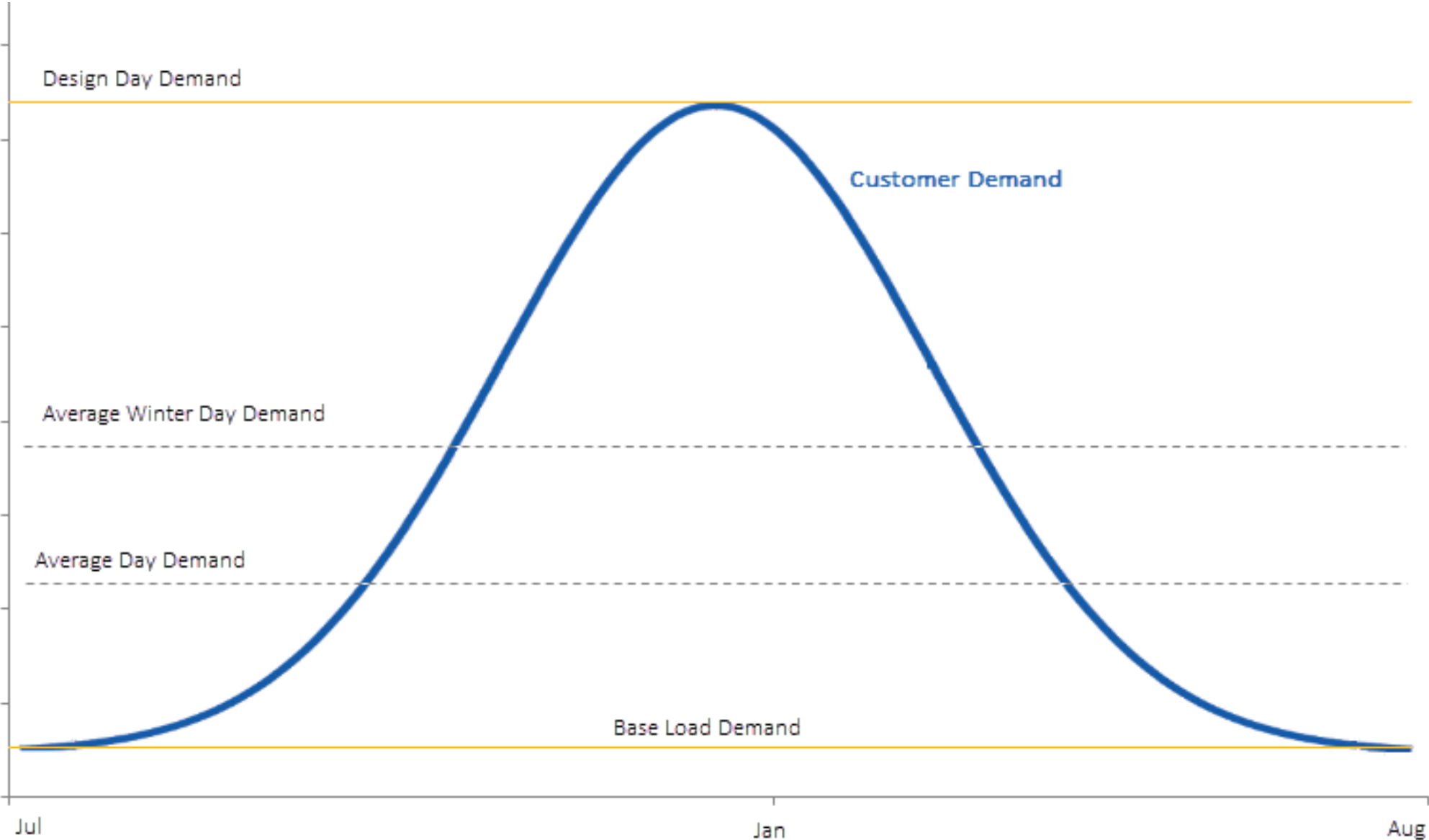


- NCOS bids:
 - Enbridge CDA = 100,000 GJ/d – Nov 1/21 in-service
 - Enbridge EDA = 25,000 GJ/d – Nov 1/21 in-service (potential Nov 1/22 in-service)
 - Union South = 40,000 GJ/d – Nov 1/21 in-service
- NCOS capacity to replace portion of third-party services for EGD rate zone; meet long term growth requirements for Union South rate zone
- Benefits of NCOS bids
 - Increased reliability (firm transportation in full control of utility)
 - Most economical FT option connected to a liquid supply point
 - Flexibility of service attributes and flexibility to nominate supply on the day in order to meet design day demand needs

Design Day vs Average Day Diagram



Customer Demand Curve



Rate Zone Demand Summary



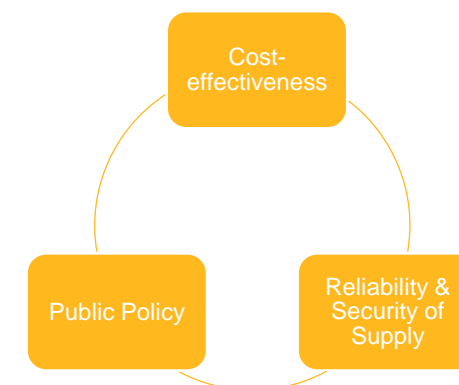
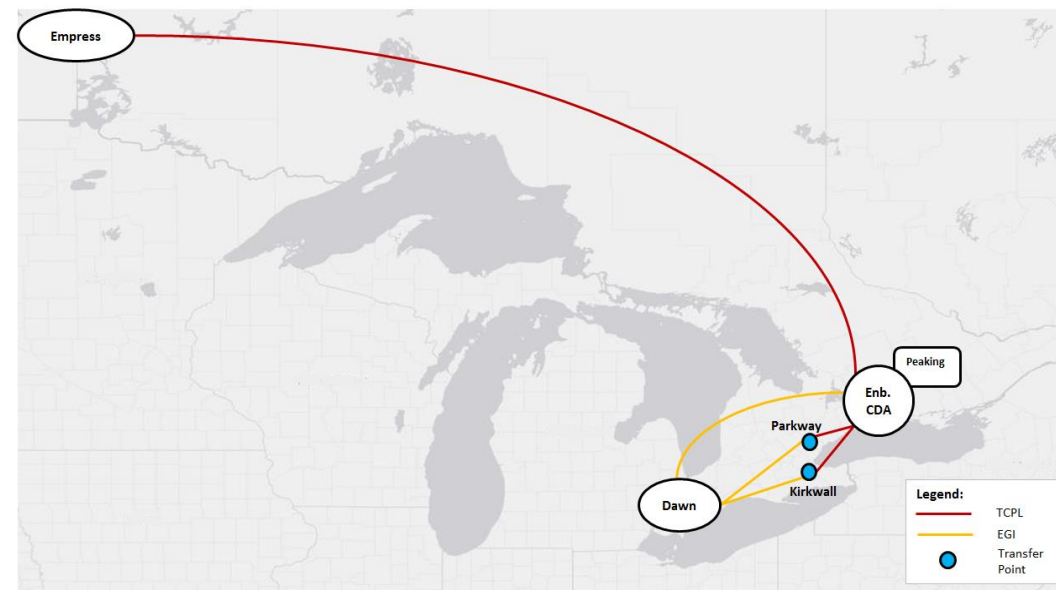
| (TJ/d) | EGD | Union North East | Union North West | Union South |
|---------------------------|-------|------------------|------------------|-------------|
| Base Load Demand | 437 | 35 | 13 | 234 |
| Average Day Demand | 1,255 | 109 | 42 | 591 |
| Average Winter Day Demand | 2,083 | 183 | 71 | 940 |
| Design Day Demand | 4,137 | 403 | 130 | 3,108 |

EGD Rate Zone

Design Day – Enbridge CDA

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---------------------|-------|-------|-------|-------|-------|
| Design Day Demand | 3,335 | 3,347 | 3,360 | 3,372 | 3,384 |
| Supply | 3,279 | 3,239 | 3,339 | 3,339 | 3,339 |
| Surplus/(Shortfall) | (56) | (108) | (21) | (33) | (45) |

- Evaluated 5 alternatives
 - Variety of receipt points
 - Dawn, Empress, delivery area
- Options sourced at Dawn and Empress provided similar reliability and diversity
- Cost, short-term availability of alternative, and magnitude of projected shortfall were key factors
- Continued growth in design day requirements supports need to renew all capacity delivering to the distribution area



EGD Rate Zone

Design Day – Enbridge EDA



| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---------------------|------|------|------|------|------|
| Design Day Demand | 693 | 700 | 707 | 715 | 722 |
| Supply | 678 | 678 | 703 | 703 | 703 |
| Surplus/(Shortfall) | (15) | (22) | (5) | (12) | (19) |

- Evaluated 4 alternatives

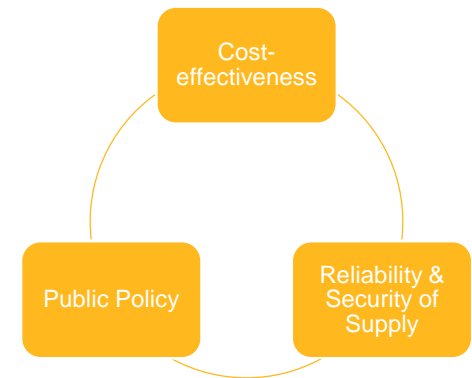
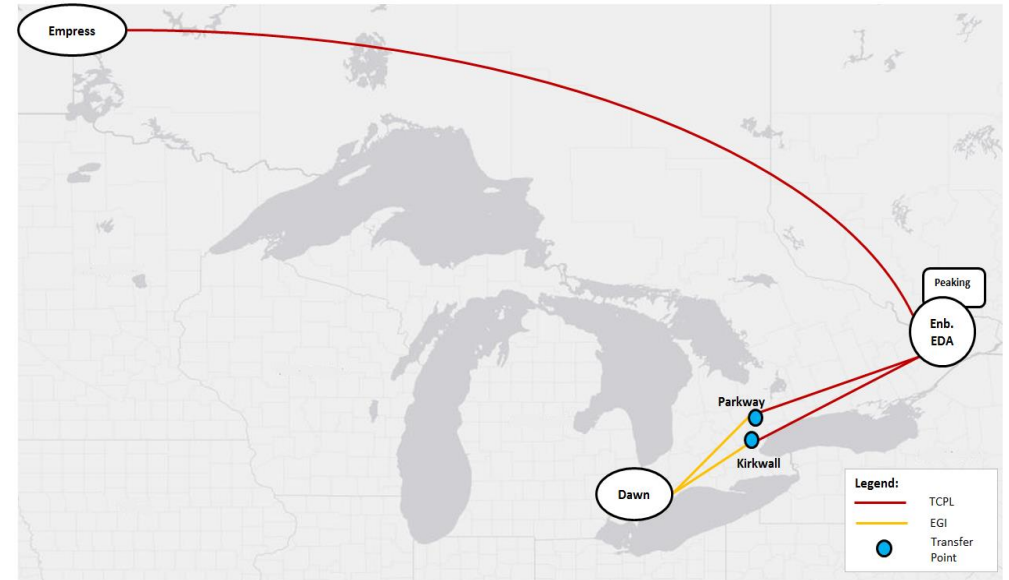
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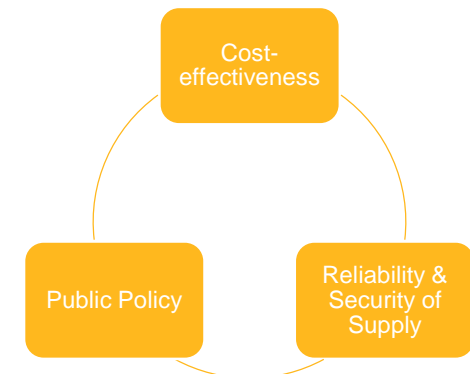
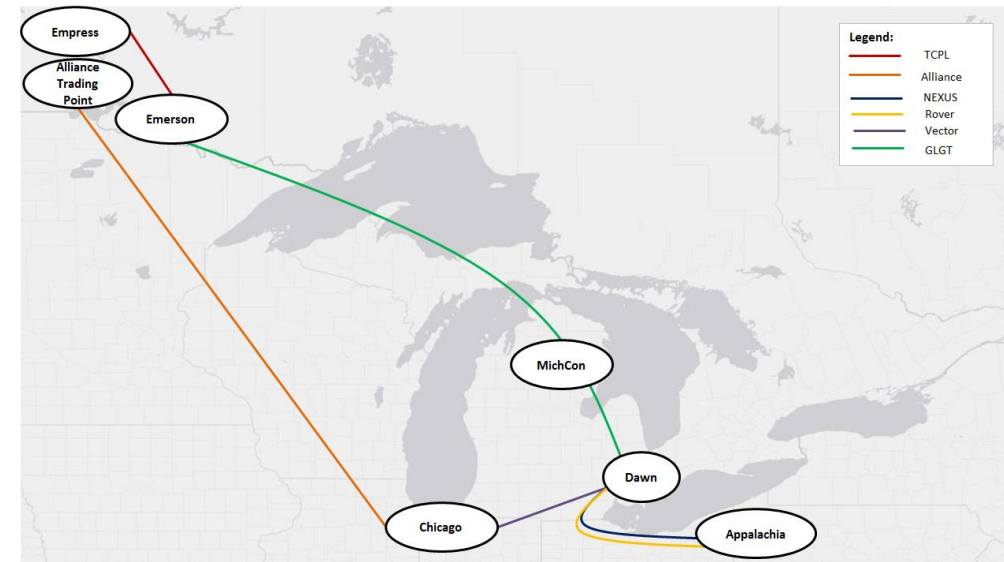


EGD Rate Zone

Average Day Growth

| Particulars (TJ) | 2020 | 2021 | 2022 | 2023 | 2024 | Growth 2020→2024 |
|------------------|---------|---------|---------|---------|---------|---------------------|
| Annual Demand | 310,661 | 310,365 | 309,876 | 309,960 | 309,821 | (839) |
| Daily Demand | 849 | 850 | 849 | 849 | 847 | (2) |

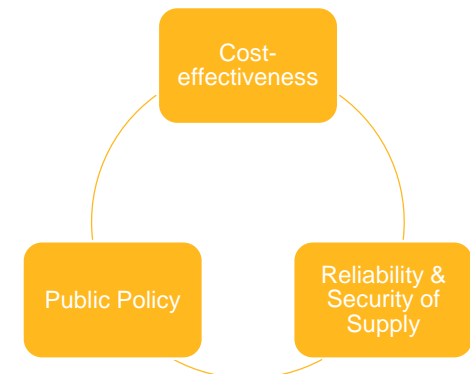
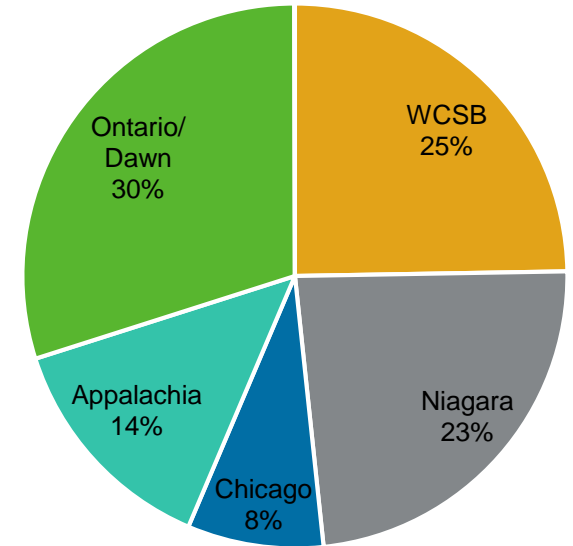
- Near-zero change in average day demand
- Existing portfolio is diverse and flexible
- Evaluated 6 alternatives to reduce exposure at Dawn
 - Variety of receipt points
 - Alberta, Appalachia, Chicago, Michigan
- All options provide similar reliability and flexibility
- Portfolio diversity could be improved by contracting with different upstream pipelines, with flexibility being reduced
- Landed costs range from \$3.25/GJ - \$3.81/GJ



EGD Rate Zone

Renewals

- All design day contract renewals are required
- NGTL capacity diversifies Empress requirement and provides reliability by procuring AECO/NIT
- Vector capacity evaluated against 6 alternatives:
 - Variety of receipt points:
 - Alberta, Appalachia, Michigan, Dawn
- All options provide similar reliability but mixed flexibility
- Most options result in portfolio diversity being reduced
- Landed costs range from \$3.25/GJ - \$3.81/GJ



EGD rate zone Decisions since May 1, 2019



- Acquisition Update – Listing of new contracts
 - Several TC Energy contracts have been extended from 2024 to 2026 as part of their term up provisions related to an upcoming facilities build
 - In final stages of procuring incremental delivered service volumes

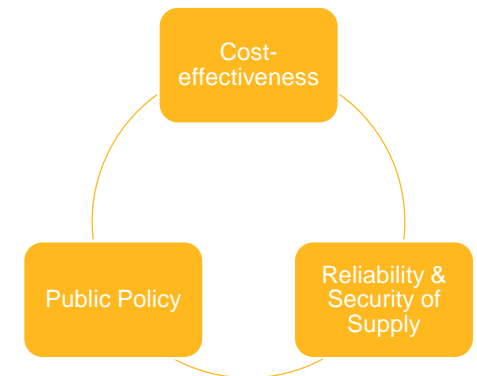
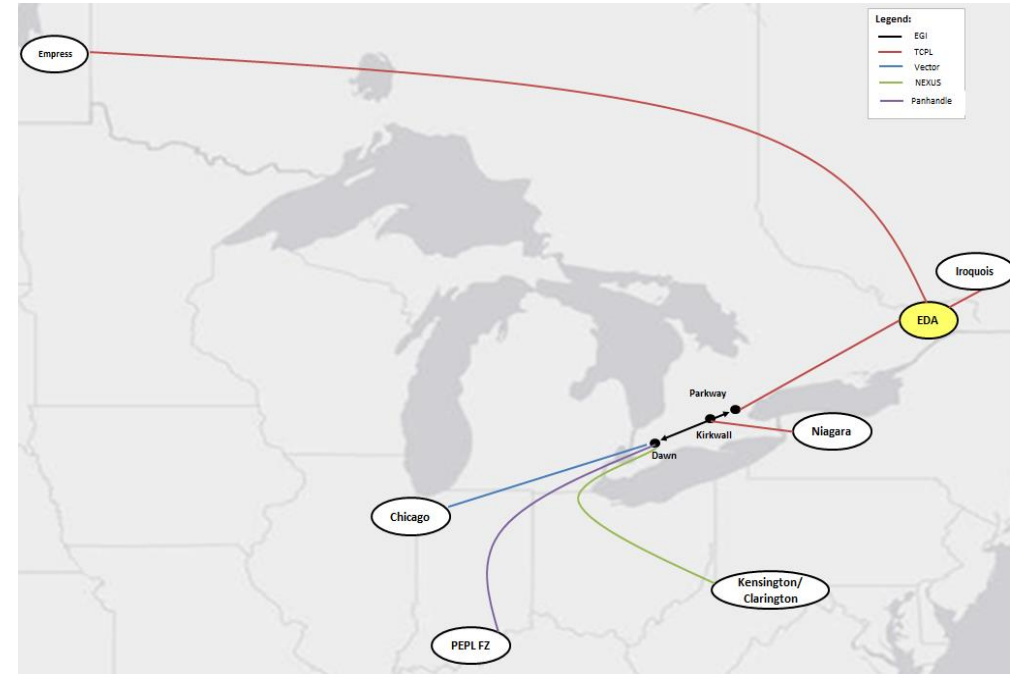
Union Rate Zones

Design Day – Union North East



| | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 |
|---------------------|---------|---------|---------|---------|---------|
| Design Day Demand | 403 | 400 | 408 | 408 | 411 |
| Supply | 403 | 400 | 406 | 405 | 406 |
| Surplus/(Shortfall) | 0 | 0 | -3 | -4 | -5 |

- Evaluated 4 alternatives
 - A variety of receipt points
 - Empress, Dawn, Kirkwall, Iroquois
- All options provided similar flexibility and diversity
- Niagara differed than others on reliability
- Landed cost range \$4.78 - \$6.47

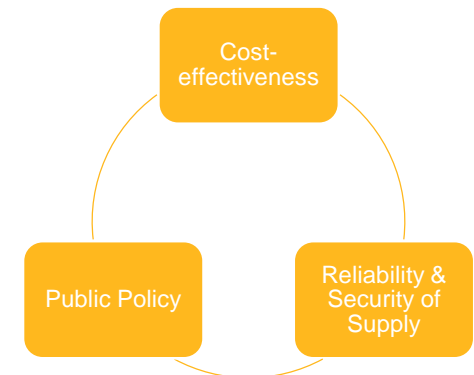
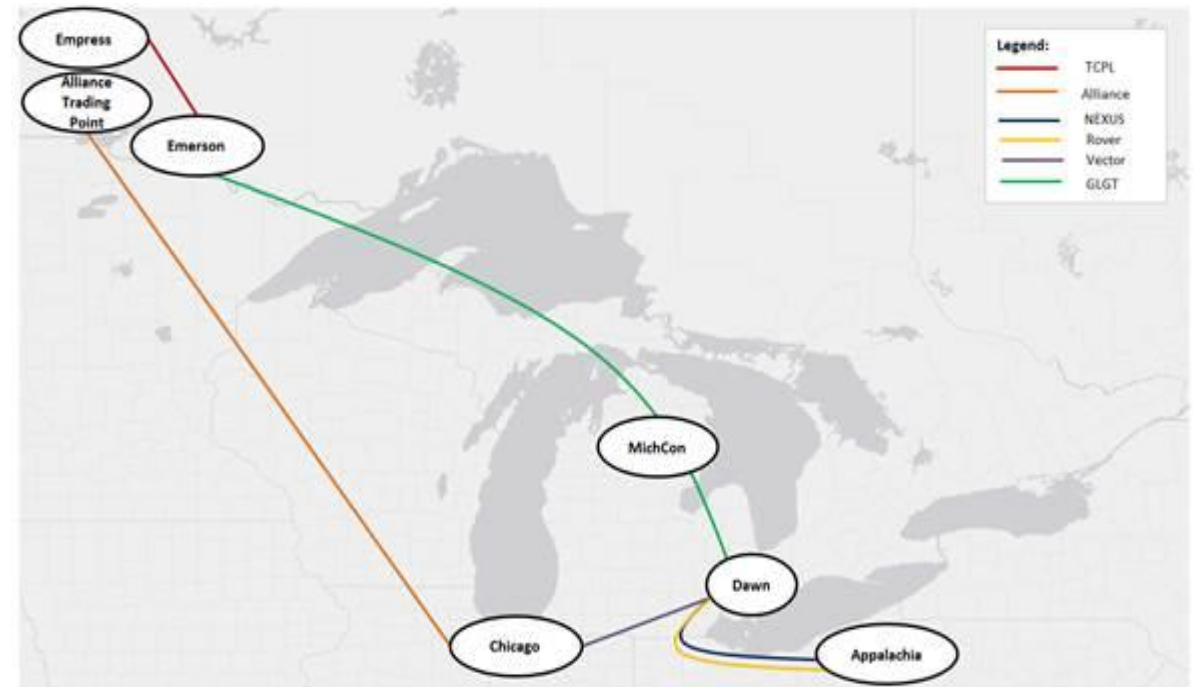


Union Rate Zones

Average Day Growth

| Line No. | Particulars (TJ) | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | Growth 2020 → 2024 |
|----------|------------------|---------|---------|---------|---------|---------|--------------------|
| 1 | Annual Demand | 180,093 | 178,656 | 178,204 | 177,725 | 178,292 | (1,801) |
| 2 | Daily Demand | 493 | 489 | 488 | 487 | 488 | (5) |

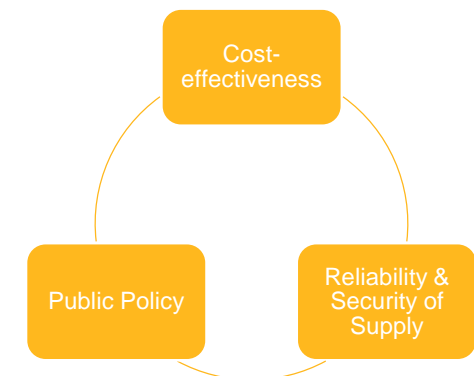
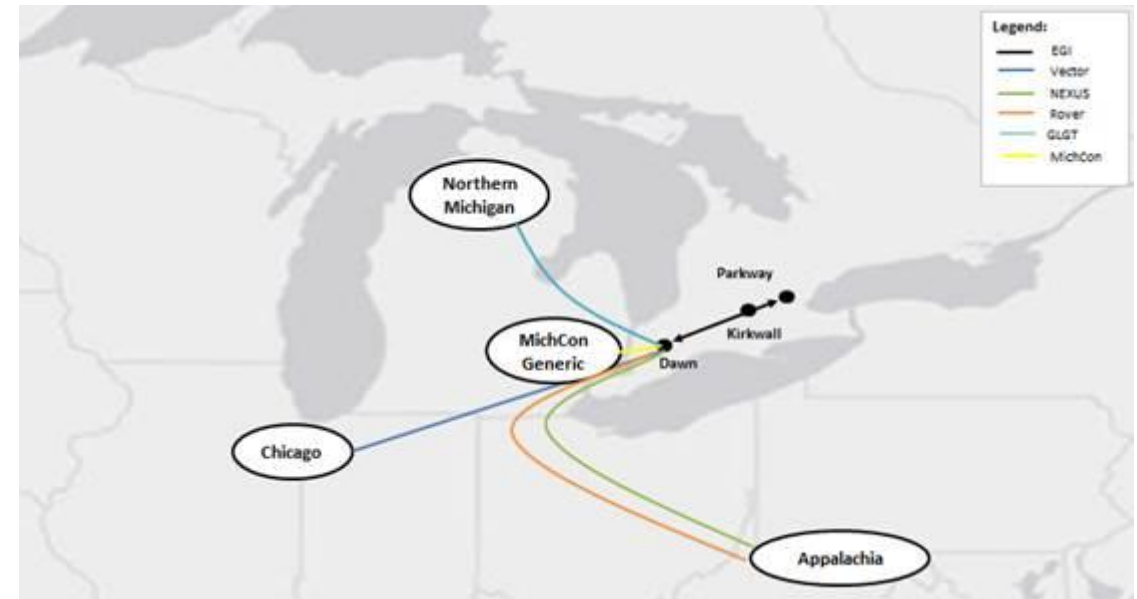
- Union Rate Zone average day relatively flat over projection period
- Evaluated 7 alternatives
 - A variety of receipt points
 - Dawn, Chicago, Appalachia, MichCon, Northern Michigan
- Dawn considered most flexible
 - No contract required
- GLGT, Alliance & Vector and Rover considered to increase path diversity
- Landed costs range from \$3.25/GJ - \$3.81/GJ



Union Rate Zones

Sarnia

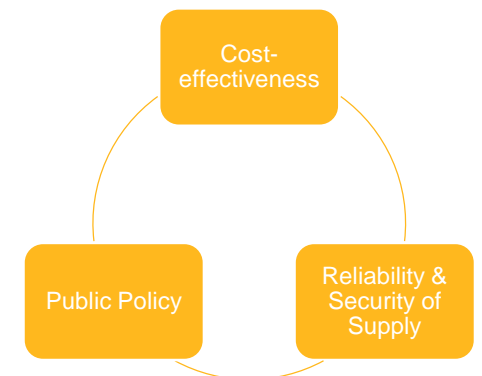
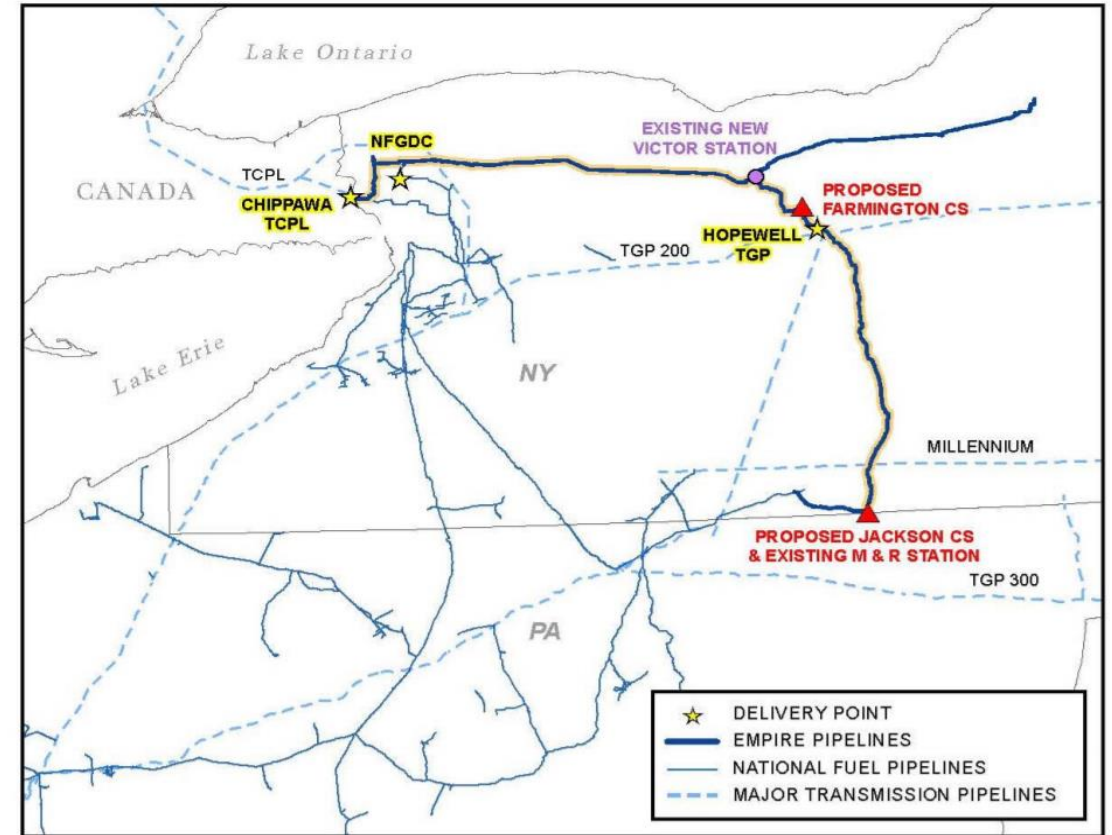
- Renewal over 5-year plan
 - Vector
- Evaluated 5 alternatives
 - A variety of receipt points and paths
 - Appalachia: Rover, NEXUS
 - MichCon
 - Northern Michigan: GLGT
- All options provided similar reliability
- Vector and Nexus considered to be more flexible with deliveries to Sarnia market
- Landed cost range \$4.01-\$4.74



Niagara as a Supply Option

Empire North Project

- Niagara is a less liquid hub
- Empire North Project
 - Increases deliveries to Chippawa and Hopewell b
 - Two new compressors to be installed
 - Fully-subscribed from 2015 open season
 - Open Season bids required 40% of proposed Maxim



Union Rate Zone Decisions since May 1, 2019



- Acquisition Update – Listing of new contracts
 - Several TC Energy contracts extended from 2024 to 2026
 - TC Energy required term up as part of the provisions related to an upcoming facilities build
 - New contract path
 - Empress to Emerson
 - Emerson to Great lakes
 - Great Lakes to Dawn

Q & A

Public Policy & Related Items

Demand Side Management (DSM)

- DSM is incorporated into the annual demand forecast as described on pages 31 and 69 of the Plan
- DSM volumes included in Plan
 - Approved by the Board in its DSM Plans (EB-2015-0029/0049)
 - Plan incorporates sufficient flexibility to respond to changes in annual demand as a result of DSM volume fluctuations
- While Demand Reduction Induced Price Effects (DRIPE) relates to gas supply, it is more appropriately incorporated and considered in DSM plans and programs
- Further questions and discussion of DSM would be most appropriately addressed in the 2021 DSM Framework consultation (EB-2019-0003) as further described in the Board's letter dated September 16, 2019

Integrated Resource Planning (IRP)

- EGI plans to file an IRP proposal with the Board before the end of 2019
- The Plan contains sufficient flexibility
 - Should IRP result in meaningful changes to demand, adjustments can be made to accommodate those changes
- Further questions and discussion of IRP would be most appropriately addressed in the proceeding to review EGI's forthcoming IRP application

Local Production

- Natural gas is a commodity that is traded on the open market, and EGI makes two contracts available to producers to either sell gas to EGI or sell directly to the market
- Under the GPA (gas purchasing agreement under which gas is sold to EGI) producers are paid a price equal to the near-month Dawn Index less a balancing and transportation charge
- Fair price for locally produced gas = market price
- The GPA is a commercial gas purchase agreement as opposed to a regulated service. As such EGI does not anticipate including the GPA within the suite of “OEB-approved contracts”

Local Production Continued

- Measures to support locally produced gas were addressed in early 2000's
- Cost of facilities, fees or rates paid for services would be best addressed in a proceeding in which distribution costs, rates and services are being reviewed. EGI's re-basing application is likely the most appropriate venue

Carbon Pricing & Reduction

- A price on carbon was incorporated into the inputs generating demand forecasts for both rate zones
- EGI has been monitoring and participating in the development of a Clean Fuel Standard
- The Plan incorporates sufficient flexibility to respond to changes in demand resulting from implementation of these technologies
- Pursuit of other carbon reducing technologies and policies,¹ would best be accommodated in the development of the post 2020 DSM Framework, the anticipated Clean Fuel Standard Framework should it materialize, or EGI's pending IRP application

1. Specific list included fuel-switching, increased distributed energy resources, community energy planning, integrated resource planning, increased DSM and the general topic of Provincial Air Quality and Climate Change

Community Expansion & Bill 32

- Reference to Community Expansion on pages 102-103 of the Plan was meant to demonstrate EGI's commitment to supporting public policy more broadly
- Neither detailed analyses nor feasibility assessments have been conducted for the total number of communities listed on page 103
- No demand or assets have been built into the Plan on the assumption of new communities materializing beyond those projects identified in Ontario Bill 32, Regulation 24/19
- Specific questions regarding the impacts and viability of community expansion are best addressed by interested parties in the Leave to Construct applications specific to those projects

Renewable Natural Gas (RNG)



- EGI is in the process of finalizing a voluntary RNG program targeted at general service customers that is self-funded and has no cost or bill impacts for non-participants and will file an application with the Board requesting its approval
- Assuming no changes to provincial government or other policies RNG volumes are expected to be modest, beginning with 9,800 GJ/yr in 2020 and growing to 32,650 GJ/yr in 2029
- The Plan has sufficient flexibility to accommodate these very modest volumes, and further flexibility to accommodate additional changes should they materialize
- EGI has yet to incur any capital expenses as a result of this program
- Further questions and discussion of RNG would best be brought forward in EGI's forthcoming application

Q & A
