

FortisBC Resource Planning Engagement Session – Lower Mainland

January 18, 2022

The energy to think differently



Focus of today's session

- To provide background on upcoming Long Term Gas Resource Plan (LTGRP)
- To introduce FortisBC's conservation programs for Indigenous communities
- To better understand your energy priorities and plans for the future
- Seek feedback on FEI's engagement process



Agenda

1. Welcome, introductions and session overview

2. Brief overview of the resource planning process
3. Energy planning landscape in BC and FEI's Clean Growth Pathway
4. Break
5. FEI Conservation and Energy Management programs for Indigenous Communities
6. 2022 Long Term Gas Resource Plan Overview
7. Ongoing resource planning and engagement

Discussion: How can we work together in resource planning and supporting FEI's transition to a Clean Growth Pathway?

8. Wrap-up and next steps

Speakers introductions



Ken Ross
Manager, Resource
Planning & DSM
Reporting



Carol Suhan
Manager, Community
Programs, Conservation
& Energy Management



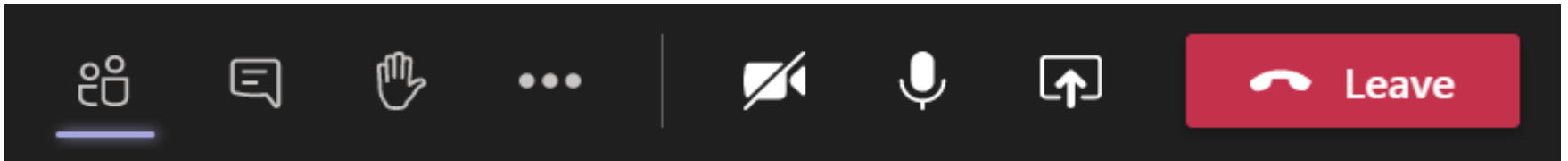
Breannen Dick
Community and
Indigenous Relations
Manager

We welcome registered Communities

- Skawahlook First Nation
- Seyem Qwantlen/ Shxwha:y Village
- Kwikwetlem First Nation
- Seabird Island Band
- Musqueam Indian Band

Housekeeping

- We encourage you to participate through video
- When you're not speaking, mute yourself to reduce background noise
- We will have plenty of scheduled breaks for questions and discussion
- We encourage you to use the hand-up function to indicate you'd like to speak
 - When we call upon you, feel free to un-mute yourself and speak clearly
 - You may also use the chat functionality if you'd prefer
- The session audio/video will not be recorded, however, the chat history will be saved for note-taking purposes



Disclaimer for an open dialogue

- The input provided during this workshop may become public during our regulatory proceedings
- However, we will not attribute input to any specific individual or organization
- We encourage you to provide further input during the formal regulatory proceedings – even if your opinions have changed
- We intend to provide the presentation and meeting notes from today's session on our website
- You will have an opportunity to review these notes prior to us publishing them online

Safety reminders – Emergency Planning

- Prepare an emergency kit for your home and vehicle
- Pack enough supplies for 72 hours
- Store your emergency kit(s) in easily accessible locations
- For a full list of emergency kit items, please visit the Public Safety Canada website at: <https://www.getprepared.gc.ca/cnt/kts/bsc-kt-en.aspx>



Energy planning opportunities or issues discussed in previous workshops

- How to ensure the UN Declaration and Indigenous energy priorities are key objectives of the resource plan
- How this resource plan relates to specific FortisBC projects
- Cost and affordability are key priorities
- Interest in expanding natural gas service to some communities
- Energy efficiency and community partnerships
- Renewable energy supply options such as:
 - Renewable natural gas (RNG)
 - Hydrogen
 - Electric vehicles
 - Solar
- Feedback on ongoing engagement

Partners and communities



FortisBC: Breannen Dick, Roger Dall'Antonia
Musqueam First Nation: Elders Thelma & Arthur Stogan
2019 National Indigenous Peoples Day at our Surrey Operations Office

- We **serve the communities** in which we live and work.
- We are committed to building **strong relationships** to support our community partners & business operations.
- Understanding, respect, open communication and trust are key values embedded in our **Statement of Indigenous Principles.**

Why strong Indigenous relationships are important to FortisBC

- **Statement of Indigenous Principles** created in 2001.
- We are continually working to build **strong relationships** with Indigenous communities, their leadership and their members.
 - Commitment to early and transparent engagement
 - Awareness training for FortisBC staff
 - Opportunities for economic partnerships and employment for Indigenous peoples
- We support the **United Nations Declaration on the Rights of Indigenous Peoples** and the **Truth & Reconciliation Commission's Calls to Action**.
- Progressive Aboriginal Relations Certification (PAR).



Progressive
Aboriginal
RELATIONS

COMMITTED

Alex Wells, Francis James, Lil'wat
Nation in 2018 Surrey Ops

Canadian Council for
Aboriginal Business



Energy at work  FORTIS BC™

FortisBC overview



- Largest energy provider in the province
- Our infrastructure serves **135 communities**, including **57 First Nations Communities**
- We serve **1.2 million** customers providing:
 - electricity
 - natural gas
 - renewable gas
 - propane
 - alternative energy solutions
- We employ **2,400** people

Clean Growth Pathway to 2050

Sharing goals to lower GHGs and drive economic growth

FortisBC continues to:

- offer solutions to help customers reduce GHGs
- collaborate with industry, public, government and regulators
- help inform the CleanBC consultation process and plan BC's energy future



Energy at work  FORTIS BC

Questions for clarification or discussion



Brief overview of the resource planning process



Purpose of resource planning

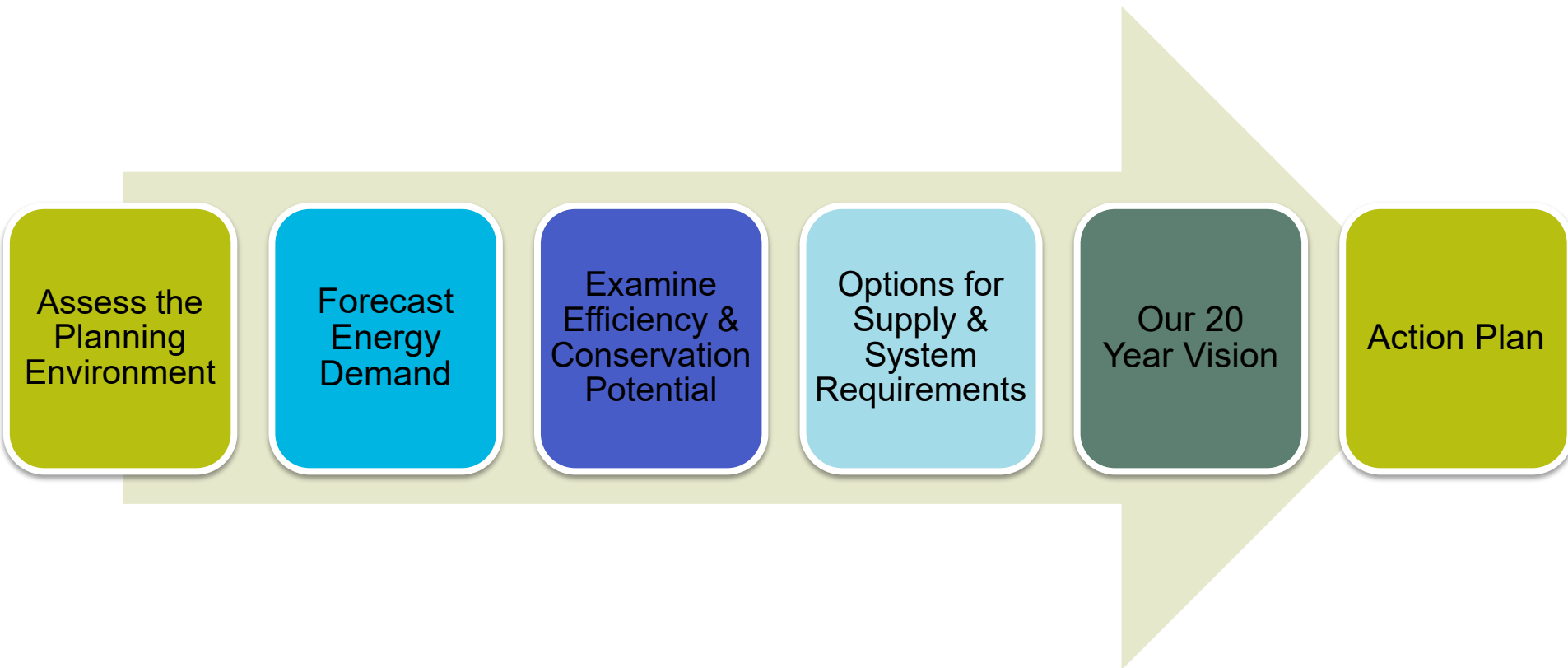
- The LTGRP **looks ahead 20 years** and provides a road map for securing safe, reliable, lower carbon, and cost-effective energy resources.
- Represents an important component in our **overall utility planning as we transition to the Clean Growth Pathway.**
- Requirement of the Utilities Commission Act (UCA). Seeking **acceptance** from the British Columbia Utilities Commission (BCUC).
- The last plan was submitted in December 2017 and accepted in February 2019.
- The next plan will be submitted in March 2022.

Energy at work  FORTIS BC™

FortisBC 2017 Long Term Gas Resource Plan



Resource planning process



Ongoing engagement for developing current and next Plan

Resource planning objectives

1

Ensure cost effective, secure and reliable energy for customers

2

Provide cost-effective demand-side management and cleaner customer solutions

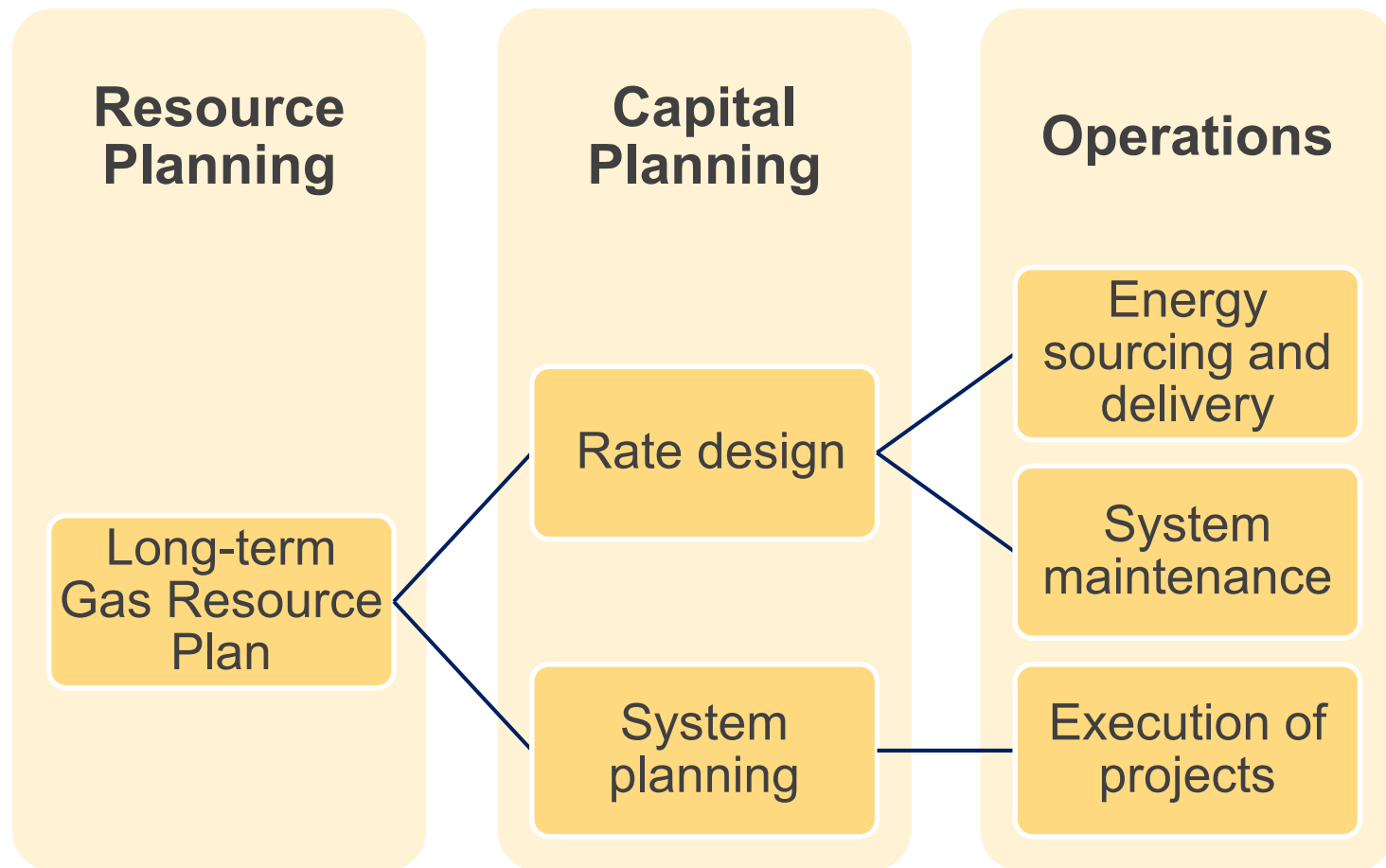
3

Ensure consistency with provincial energy objectives / GHG reduction targets

4

Address prior British Columbia Utilities Commission (BCUC) directives

Resource planning and day-to-day operations



How input provided today will be actioned through our resource planning process

- | | | |
|-------------------------------|---|-------------------------------------|
| ■ Community energy planning | ➔ | ■ Energy demand forecasts |
| ■ Community energy priorities | ➔ | ■ Actions to meet customer needs |
| ■ Partnership opportunities | ➔ | ■ Exploratory follow-up discussions |



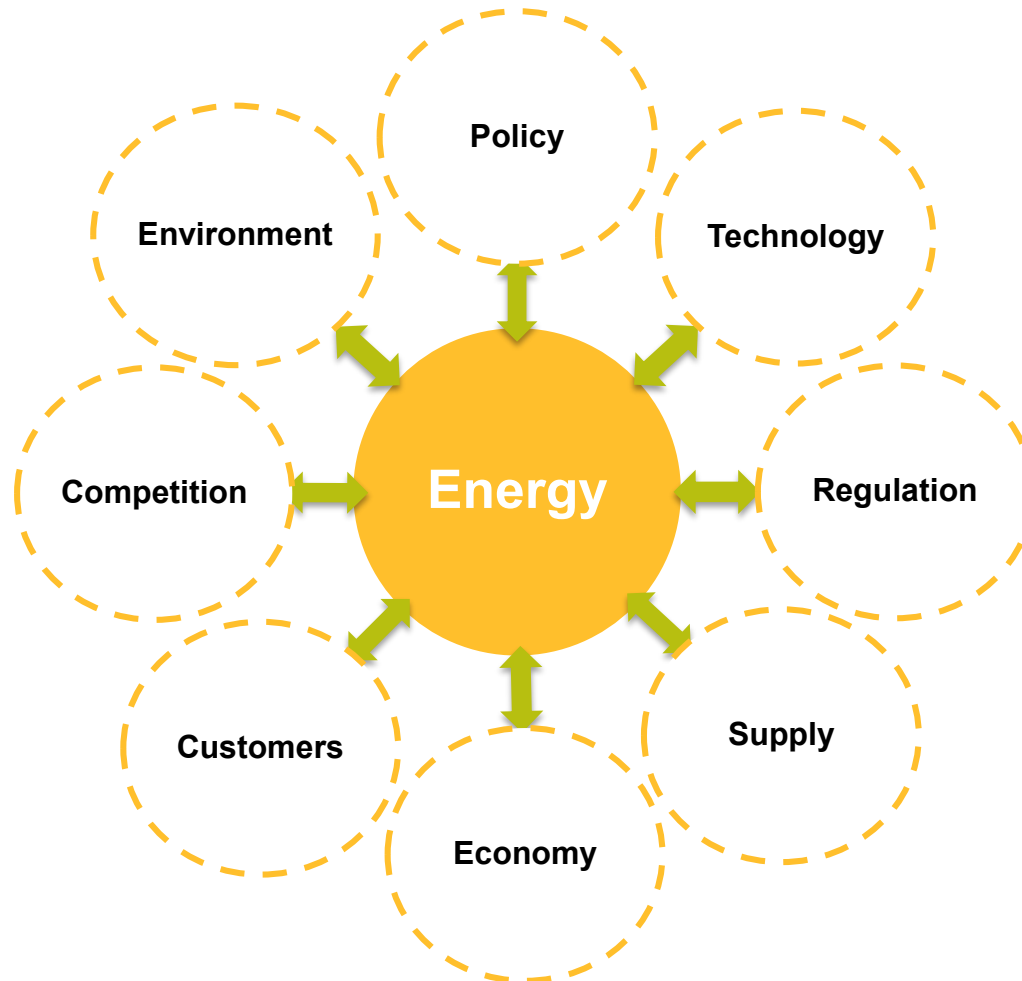
Questions for clarification



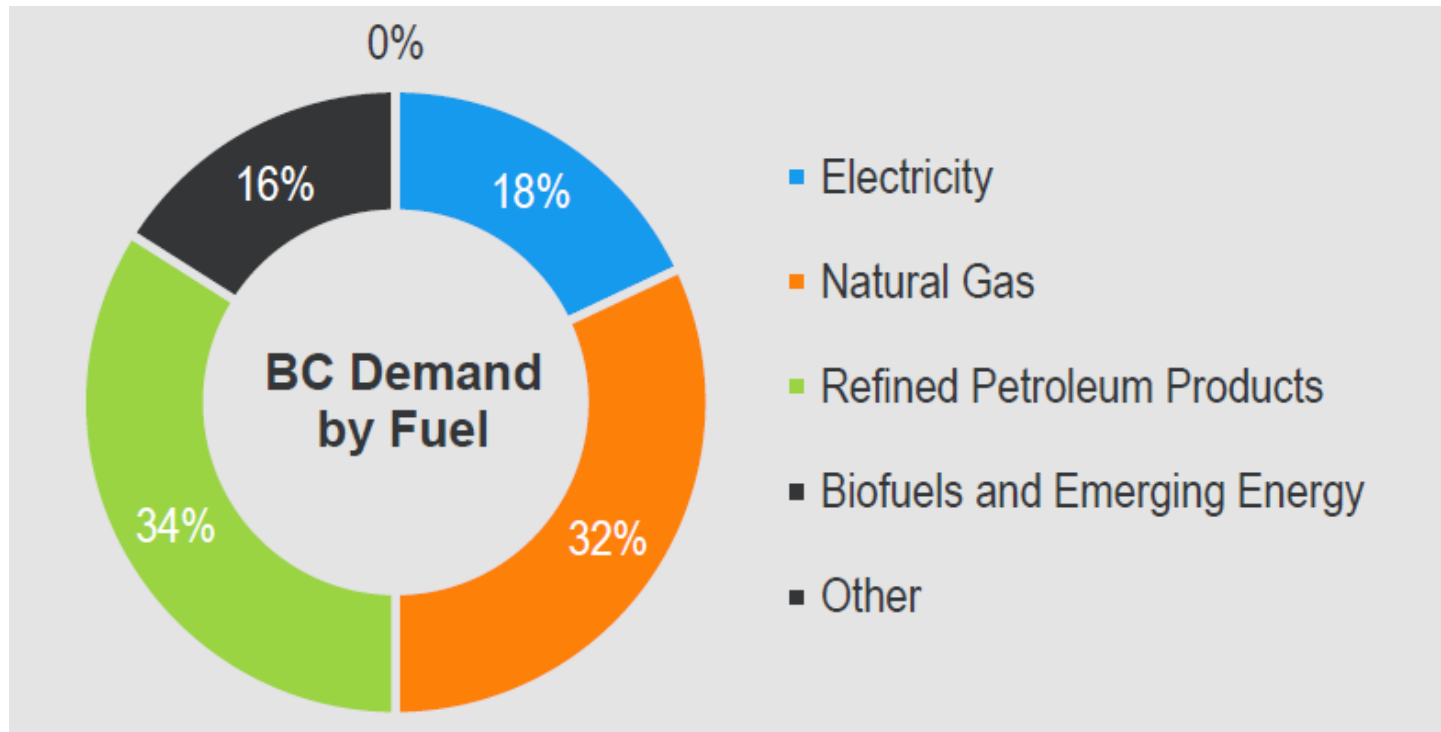
Energy planning landscape in BC and FEI's Diversified Pathway



Energy planning framework



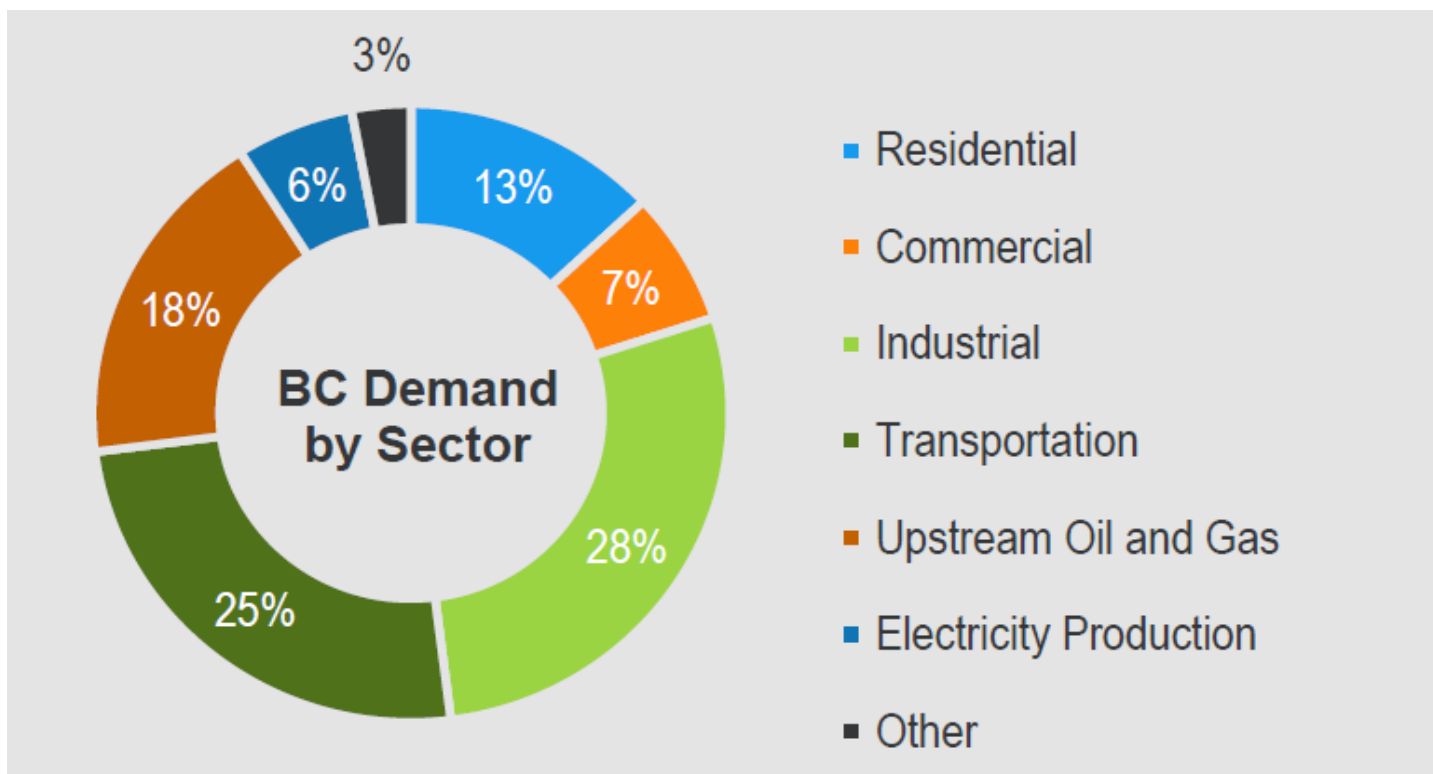
Energy demand in BC by fuel



Source: Canada Energy Regulator – Canada's Energy Future 2019 and CanESS (CANSIM)

Energy demand in BC by sector

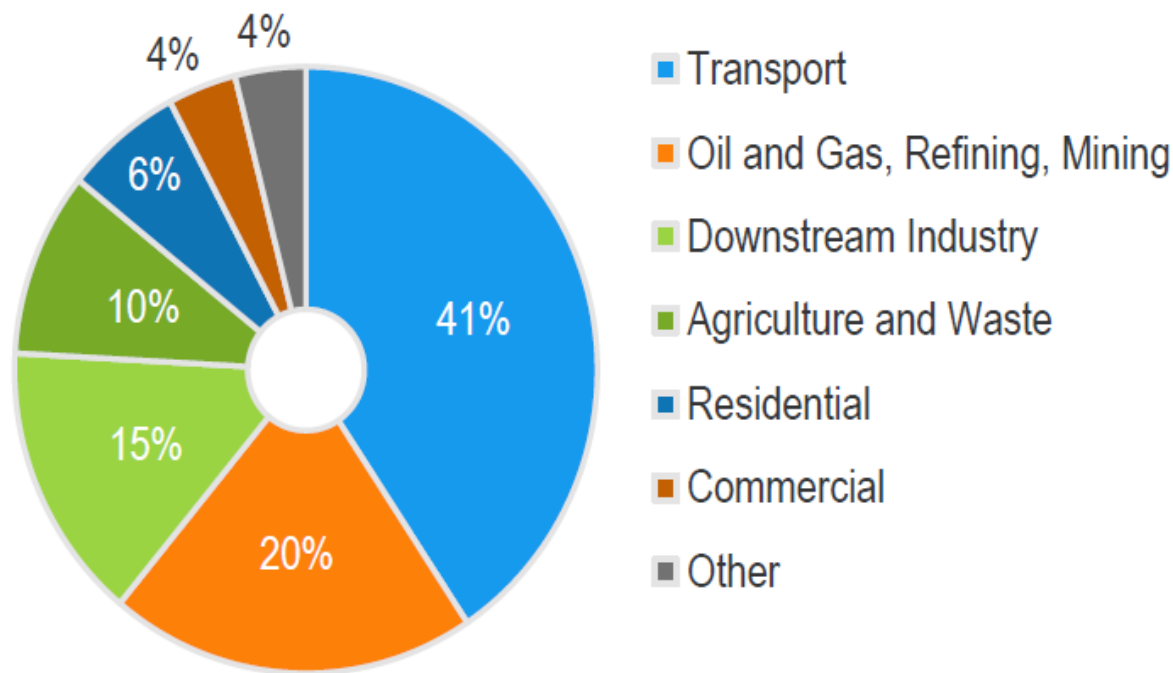
Industrial sector consumes a significant amount of energy



Source: Canada Energy Regulator – Canada's Energy Future 2019 and CanESS (CANSIM)

GHG emissions in BC by sector

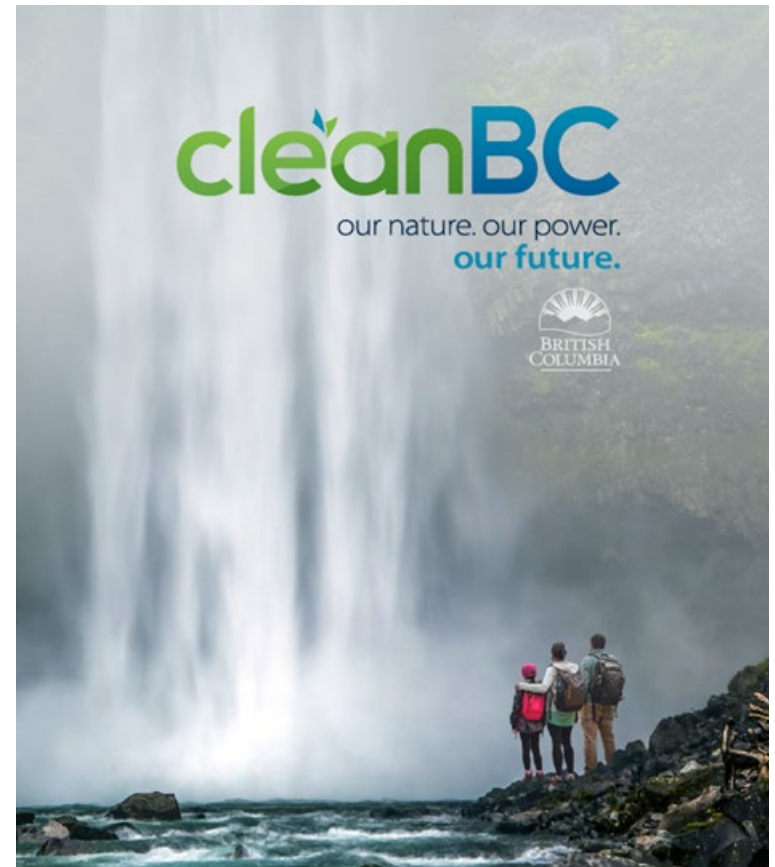
- Industry & transportation are the biggest contributors
- Buildings account for 10%



Source: BC GHG Inventory

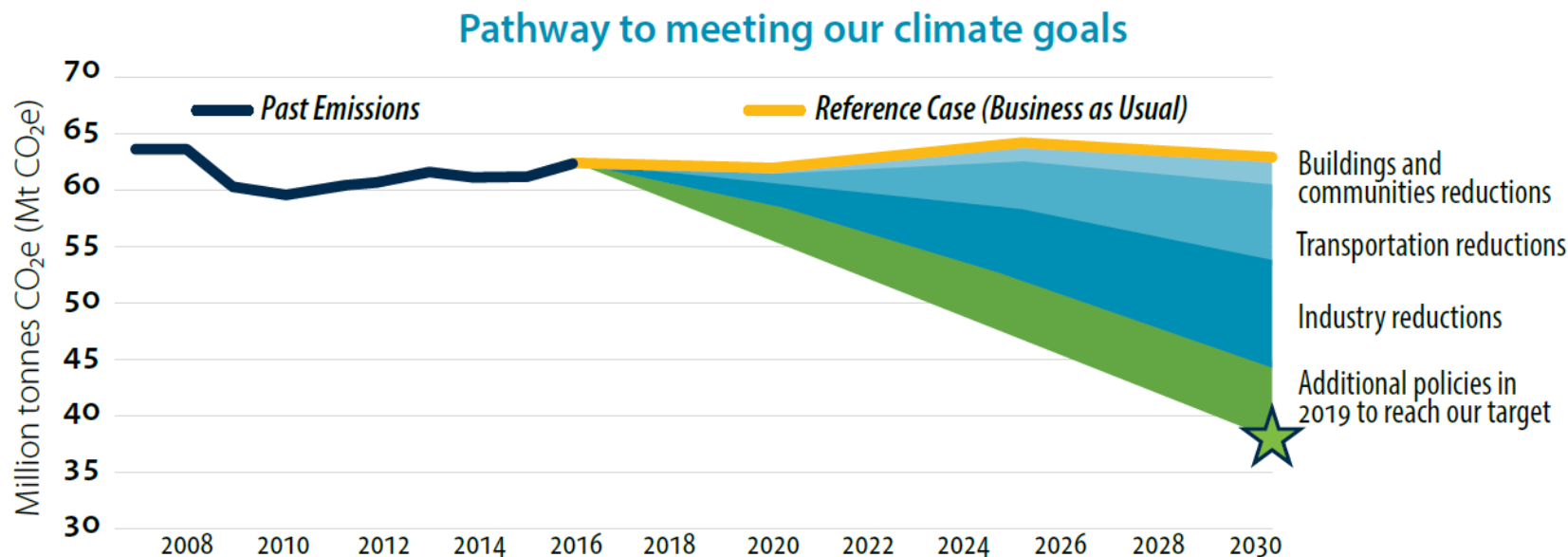
CleanBC and CleanBC Roadmap to 2030

- CleanBC is the provincial climate and economic plan to achieve greenhouse gas emissions by 2030.
- Plan outlines specific actions in the following categories with a focus on electrification:
 - Better buildings
 - Reducing pollution from industry
 - Cleaner transportation
 - Reducing emissions from waste
 - Clean energy jobs
- FortisBC is a critical partner in achieving the BC Government's goals.



CleanBC GHG emissions reduction targets

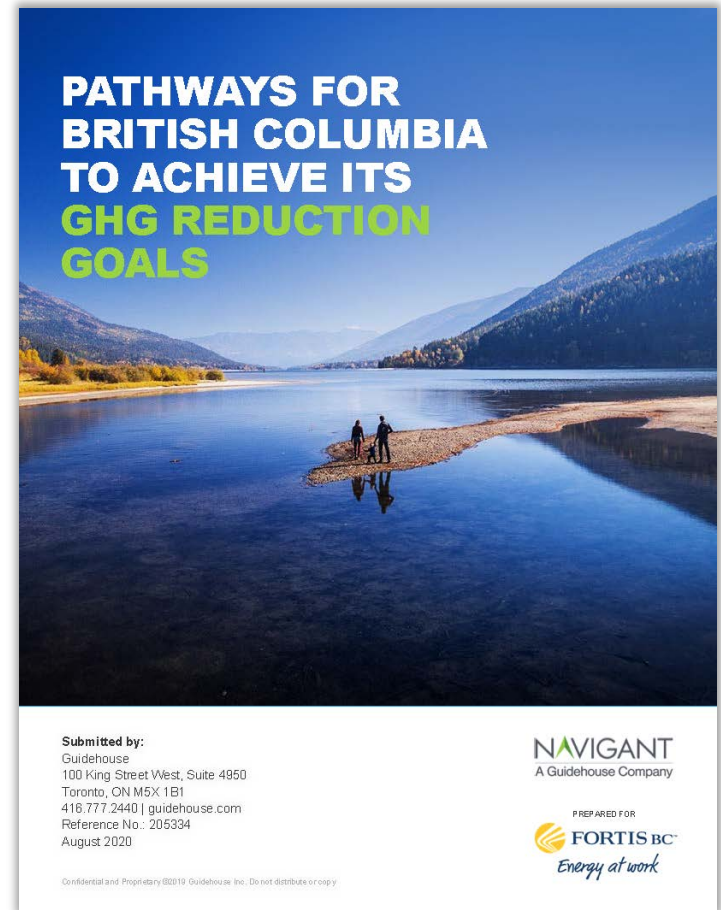
40% reduction in GHG emissions by 2030



Alternative pathways for GHG Reduction

FortisBC commissioned Guidehouse to:

- develop pathways for BC to achieve an **80% GHG reduction**
- compare two options: **Electrification** and **FEI's Diversified Pathway**
- analyze **GHG reductions, costs, reliability and risks** to British Columbians



Pillars of our Diversified Pathway to 2050



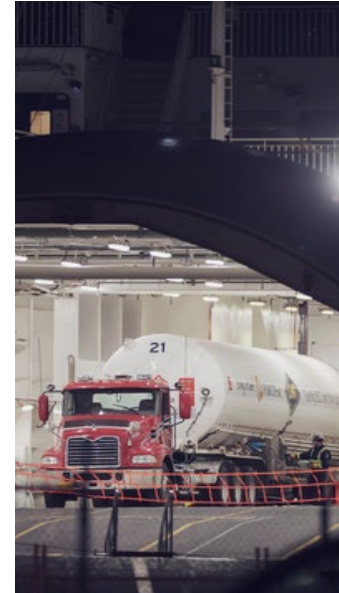
**Energy
efficiency**



**Renewable
and Low
Carbon Gases**



**Zero and
low carbon
transportation**



Global LNG

Electrification & Diversified Pathways

Electric Pathway



Energy efficiency

- Both pathways have similar energy efficiency assumptions



Fuel switching

- 100% of buildings heat & water to electric. Electric heat pumps key.



Transportation

- Both assume 100% LD vehicles to EV
- Significant role for EVs in medium and heavy duty (MD/HD) vehicles



Energy supply

- 3% renewable gas
- 45% electricity

Diversified Pathway



Energy efficiency

- Gas heat pumps key



Fuel switching

- NG to renewable gas
- Small percentage NG to electric



Transportation

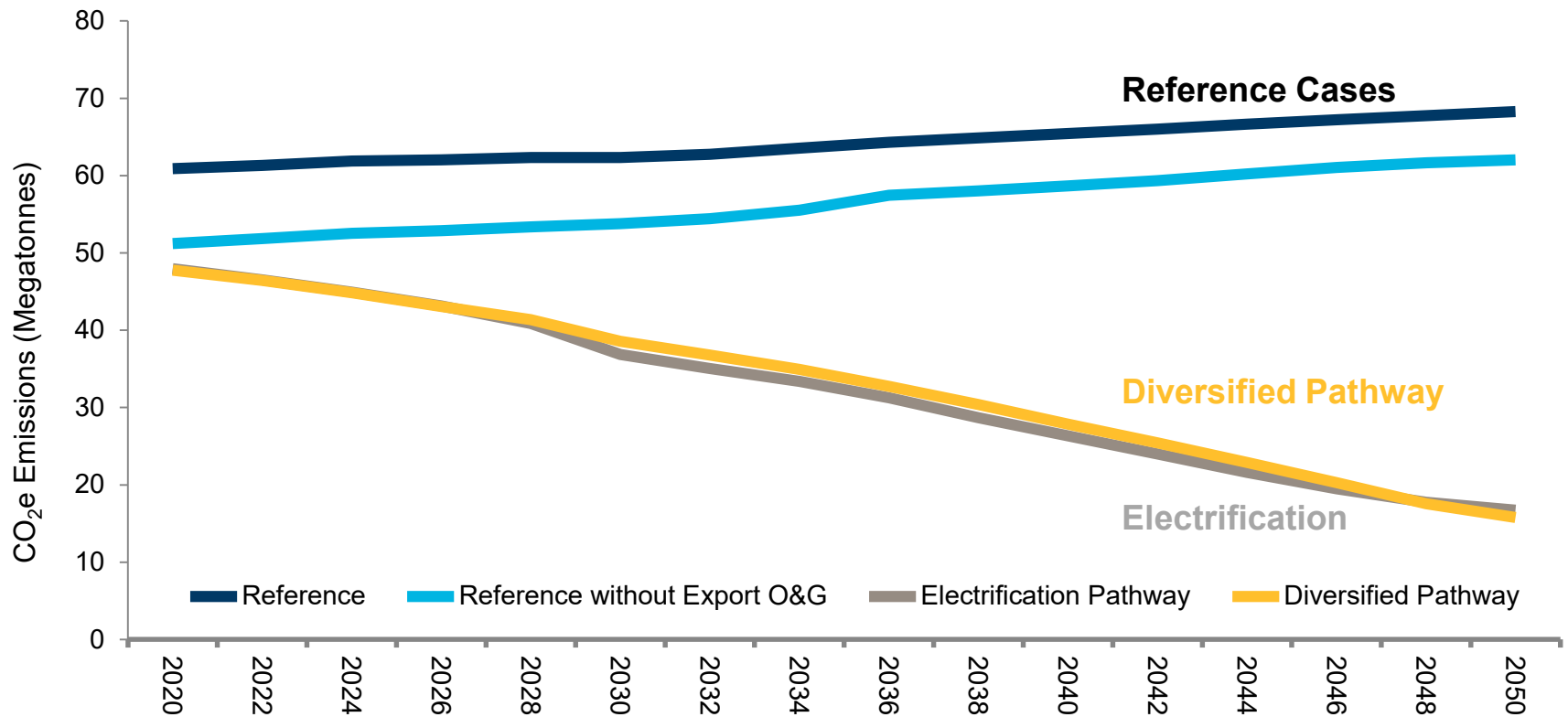
- Significant role for NG in MD & HD vehicles



Energy supply

- 14% renewable gas
- 37% electricity

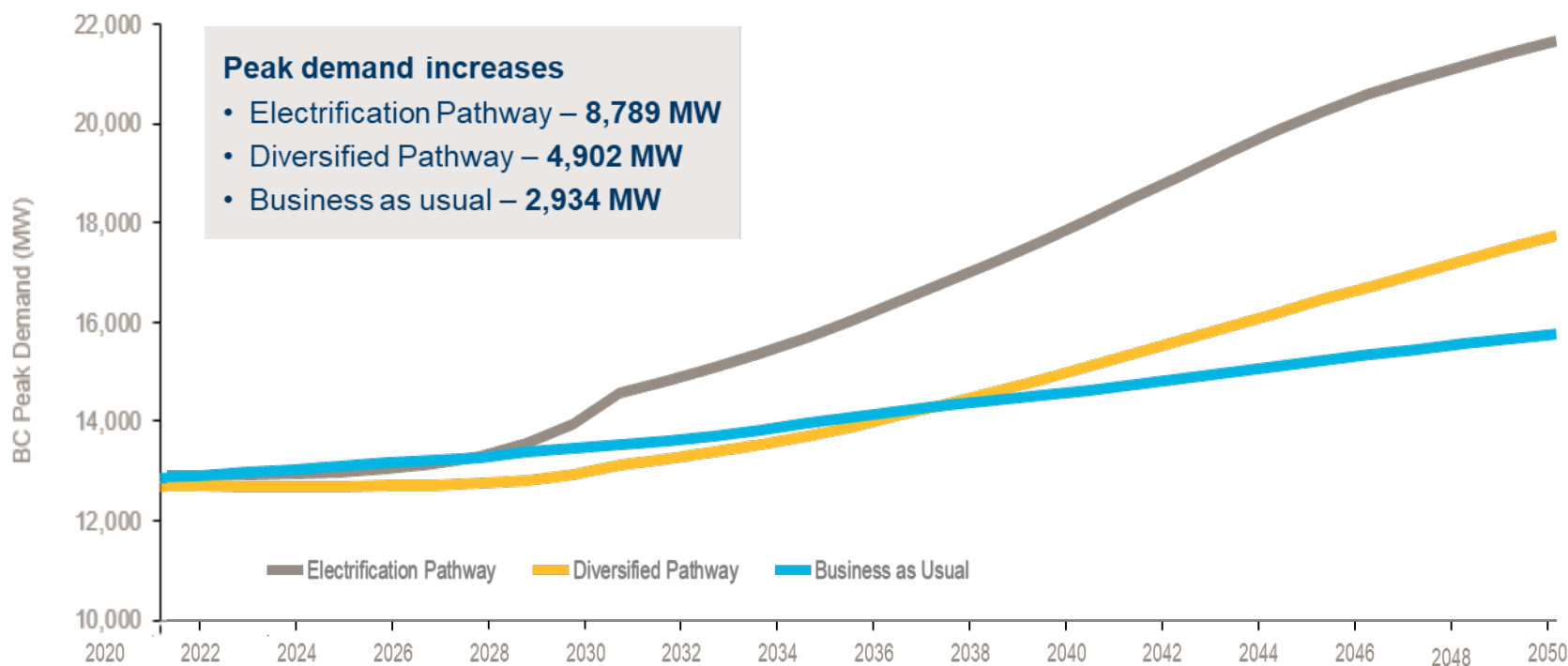
Both pathways achieve the same level of GHG reductions



Oil and Gas sector emissions attributable to exports are excluded from both the Reference Case emissions and Pathway emissions

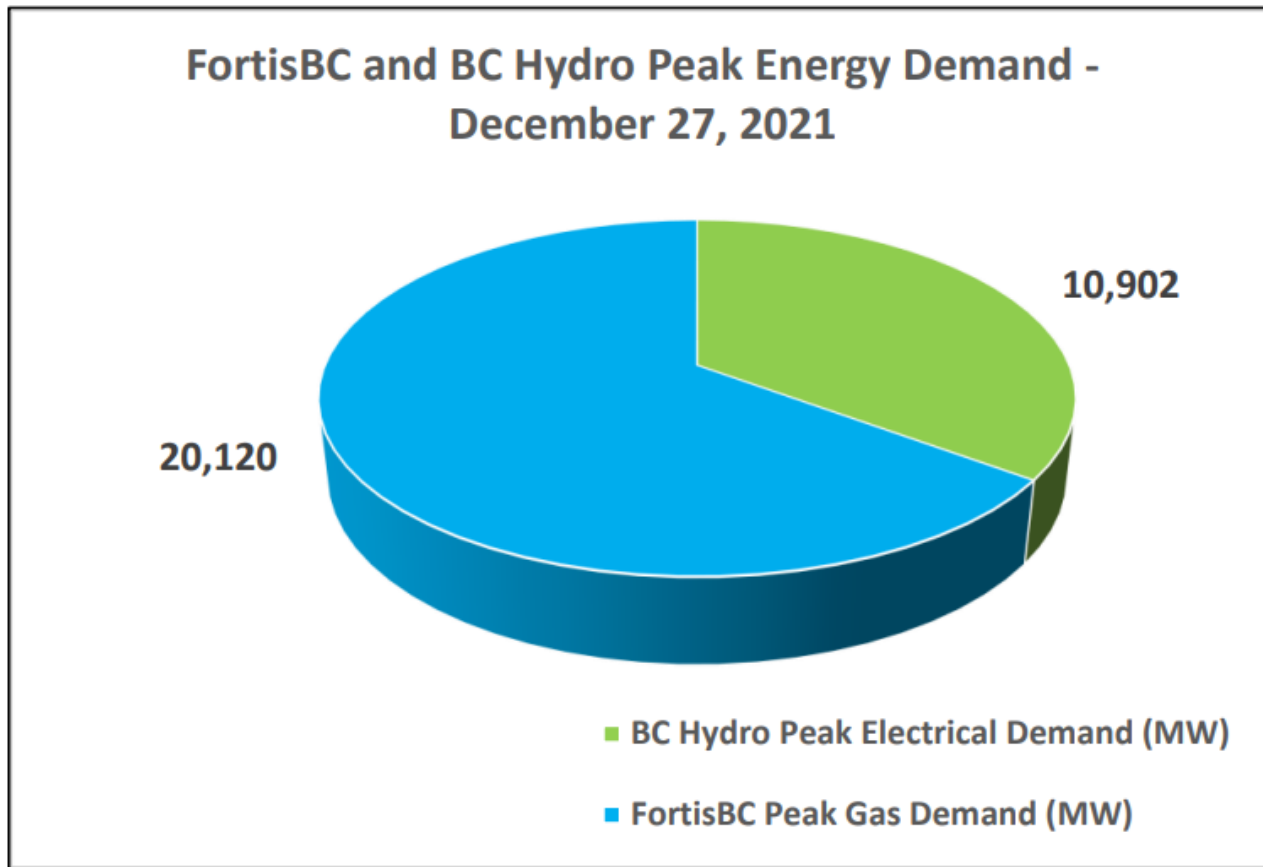
Key Challenge: Clean Electricity Peak Capacity

Peak demand is expected to increase by approximately **38%** (Diversified Pathway) and **68%** (Electrification Pathway), due to the addition of electric vehicles and electric heating



*Peak demand impacts are based on conservative assumptions in both pathways (e.g. majority of MHD vehicle charging occurs in non-peak times)

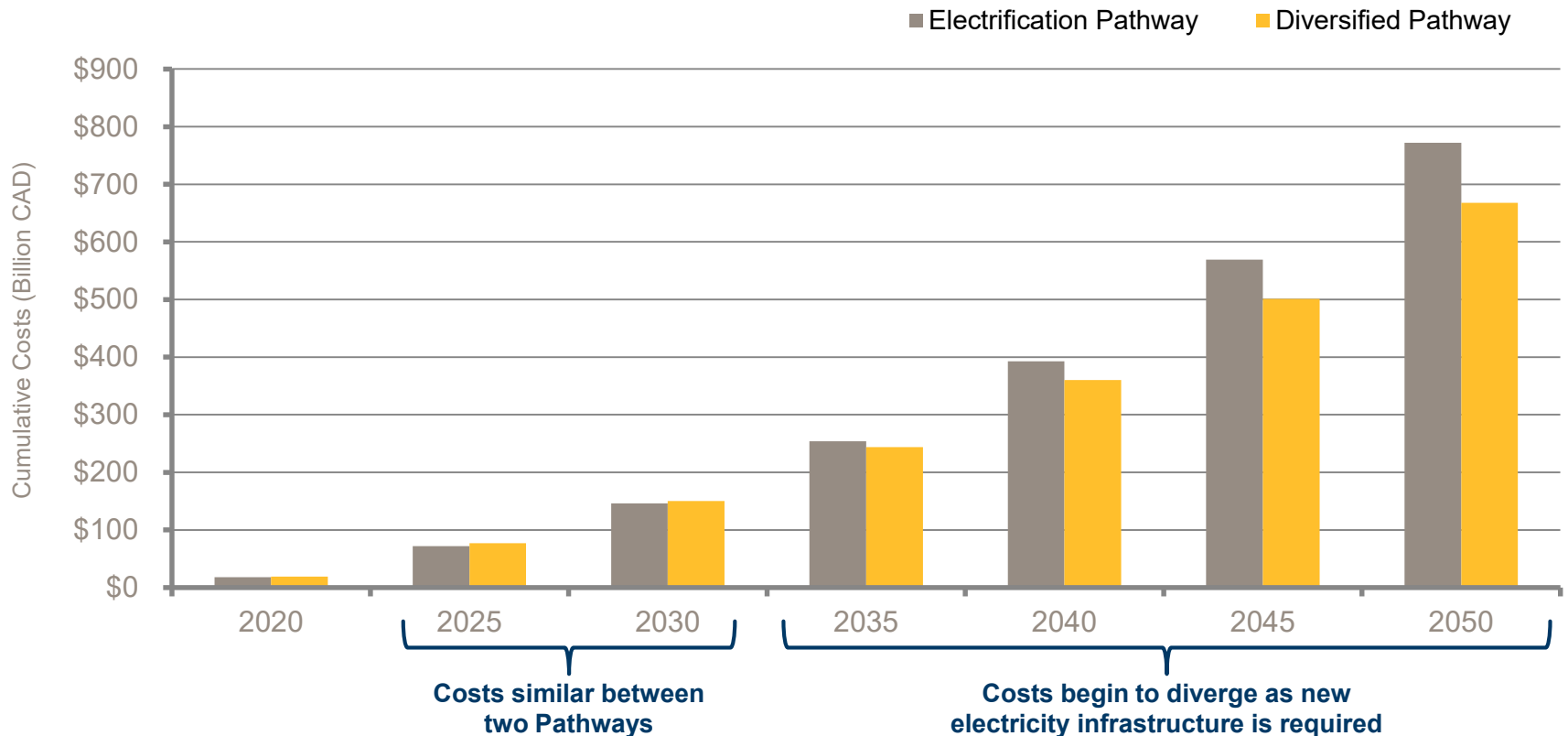
Provincial Daily Peak Demand – Dec 27, 2021



Peak gas demand in equivalent MW using standard unit conversion of 1 MW = 3.6 GJ/hr

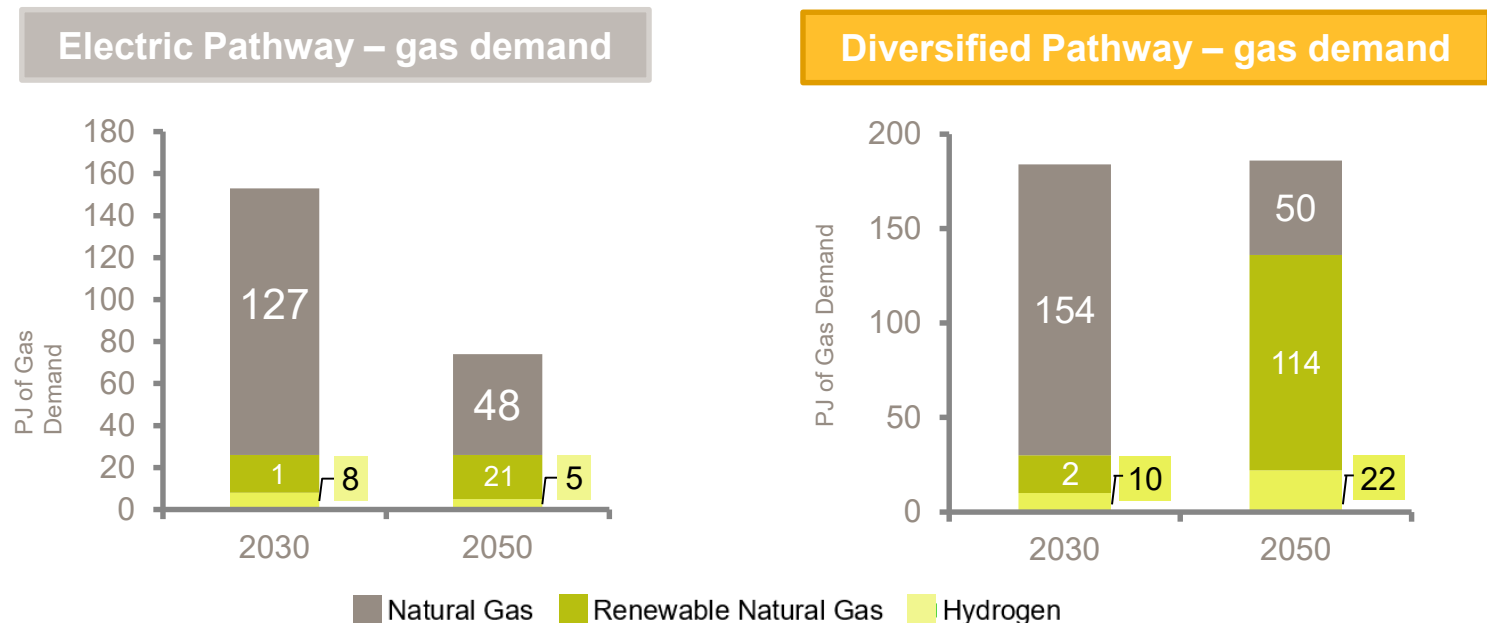
Adding up all the costs

By 2050, the cost to achieve the Electrification Pathway is expected to be at least **\$100B** higher than the Diversified Pathway.



Key opportunity: Expanding renewable and low carbon gas supply

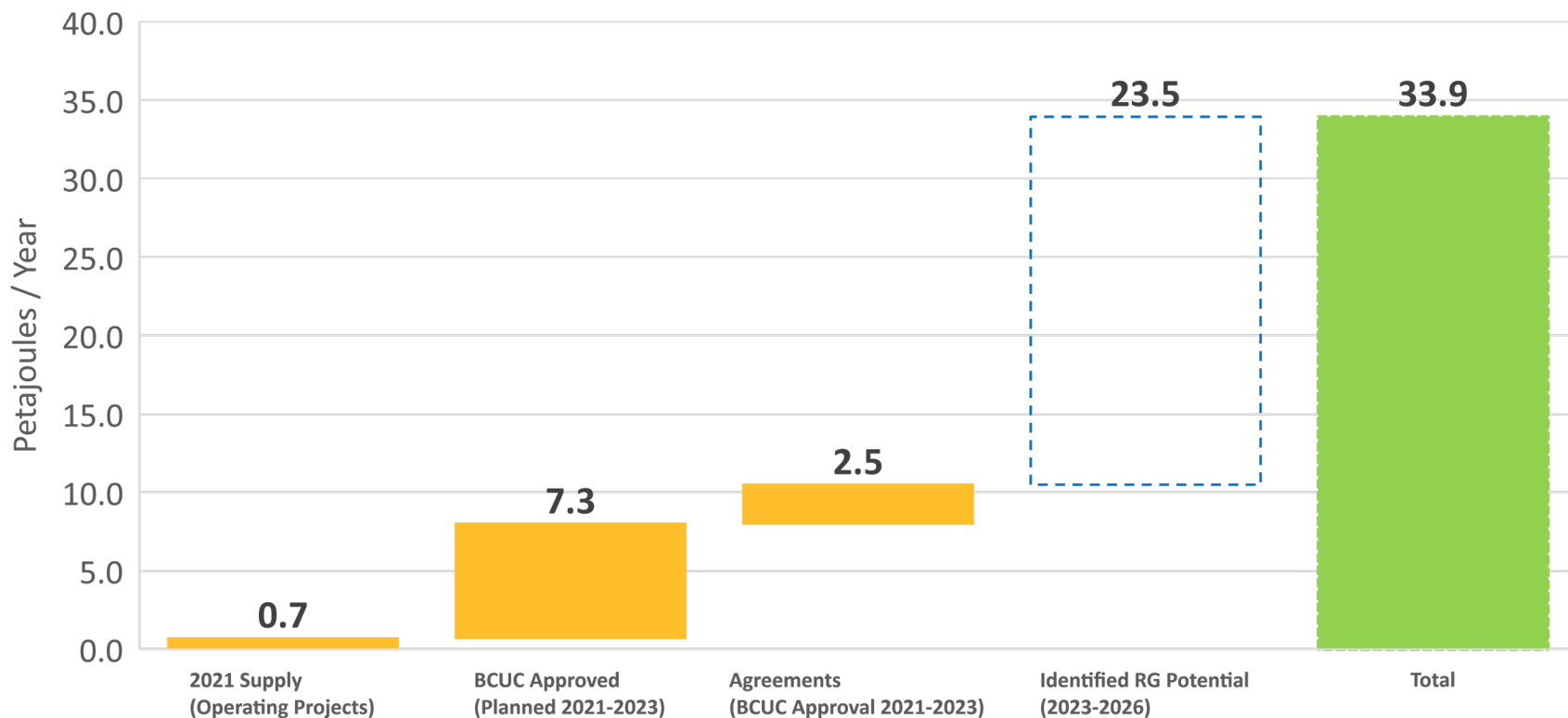
Large potential for renewable and low carbon gas over the coming decades. Partnerships between government, industry, Indigenous communities and stakeholders will be key.



Renewable gas short-term supply outlook

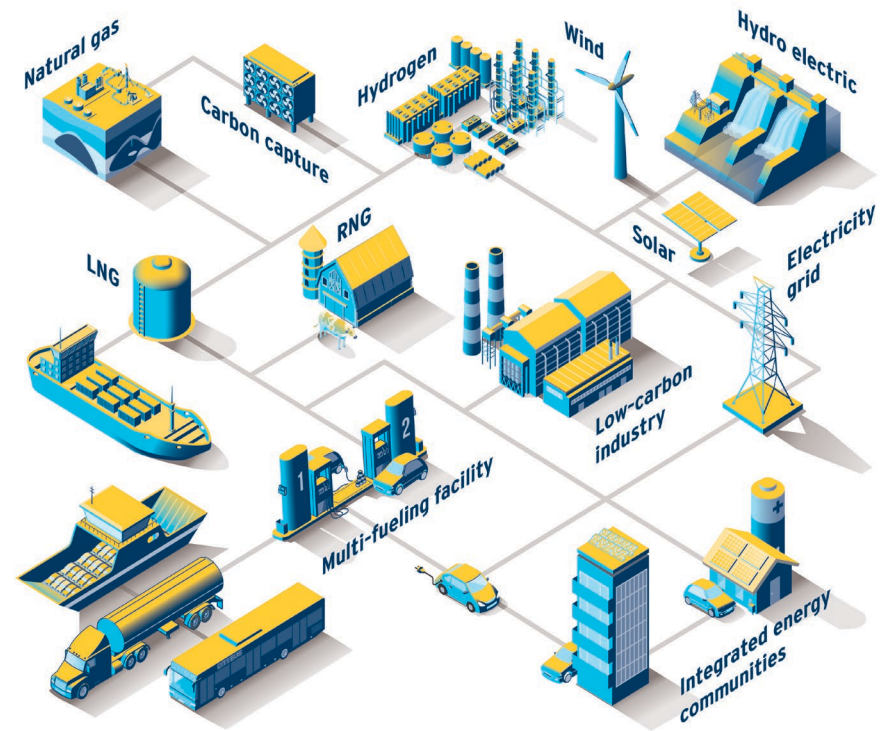
Forecast updated as of October, 2021

Renewable Gas 5 Year Supply Outlook Q4 2021



Summary: FEI's diversified approach to climate action

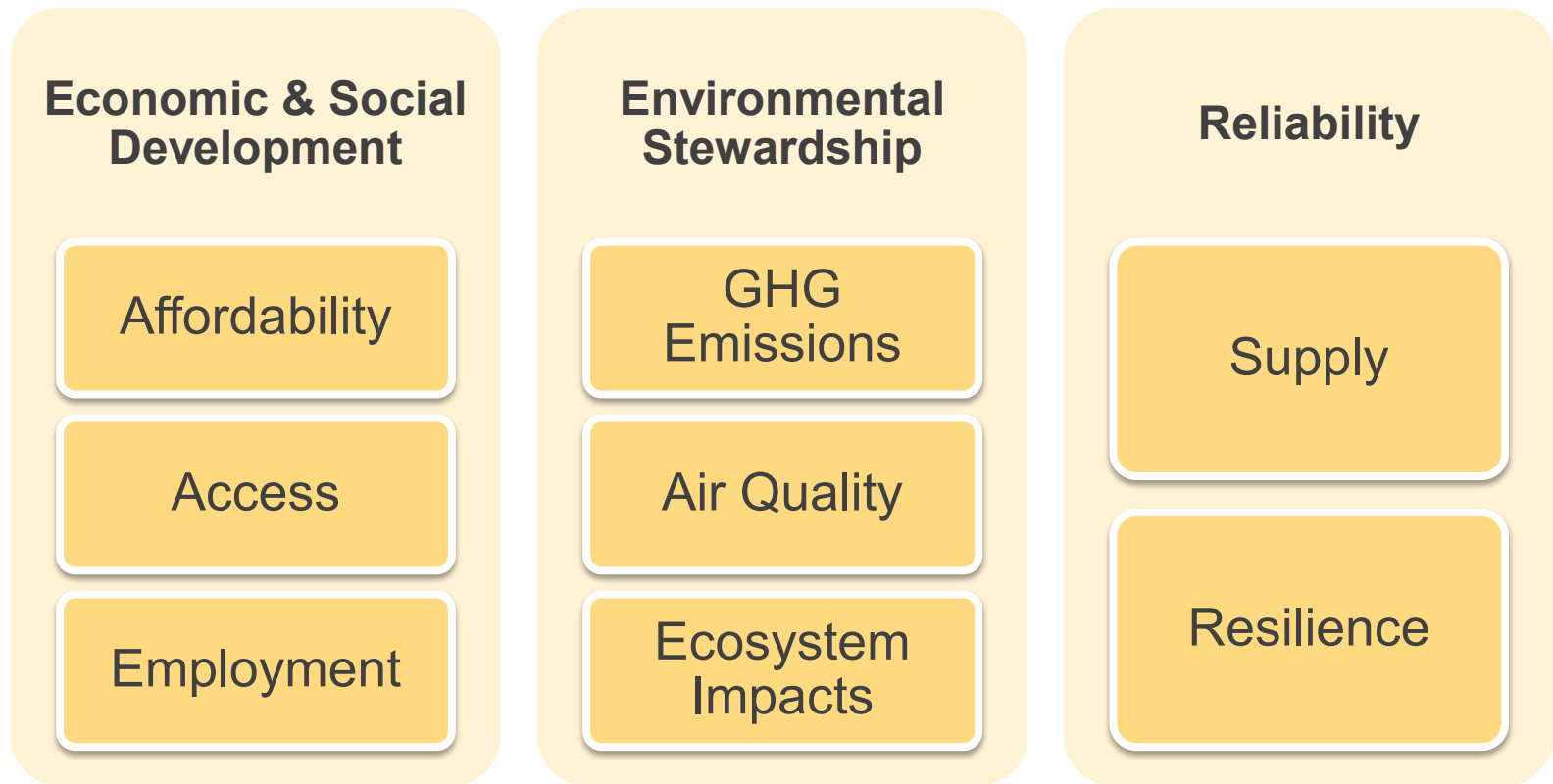
- Achieves the Province's **80%** reduction target
- Reduces **de-carbonization costs** by **\$100B**
- Considers **peak day demand** and **related infrastructure**
- Provides **resiliency** and **reliability**
- It's not either/or, **it's both/and**



FEI's Clean Growth Innovation Fund

- Investing **\$4.9 million per year**, over the next four years (until 2024), in innovative emissions-reducing projects
 - Renewable natural gas
 - Carbon and methane capture technologies
 - Energy efficiency
- Organizations can **apply for project funding**, with applications being reviewed based on:
 - the amount of co-funding secured from the applicant and/or third parties
 - estimated emissions that will be reduced in BC
 - estimated cost benefit for our customers
 - relevant experience of the project team

Discussion: How does the energy landscape in BC impact you? What are the challenges and opportunities you face?



Break



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Indigenous Energy Efficiency Incentive Programs (Natural Gas)

Conservation & Energy Management

Prepared by Diane Roper

January 13, 2022

Energy Conservation Assistance Program (ECAP)

Basic ECAP	Advanced ECAP
<ul style="list-style-type: none">▪ Free home energy assessment to look at building efficiency and identify areas for improvement▪ Free, professionally installed energy-saving products such as efficient showerheads and draft protection	<ul style="list-style-type: none">▪ Some homes may qualify for insulation and/or a high-efficiency gas furnace

The energy evaluator provides advice and tips for how to improve the home's efficiency and comfort

Note: Offered in collaboration with BC Hydro

Indigenous Communities Conservation Program (ICCP)

Category	Retrofit/Upgrade	Rebate (max/home)
Health & Safety	Activities to enable renovations such as drywall/soffit repair, remediation of damage due to mould/moisture, asbestos, radon or pests	\$1000
Building Envelope	Insulation and draft proofing (attic, basement/crawlspace, wall cavity, wall sheathing, other) Windows and doors (\$100 or \$200 each)	Up to \$5500 \$2000/\$4000
Ventilation	Bathroom ducts and installation	\$1200
Space Heating	High efficiency natural gas furnace, connected thermostat	\$2000/\$3000
Water Heating	Natural gas high efficiency storage, condensing tankless or condensing storage water heaters	\$500/\$2500
Appliance Maintenance	Funding for the annual servicing and maintenance of gas equipment	Up to \$250

Indigenous Communities New Home Program (ICNHP)

Option A (Step Code 2-5)	Plus Energy Advisor Support Incentives*	Plus Qualifying Appliance Rebates*
Step code 2 (\$4,000)	Energy Advisors receive \$400 + First Nations receive \$1600 = \$2000	Gas dryer (\$150) Thermostat (\$150) Gas fireplace (\$650) Drain water heat recovery (\$350)
Step code 3 (\$5,000)		
Step code 4 (\$8,000)		
Step code 5 (\$13,000)		
Or Option B (BC Building Code or Step 1)		
Water heater rebates:**		
Up to \$1300		

* EA support incentives and appliance rebates can be stacked with option A or B incentives. Options A and B cannot be combined.

** One water heater rebate per home

Social Housing Retrofit Support Program (SHRSP)

For Indigenous housing societies
multi-unit social housing

Includes:

- **energy study** funding
- **implementation support** funding
- **incentives** for a variety of high-efficiency natural gas and electric energy conservation **upgrades**



Thank you



For further information, please contact:

FortisBC Conservation & Energy Management

conservationassistance@fortisbc.com

1-866-884-8833 (option 4)

Find FortisBC at:

fortisbc.com

talkingenergy.ca

604-576-7000

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2022 Long Term Gas Resource Plan Overview



Creating future scenarios



Demand: variables that impact the annual load that FEI needs to meet.

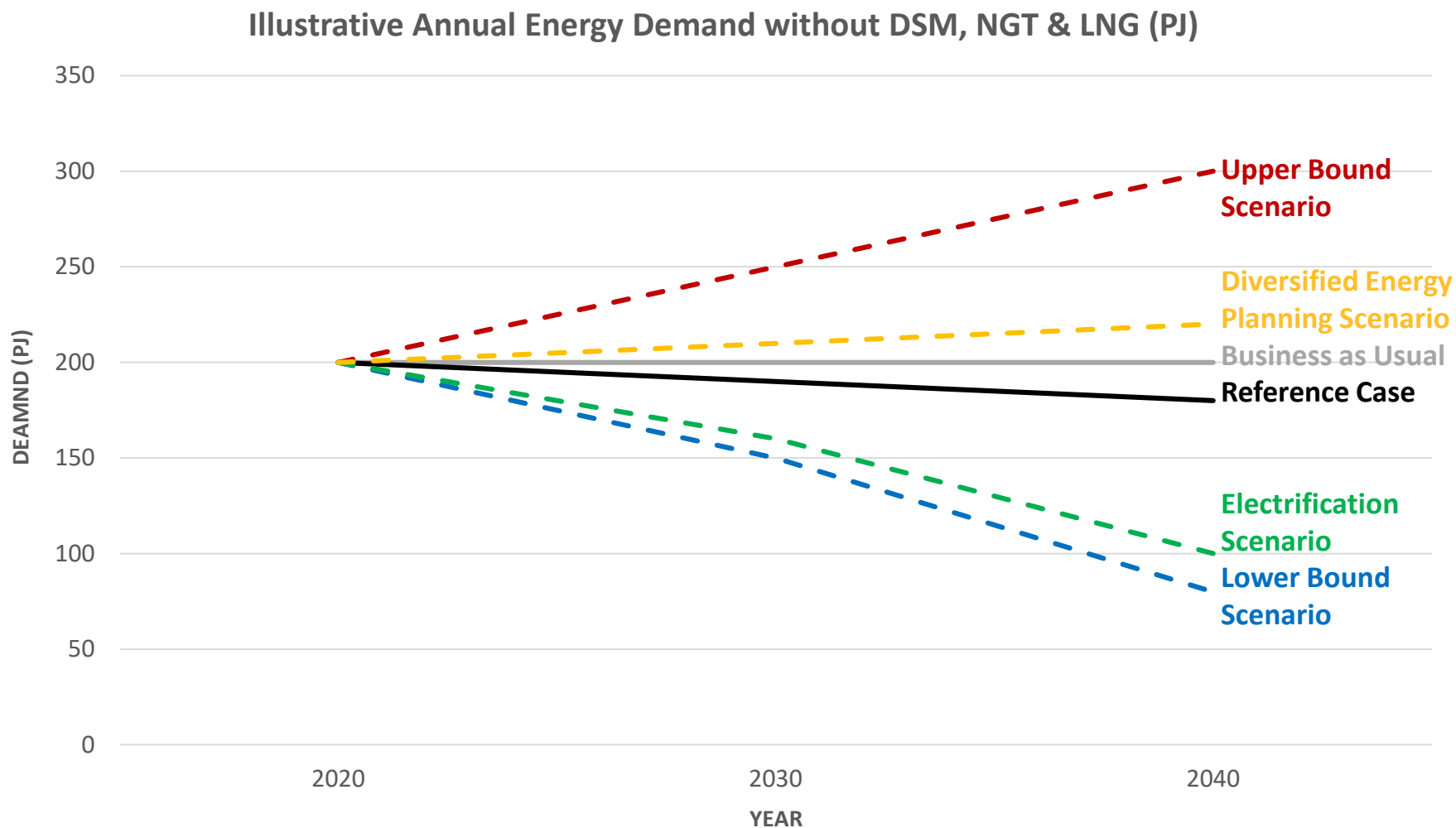


Supply & GHG Mitigation: variables that impact the supply mix to meet demand while reducing GHG emissions relative to meeting demand with traditional natural gas only.



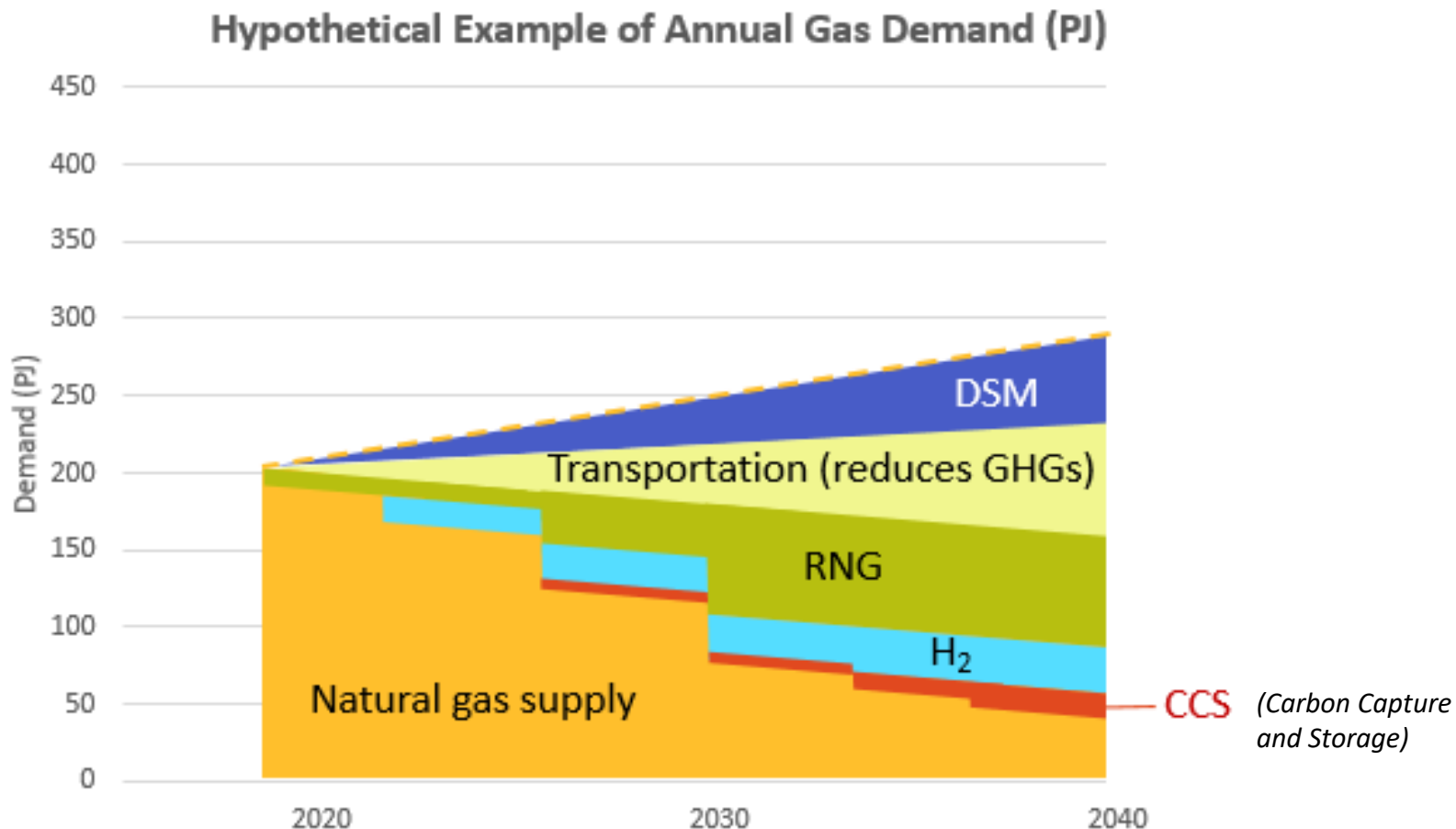
Transportation: demand for compressed natural gas (CNG) and liquefied natural gas (LNG) in the natural gas for transportation sector. Demand for these fuels impact FEI's system and GHG emissions as CNG and LNG displace fuels with higher carbon intensities.

Demand forecast taxonomy

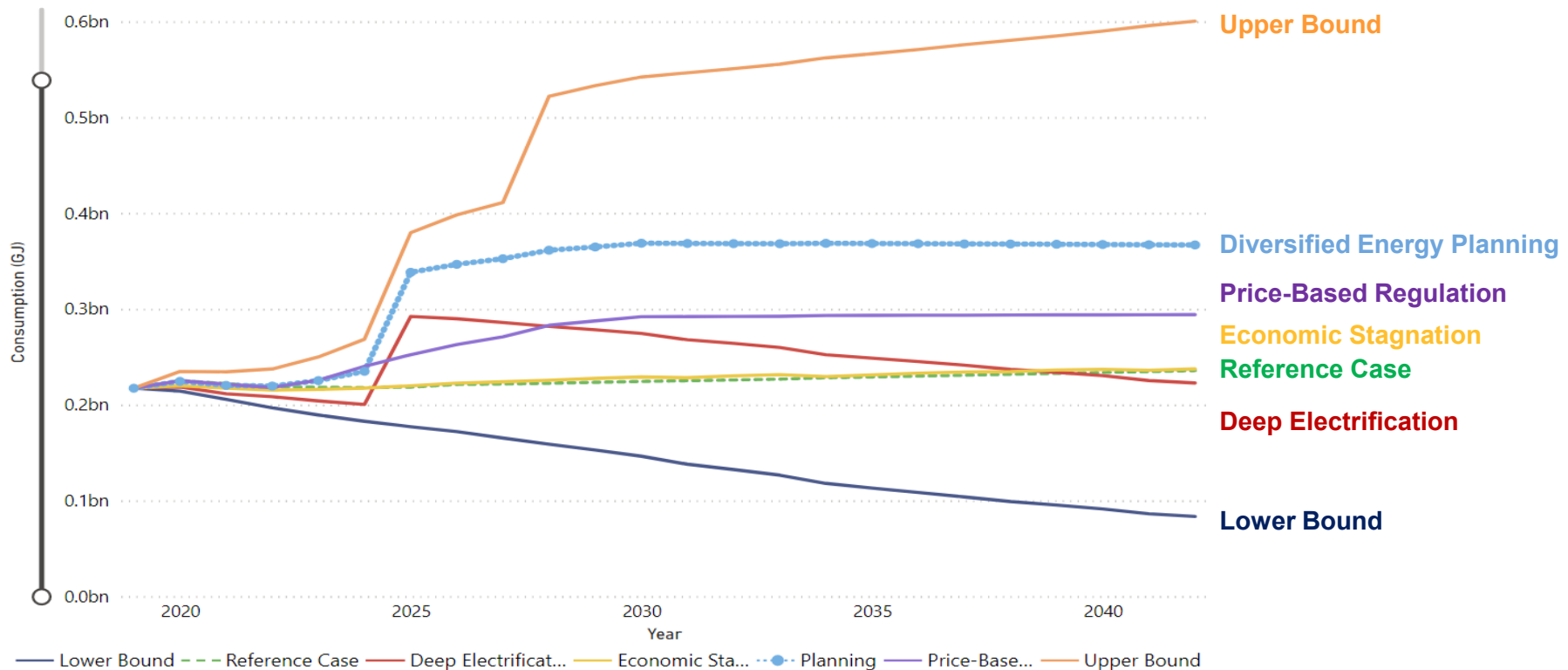


Demand and supply balance

Key to meeting GHG targets



Scenario comparison of forecasted demand (PJ)



Energy Efficiency (Demand-side Management)

DSM potential for each scenario

Sensitivity Analysis: High, base and low incentive spending

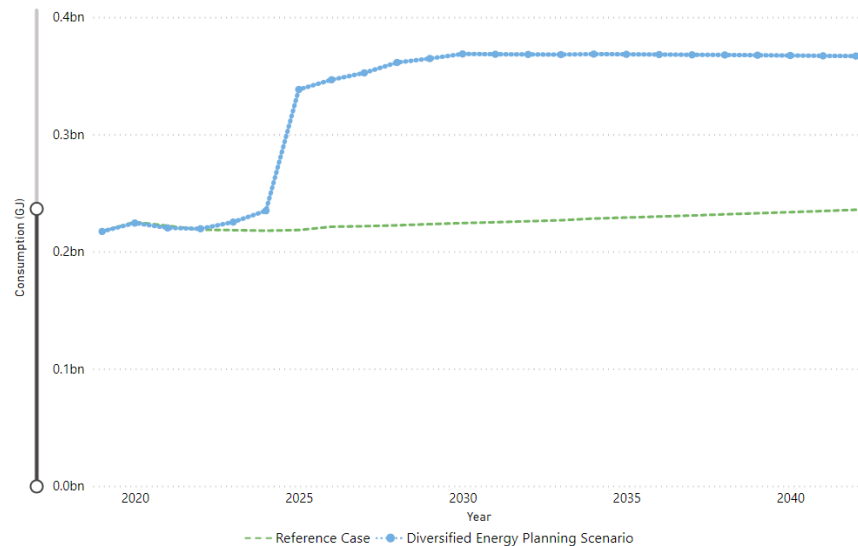
Interaction with renewable/low carbon supply options



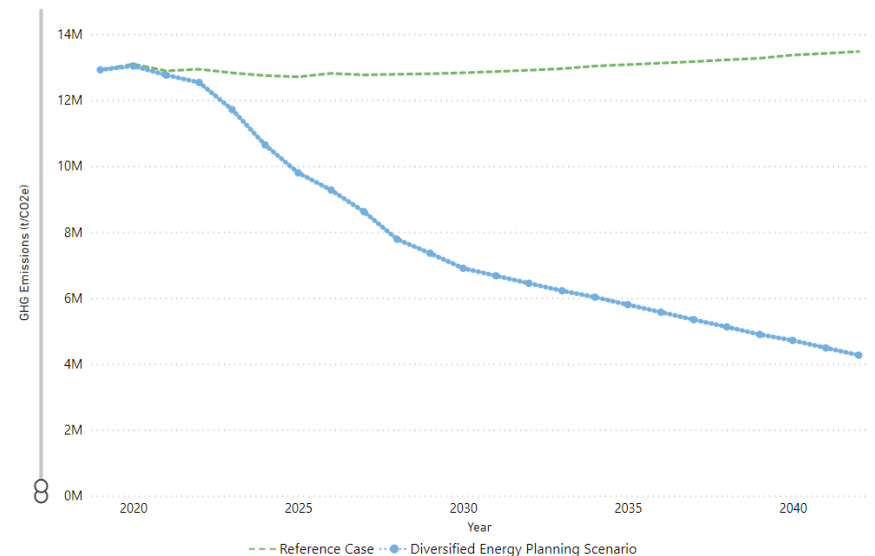
Diversified Energy Planning Scenario - preliminary

Although demand increases, GHG emissions decline

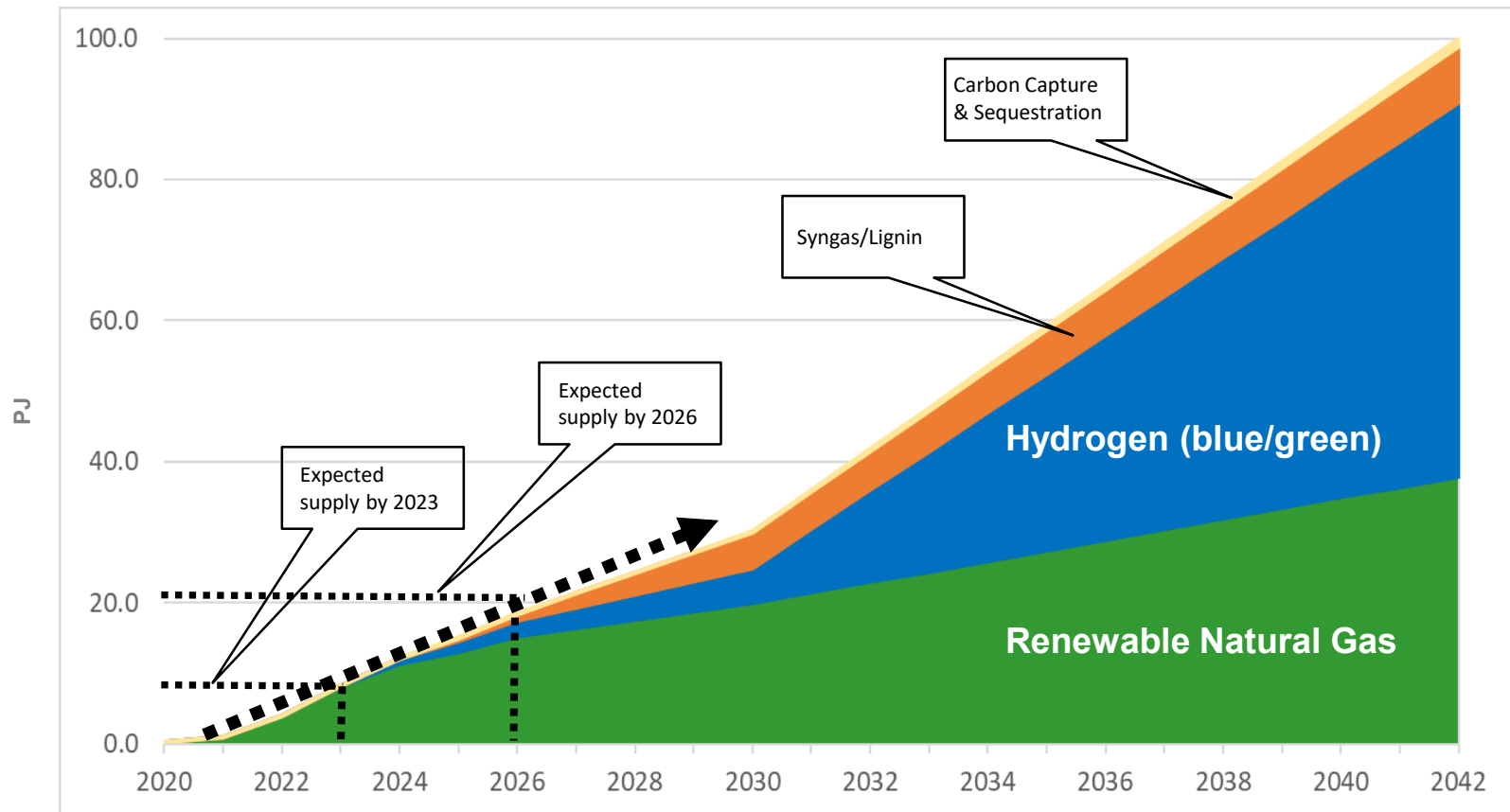
Demand (GJ)



GHG Emissions (t/CO₂e)

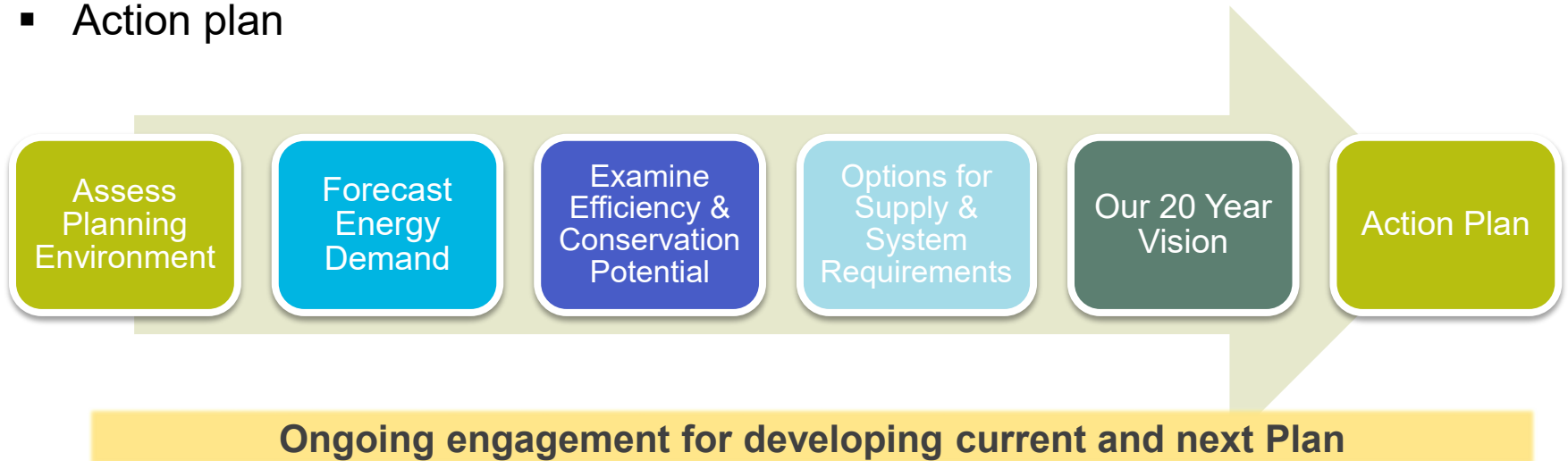


Renewable and Low Carbon Gas Supply Outlook (Long-Term, Preliminary)

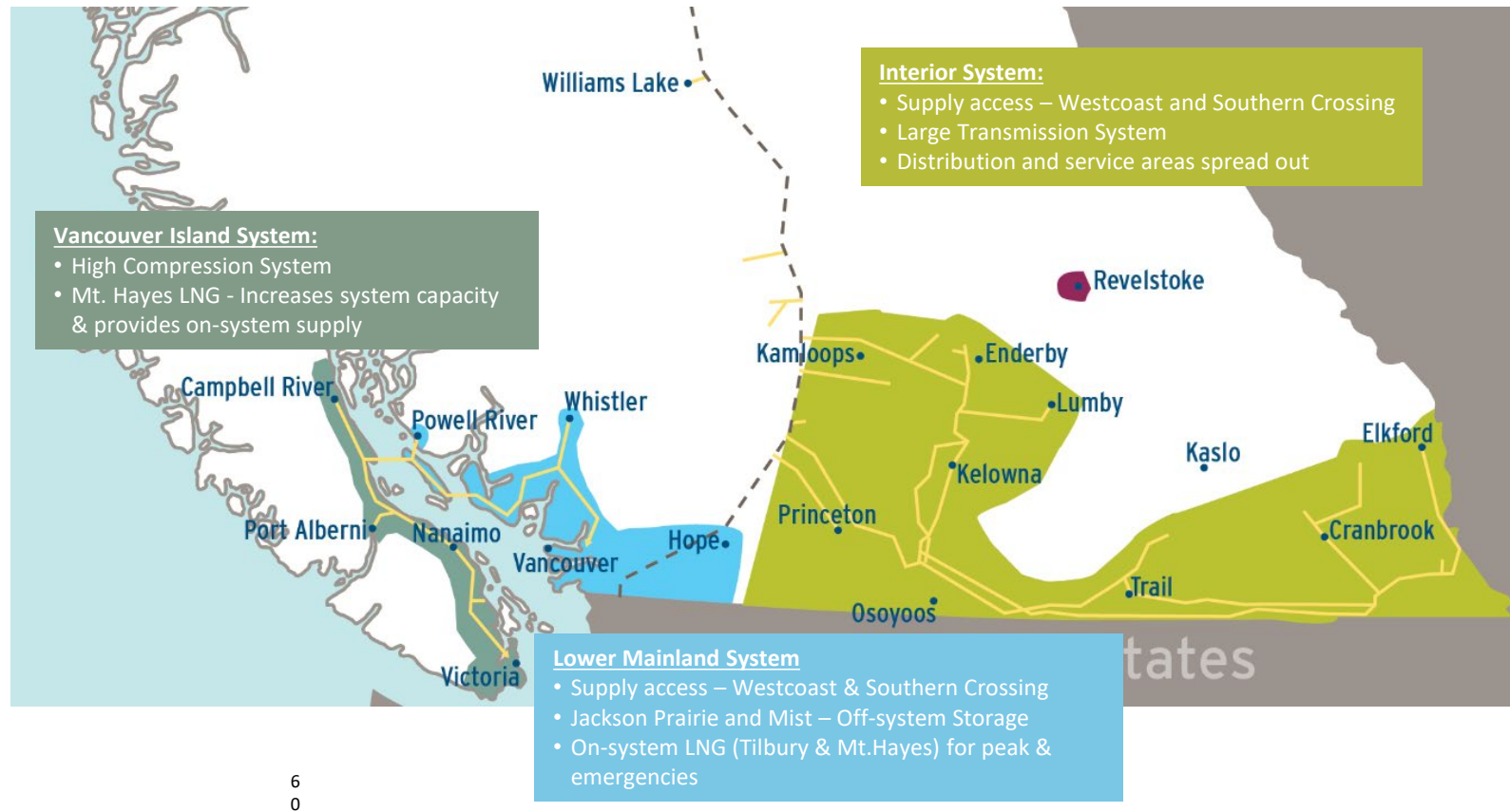


Ongoing resource planning work

- Demand-side management
- Supply considerations
- System considerations and infrastructure projects
- Rate implications and ongoing analysis of alternative energy futures
- Addressing transformative change
- Action plan

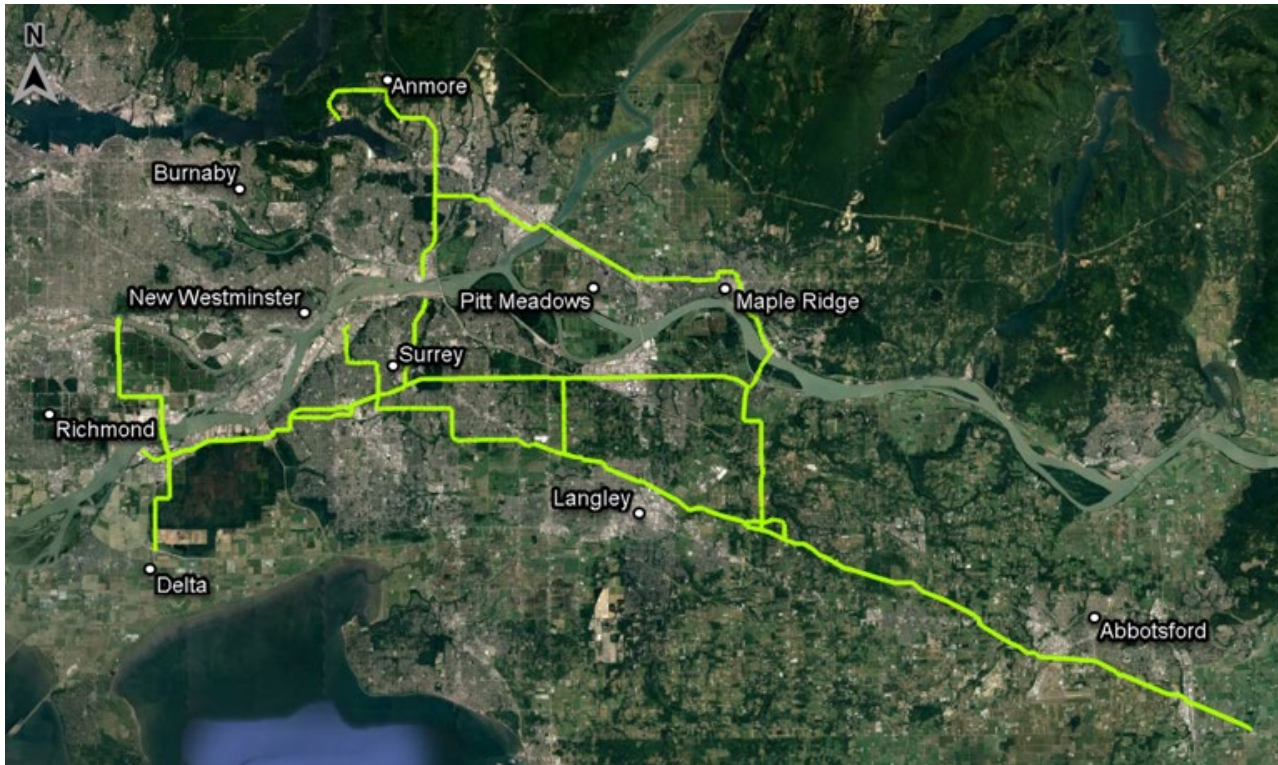


FEI's Service Area Transmission Infrastructure



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Coastal Transmission System



Gas Supply and System Planning

Energy Supply and Regional Infrastructure

- Traditional supplies
- Integrating renewable / low carbon supply
- Supply resilience

Meeting Peak Demand

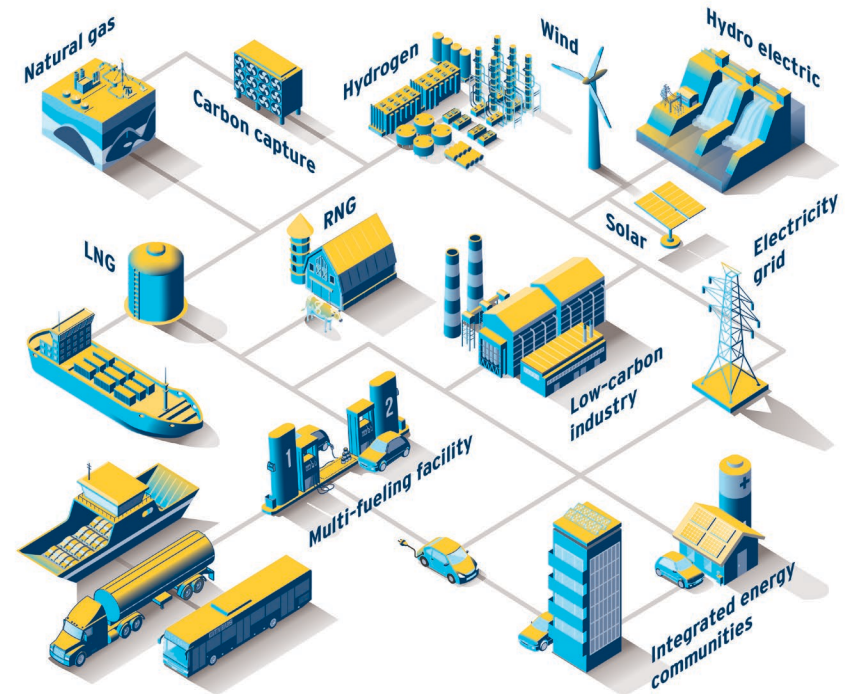
- Peak demand forecast
- System capacity and resilience
- Impact of renewable / low carbon supply

Transitioning to Renewable and Low Carbon Gas

- On-system and off-system supply
- Changing mix of natural gas, renewable gas, hydrogen and other options over time

20-Year Vision

- Customer energy needs and services
- Energy efficiency
- Infrastructure
- Rate impacts and affordability
- Carbon emission reductions
- Sustainability
- Partnerships



Discussion: How does what we've discussed today influence your thinking on energy needs and priorities?

Is there anything else you'd like us to consider as we finalize the demand scenarios and plan for meeting future energy needs?

Cost

**Economic
Growth**

**Energy
Efficiency**

Environment

Reliability

**Accessibility
& Safety**

Ongoing and evolving engagement

How would you like to be engaged in:

- **resource planning** moving forward
- the implementation of **FEI's Diversified Pathway** as we transition to a low carbon future
- **energy efficiency** programs
- other **FEI initiatives**

Wrap-up and next steps

- Thank you for your input and feedback today, we appreciate it
- We will be sharing the meeting notes for your review
- Additional engagement sessions will take place throughout the year(s)
- Feedback for the resource plans can be addressed to irp@fortisbc.com
- Any general questions or concerns can be addressed to Breannen.Dick@fortisbc.com or Samantha.Singbeil@fortisbc.com

Filing Date: FortisBC Long Term Gas Resource Plan (March 31, 2022)

Thank you



For further information, please contact:

Resource Planning Questions & Feedback
irp@fortisbc.com

General Questions & Feedback
getinvolved@fortisbc.com

Indigenous Relations – Lower Mainland & Fraser Valley

Breannen Dick Breannen.dick@fortisbc.com

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fortisbc.com
talkingenergy.ca
604-576-7000

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