

# FEI Annual Review of 2024 Delivery Rates

Workshop

October 23, 2023



# Agenda

Topic	Presenter(s)
Approvals Sought, Generic Cost of Capital (GCOC) Stage 1 Decision and Evidentiary Update	<b>Sarah Walsh</b> <i>Director, Regulatory Affairs</i>
Revenue Requirements & Rates	<b>Anthony Ho</b> <i>Manager, Rates and Revenue</i>
Renewable Gas Development	<b>John Quinn</b> <i>Senior Manager, Renewable Gas Supply</i>
Clean Growth Innovation Fund	<b>Michael Leyland</b> <i>Manager, Innovative Initiatives</i>
Service Quality Indicators (SQIs)	<b>James Wong</b> <i>Director, Budgeting &amp; Strategic Initiatives</i> <b>Brooklyne Maligaspe</b> <i>Manager, Customer Experience &amp; Business Performance</i>
Open Question Period	All

# Approvals Sought

- **Permanent 2024 delivery rate increase of 8.00%**
- **Approval to record the remaining 2024 revenue deficiency in the 2023 Revenue Deficiency deferral account**
- **A five-year amortization period for the 2023 Revenue Deficiency deferral account, commencing January 1, 2025**
- Creation of four new rate base deferral accounts
- A one-year amortization period for the existing Transportation Service Report deferral account
- BVA, RSAM and Fort Nelson Residential Customer Common Rate Phase-in Rate Riders
- 2024 Core Market Administration Expense (CMAE) budget of \$6.050 million, and 70%/30% allocation of costs

# GCOC Stage 1 Decision and Compliance Filing

- Key Determinations in GCOC Stage 1 Decision:
  - ❑ Deemed equity component of 45.0%
  - ❑ Allowed Return on Equity (ROE) of 9.65%
  - ❑ Changes to deemed equity and allowed ROE effective January 1, 2023
- GCOC Compliance Filing Approvals:
  - ❑ Approved to make permanent the existing interim 2023 delivery rate increase of 7.69%, effective January 1, 2023
  - ❑ Approved to record the 2023 incremental revenue deficiency of \$63.994 million in a new deferral account – 2023 Revenue Deficiency deferral account. Disposition of the deferral account to be reviewed in 2024 Annual Review

# Evidentiary Update

- Updated 2024 delivery rate increase of 8.00%.

	Revenue Deficiency / (Surplus) \$ millions	Delivery Rate Impact (%)
<b>July 28, 2023 Filing</b>	<b>\$ 47.554</b>	<b>4.50%</b>
2023 Projected Property Tax Correction (BCUC IR1 14.1)	3.731	0.35%
Update AWE-BC to I-Factor Calculation <sup>(1)</sup>	-	0.00%
Inclusion of 2023 Revenue Deficiency Deferral Account <sup>(2)</sup>	-	0.00%
2024 Impact related to GCOC (G-236-23)	52.966	5.01%
Proposed Deferral of 2024 Deficiency	(19.708)	-1.86%
<b>Evidentiary Update</b>	<b>\$ 84.543</b>	<b>8.00%</b>

Source: Table 1 from Evidentiary Update, Exhibit B-13

# Options Considered to Address GCOC Impact on 2024 Delivery Rates

- Include full 2023 and 2024 impact in 2024 rates
  - 2024 delivery rate increase = 16.12%
- Include full 2024 impact in 2024 rates
  - 2024 delivery rate increase = 9.87%
- Partial incorporation of 2024 impact
  - Proposed 2024 delivery rate increase = 8.00% (also considered 6.00%)
- Defer entire 2023 and 2024 impact
  - 2024 delivery rate increase = 4.85%

# Proposed 5-Year Amortization Period for 2023 Revenue Deficiency Deferral Account

- FEI considered one to five year amortization periods
- Factors considered in selecting amortization period:
  - ❑ Rate impact (rate smoothing)
  - ❑ Timely recovery of costs

Incremental 2025 Delivery Rate Impact (%)	Amortization Period				
	1 Year	2 Years	3 Years	4 Years	5 Years
2024 Delivery Rate Increase @ 6%	10.6%	5.3%	3.5%	2.7%	2.1%
2024 Delivery Rate Increase @ 8%	8.6%	4.3%	2.9%	2.1%	1.7%
2024 Delivery Rate Increase @ 9.87%	6.6%	3.3%	2.2%	1.7%	1.3%

Source: Table 9 from Evidentiary Update, Exhibit B-13 (For 2024 Delivery Rate increase @ 8%)

Questions?





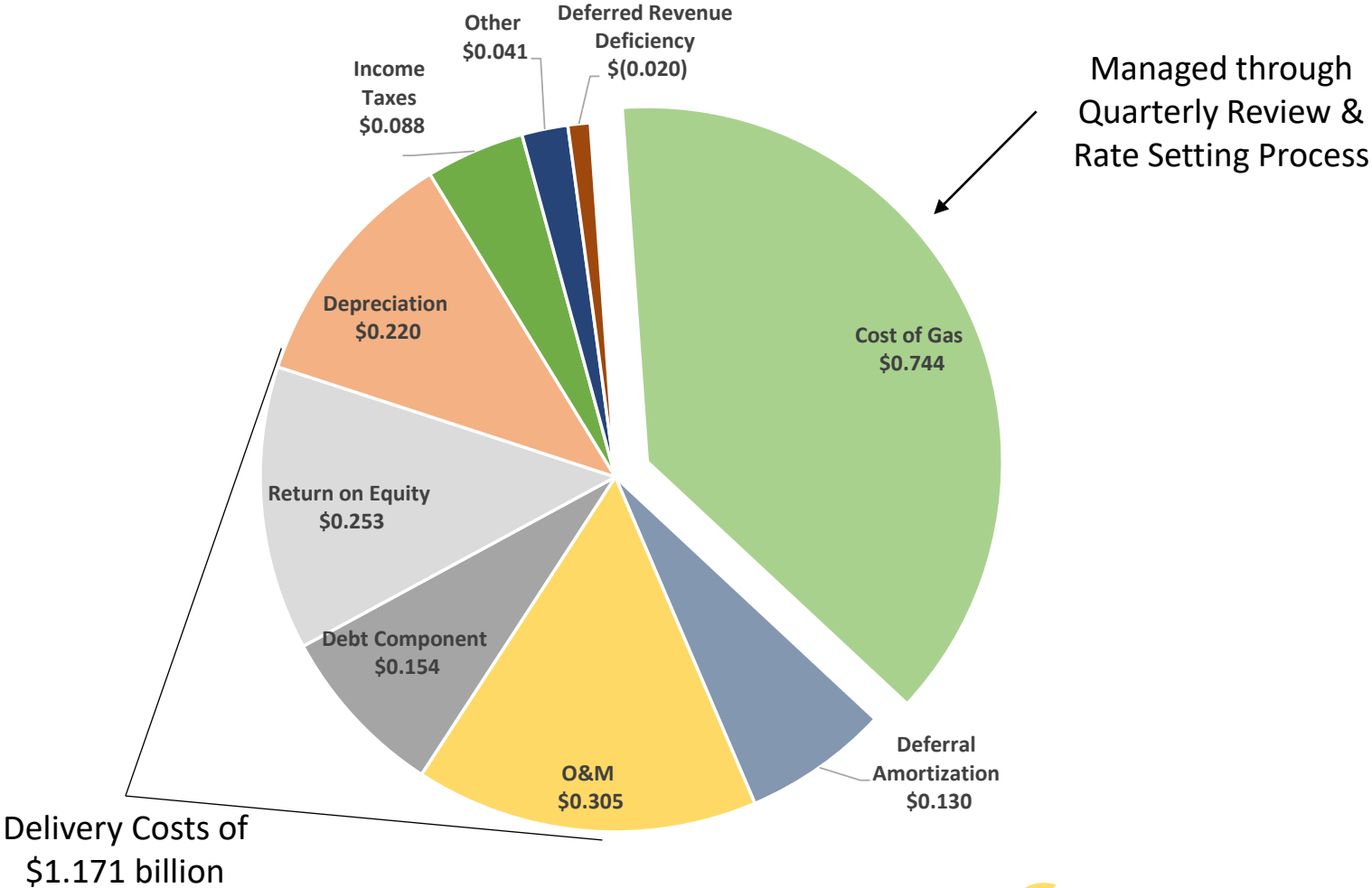
# Revenue Requirements & Rates

*Anthony Ho, Manager, Rates and Revenue*



# 2024 Revenue Requirement Summary

Total Revenue Requirement of \$1.914 billion (Evidentiary Update)



# Summary of 2024 Deficiency

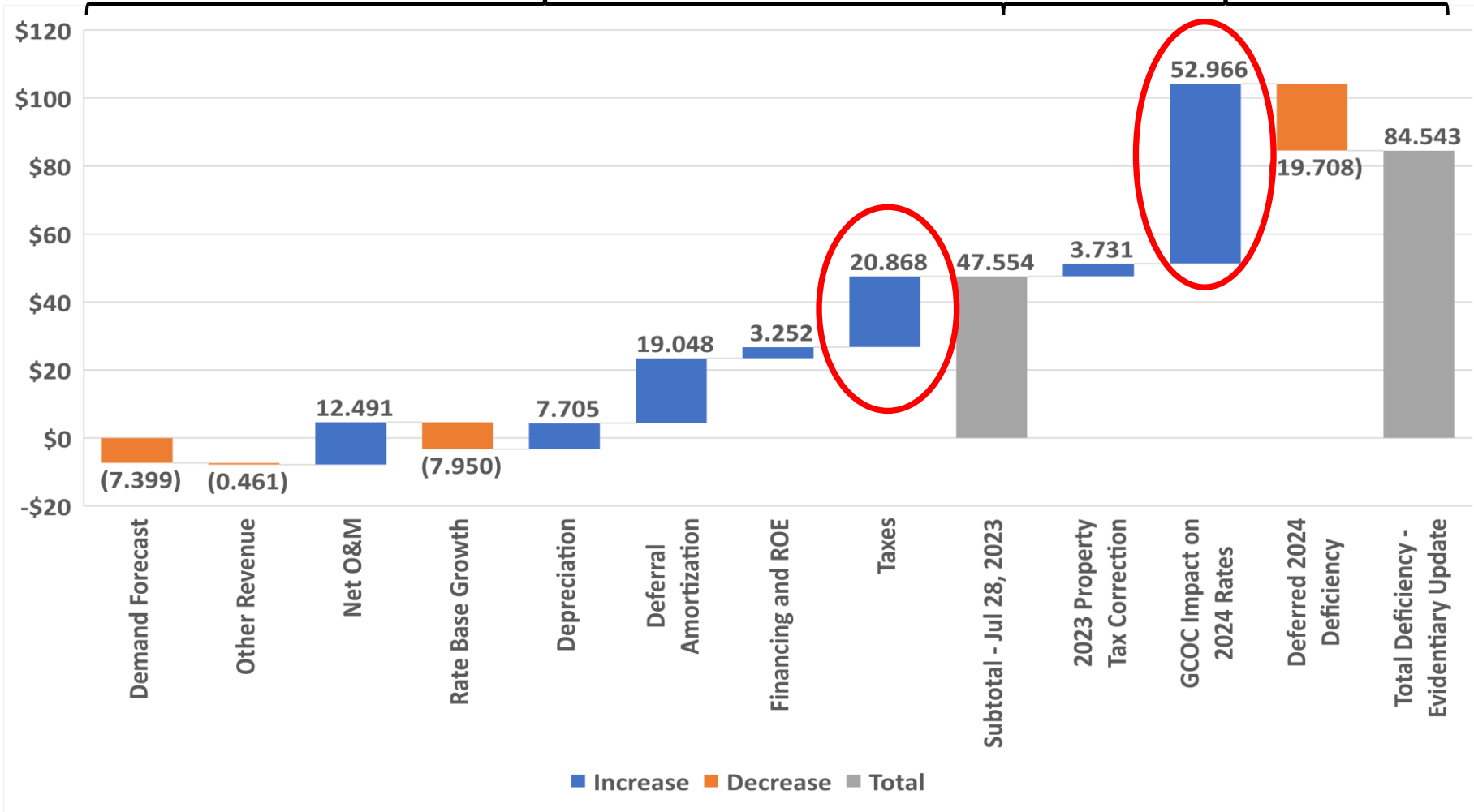
- Deficiency of \$84.543 million (Evidentiary Update):
  - Total 2024 revenue requirement is \$1.914 billion, less
  - Revenue at existing 2023 approved rates of \$1.829 billion
- Major drivers of deficiency:
  - GCOC: 5.01%
  - Taxes (Income Tax before GCOC: 1.57% & Property Tax: 0.40%)

Components	\$ millions	%
Demand Forecast	(7.399)	(0.70)%
Other Revenue	(0.461)	(0.04)%
Net O&M	12.491	1.18 %
Rate Base Growth	(7.950)	(0.75)%
Depreciation	7.705	0.73 %
Deferral Amortization	19.048	1.80 %
Financing and ROE	3.252	0.31 %
Income Tax and Property Tax	20.868	1.97 %
<b>Subtotal - Jul 28, 2023</b>	<b>47.554</b>	<b>4.50 %</b>
2023 Projected Property Tax Correction (BCUC IR1 14.1)	3.731	0.35 %
GCOC Impact on 2024 Rates	52.966	5.01 %
Deferred 2024 Deficiency	(19.708)	(1.86)%
<b>Total Deficiency - Evidentiary Update</b>	<b>84.543</b>	<b>8.00 %</b>

# Summary of 2024 Deficiency

Jul 28 Filing: 4.50%

Evid Update: 8.00%



# Key Deficiency Drivers: GCOC Decision

	2024 Deficiency due to GCOC Decision (\$000s)	Delivery Rate Impact (%)
Deemed Equity and ROE Change (GCOC Decision)	\$ 56,707	5.37%
Debt Financing Rate and Ratio Change	(14,954)	(1.42)%
<b>Subtotal - Return on Capital</b>	<b>\$ 41,753</b>	<b>3.95%</b>
Change in Non-Rate Base Amortization	(7,209)	(0.68)%
Change Income Tax Expense	18,422	1.74 %
<b>Total</b>	<b>\$ 52,966</b>	<b>5.01%</b>
2024 Deferred Deficiency	(19,708)	(1.86)%
<b>Total w/ 2024 Deferred Deficiency</b>	<b>\$ 33,258</b>	<b>3.15%</b>
<b>Change in Non-Rate Base Amortization</b>		
Flow-Through Deferral <sup>(1)</sup>	(7,143)	
Earnings Sharing Account <sup>(2)</sup>	(66)	
<b>Total</b>	<b>\$ (7,209)</b>	
<b>Reconciliation of Change in Income Tax Expense</b>		
Change in Return on Capital	\$ 41,753	
Less: Change in Interest Expense	14,954	
Adjustment to Taxable Income:		
Change in non-Rate Base Amortization	(7,209)	
Change in Debt Issue Costs and Amortization of Debt Issue Expense	309	
<b>Accounting Income After Tax</b>	<b>\$ 49,807</b>	
<b>Income Tax Expense<sup>(3)</sup></b>	<b>\$ 18,422</b>	

- (1) Due to change in Variance between 2023 Projected and 2023 Approved Interest Expense resulting from the GCOC Decision, plus AFUDC Change in 2023 and 2024
- (2) Due to change in AFUDC in 2023 and 2024 resulting from the GCOC Decision
- (3)  $\$49,807 / (1 - 27\%) \times (27\%) = \$18,422$

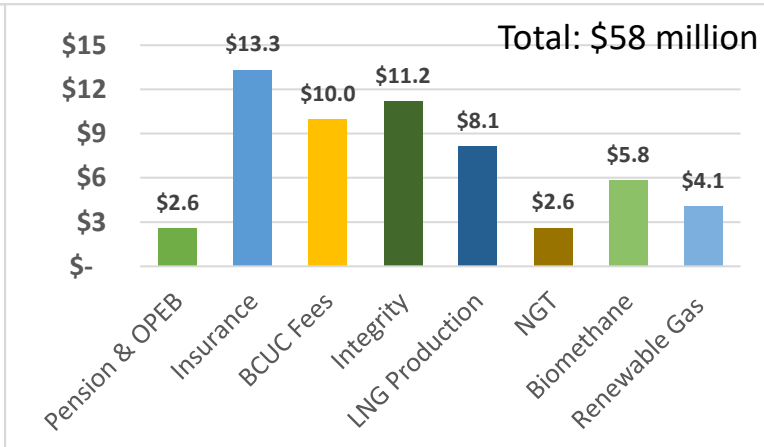
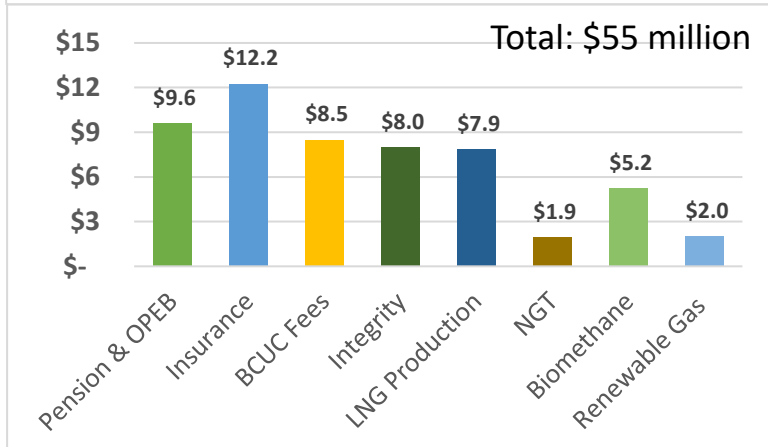
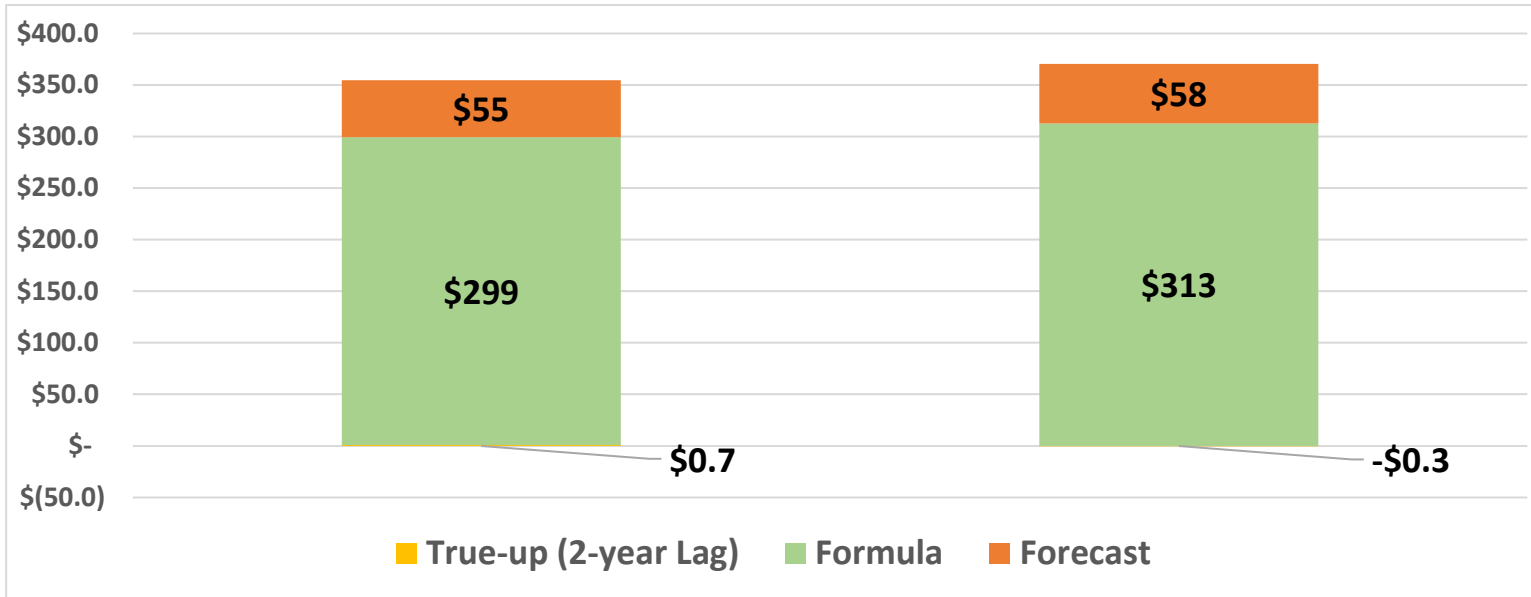
# Key Deficiency Drivers: Income Tax (Excl. GCOC)

- Income Taxes higher by \$16.653 million (or 32.2%) before GCOC Decision
- Accelerated Investment Incentive (AII) is being phased-out starting 2024 and ending in 2028
  - ❑ Allowed FEI to take accelerated CCA income tax deductions
  - ❑ Phase-out provides stepped reductions over the next few years
  - ❑ Lower CCA deductions increases income tax expenses by \$6.022 million (BCUC IR1 15.1)
- Additions to CCA classes have changed
  - ❑ Increased additions to lower CCA rate classes combined with decreased additions to higher rate CCA classes
  - ❑ Change in the mix of CCA rate classes increases income tax expenses by \$6.262 million (BCUC IR1 15.1)

# O&M – 2023 Approved vs. 2024 Forecast

2023 Approved Gross O&M \$355 million  
(\$293 million after capitalized overhead)

2024 Forecast Gross O&M \$370 million  
(\$305 million after capitalized overhead)



Questions?





# Renewable Gas Development

Update on 2023 and 2024 Ongoing and Planned Activities

John Quinn, *Senior Manager Renewable Gas Supply*



# Renewable Gas Development Policy Context



Government policies and regulations regarding climate action continue to progress.

Re-enforcing the need for FEI to prepare for the introduction of alternative low carbon fuels.



The GGRR was amended to include hydrogen, synthesis gas and lignin as low carbon fuels.

Updated CleanBC Roadmap targeting a 47 percent reduction in GHGs in building and industry.



Policy initiatives will expand the resources required to support Renewable Gas Development

FEI continues to progress activities to enable the introduction of these energy options.

# Hydrogen Strategy - 2023/24 Focus on Key Areas

Previous Progress

Ongoing and Planned Activities

## Preliminary Feasibility

Gas System  
Hydrogen Blending  
Feasibility

Key Roadmap Tasks

Hydrogen Supply  
Acquisition

## Gas System Feasibility Study

Hydrogen Blending  
in the Gas System

Hydrogen Used to  
Displace Natural Gas  
in Industrial  
Processes

Inform Strategy,  
Roadmap, and  
Standard

## Roadmap Planning & Execution

Research  
Development, and  
Innovation

System Preparations,  
Training and  
Education

Pilot Demonstration  
and Stakeholder  
Engagement

## RG Commercial Deployment

Evaluate Supply  
Opportunities

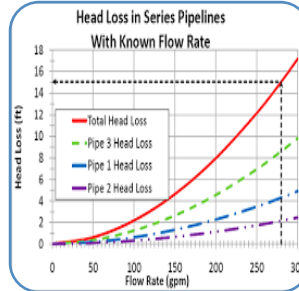
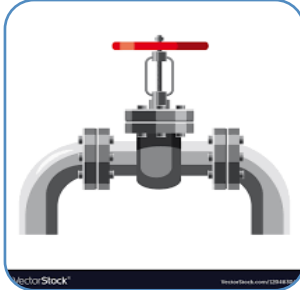
Progress Regulatory  
and Permit  
Approvals

Hydrogen Service

# BC Gas System Hydrogen Study – 2023/24 Activities



## **SAFETY PROCEDURES**



### Overall Safety

Gas System  
Hydrogen  
Considerations  
and Risk  
Assessment

### Component Level Analysis

Pipeline and  
Facilities  
Materials and  
Equipment  
Compatibility

### System Level Analysis

Gas Supply  
and Network  
Performance

### End-Use Analysis

Residential,  
Commercial,  
Industrial  
Applications  
and  
Equipment  
Compatibility

### Hydrogen Standard

Qualify gas  
supply for  
hydrogen  
service and  
set targets.

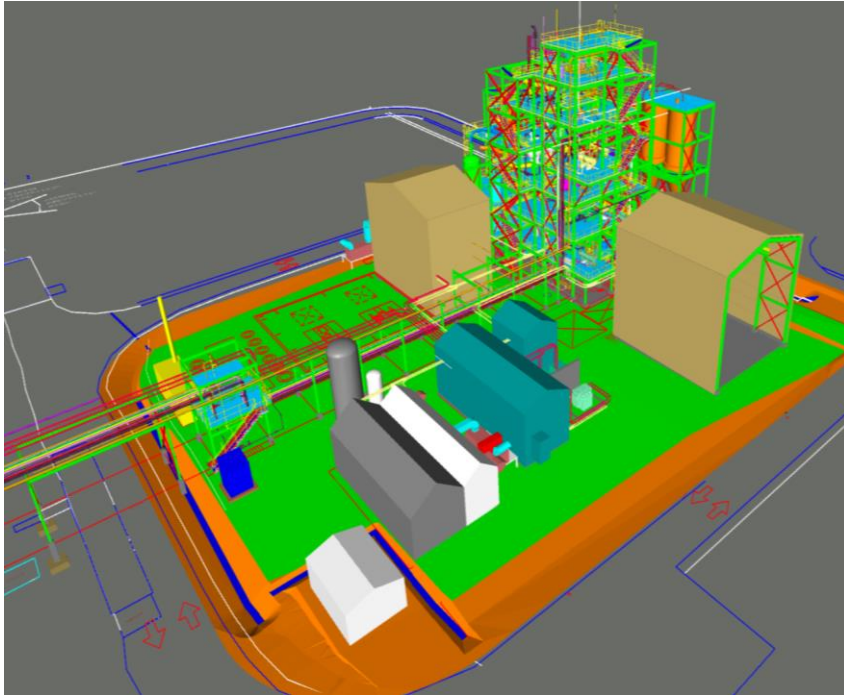
# Utility Hydrogen Planning & Preparation – 2023/24 Activities



**Harmac Pacific - Proposed Plant Layout**

- **Codes and Standards** - CSA Z662 hydrogen.
- **UBC-O H2Lab** – BC’s first innovation and testing center for gas system blending.
- **H2DTEC** – FEI Hydrogen Demonstration, Training, and Education Center.
- **Hy4Home** – Canada’s first joint industry project to test appliances on hydrogen blends.
- **Gas System Hydrogen Blending Pilot** - BC’s first distribution blending demonstration project.
- **Industrial Hydrogen Blending Pilot** – Harmac Pacific, BC’s first industrial demonstration project.

# RG Commercial Deployment – 2023/24 Activities



**2500 TPA BC Commercial Pilot Project – 3D Model View**

- **Lignin Offtake:** commercial development, supply potential circa 0.5 PJ/yr.
- **Hydrogen Offtake:** early-stage evaluation of opportunities in Prince George, Lower Mainland, and Interior service territories, supply potential circa 1 PJ/yr.
- **Green Hydrogen Production:** early-stage due diligence and commercial analysis on opportunities in Lower Mainland and Interior service territories, supply potential circa 6 PJ/yr.
- **Low-Carbon (Turquoise) Hydrogen Production:** exploring options to advance a commercial pilot project in BC, supply potential circa 0.4 PJ/yr.

Questions?



# Clean Growth Innovation Fund (CGIF)

Mike Leyland, *Manager, Innovative Initiatives*





# CGIF Portfolio Approvals and Expenditures

Approved and Actual Expenditures (\$ millions)

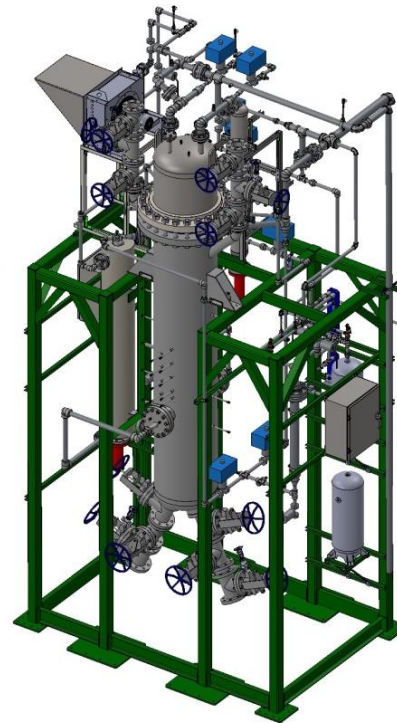
	<b>Actual 2020</b>	<b>Actual 2021</b>	<b>Actual 2022</b>	<b>Projected 2023</b>	<b>Forecast 2024</b>
<b>Portfolio Approvals</b>	\$ 1.500	\$ 2.200	\$ 2.495	\$ 6.198	\$ 8.000
<b>Portfolio Expenditures</b>	\$ 1.022	\$ 1.127	\$ 0.972	\$ 3.827	\$ 5.773

# CGIF Investment Priorities

Application	Sub-Application	Approved Grant
		\$ millions
<b>Production</b>	Renewable Hydrogen	2.237
	Renewable Natural Gas	1.388
	Renewable Syngas	0.370
	<b>Subtotal</b>	<b>3.995</b>
<b>Distribution</b>	Renewable Hydrogen	0.500
	<b>Subtotal</b>	<b>0.500</b>
<b>End-Use</b>	Renewable Hydrogen	0.407
	Hybrid Systems	0.280
	Renewable Natural Gas	0.120
	<b>Subtotal</b>	<b>0.808</b>
<b>Carbon Capture</b>	End-Use	0.345
	Storage	0.600
	<b>Subtotal</b>	<b>0.945</b>
<b>General Low-Carbon</b>	General Initiatives	2.326
	<b>Subtotal</b>	<b>2.326</b>
<b>TOTAL</b>		<b>8.574</b>

# Production - Renewable Natural Gas

- Demonstration Project to validate the scale up of G4 PyroCatalytic Hydrogenation (PCH) Reactor.
- The project will include detailed design, construction, and testing of a PCH reactor (Validation Rig) capable of processing 1 ton of biomass per day.
- Testing of the scaled up demonstration reactor anticipated for Q3 2023.



# Distribution - Hydrogen

- Work with UBC Hydrogen lab
- Subproject 1 – Analytical modelling of injection and transmission of hydrogen enriched natural gas (HENG).
- Testing to help to support potential cost reductions for offtake of hydrogen and injection into FEI's existing system.



# End-Use

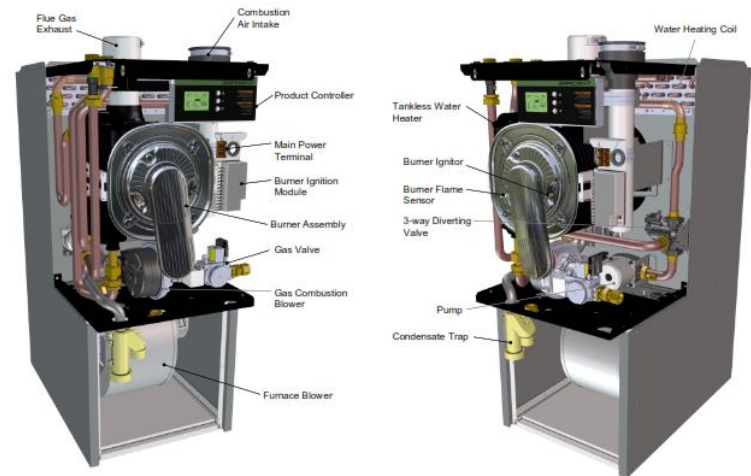
TECHNICAL RESEARCH REPORT  
FOR BC GREENHOUSE GROWERS  
March 31, 2023

OPTIONS FOR GREENHOUSE GAS (GHG) EMISSIONS  
REDUCTION IN THE BC GREENHOUSE INDUSTRY



Consolidated Management Consultants Ltd.  
Quantum Lighting  
SES Consulting  
3/31/2023

Greenhouse Growers Study to Reduce GHG Emissions



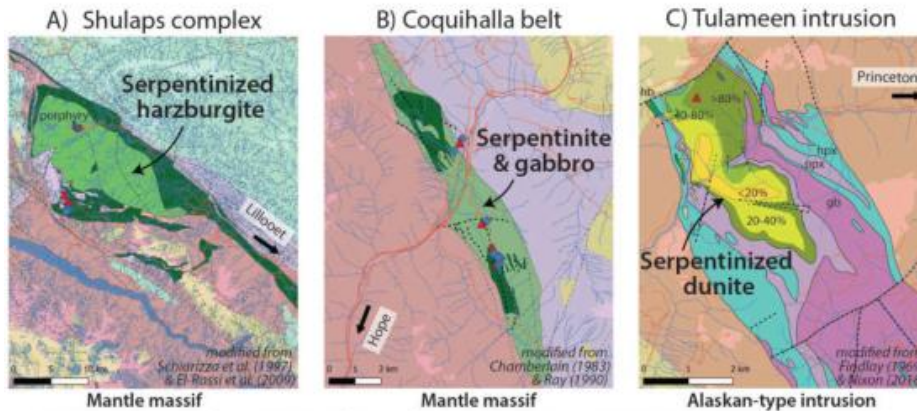
100% H2 Ready Furnace

# Carbon Capture - Storage

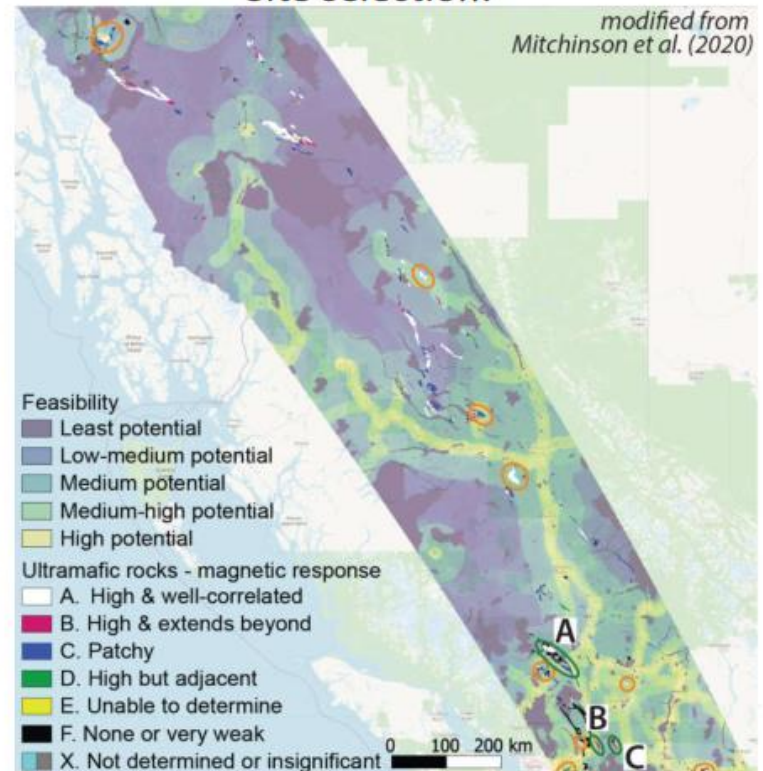
## Thesis: Feasibility of in-situ carbon mineralization in serpentinite via shallow injection, BC, Canada

1. Select a site(s) in BC: Feasibility from geographical and geological factors
2. Baseline data for reactivity and injectivity
3. Reactivity rates and capacities

Site selection:



Storage potential estimates for each site is between 10-2400 megatonnes of CO<sub>2</sub>



# General Low-Carbon



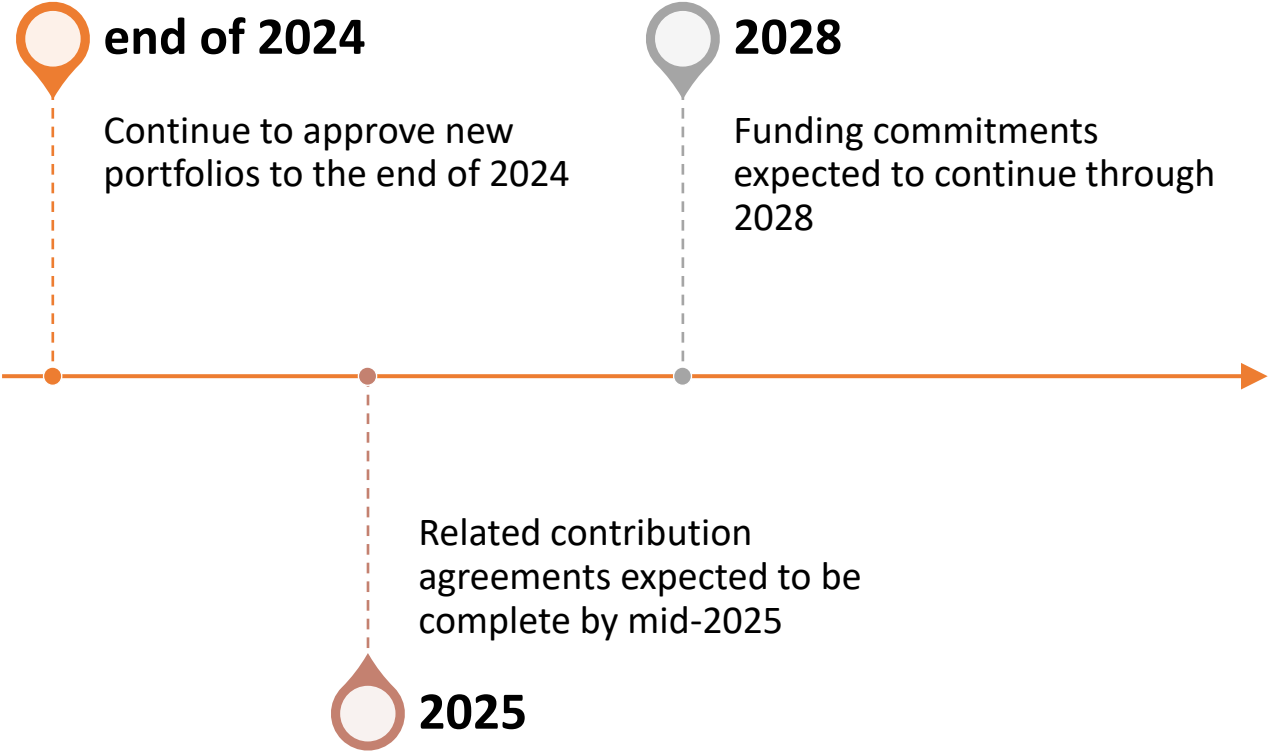
TECHNOLOGY UPDATE

STATE OF TECHNOLOGY—  
METHANE PYROLYSIS

TECHNOLOGY UPDATE

ASSESSMENT OF  
LOW-CARBON FUEL  
PATHWAYS FOR  
MARITIME TRANSPORT

# Closing the Current CGIF Fund





Questions?



# Service Quality Indicators

*James Wong, Director, Budgeting and Strategic Initiatives*

*Brooklyne Maligaspe, Manager, Customer Experience-Business Performance*



# Customer

Service Quality Indicator	2021 Results	2022 Results	2022 Status (Relative to Benchmark)	2023 August YTD Results	2023 Status (Relative to Benchmark)	Benchmark	Threshold
<b>Customer SQIs</b>							
First Contact Resolution	79%	78%	Meets Benchmark	77%	Better than threshold	78%	74%
Billing Index	0.9	1.0	Meets Benchmark	0.8	Meets Benchmark	<=3.0	5.0
Meter Reading Accuracy	88%	88%	Below threshold	95%	Meets Benchmark	95%	92%
Telephone Service Factor (Non-Emergency)	70%	62%	Below threshold	70%	Meets Benchmark	70%	68%
Meter Exchange Appointment	98.3%	98.5%	Meets Benchmark	97.7%	Meets Benchmark	95%	93.8%

Informational Indicator	2021 Results	2022 Results		2023 August YTD Results			
Customer Satisfaction Index	8.7	8.6	n/a	8.5	n/a		
Average Speed of Answer	65 sec.	106 sec.	n/a	74 sec.	n/a		

# Safety and Reliability

Service Quality Indicator	2021 Results	2022 Results	2022 Status (Relative to Benchmark)	2023 August YTD Results	2023 Status (Relative to Benchmark)	Benchmark	Threshold
<b>Safety SQIs</b>							
Emergency Response Time	97.7%	97.7%	Meets Benchmark	97.5%	Better than threshold	97.7%	96.2%
Telephone Service Factor (Emergency)	96.9%	97.1%	Meets Benchmark	97.8%	Meets Benchmark	95%	92.8%
All Injury Frequency Rate	1.75	1.59	Meets Benchmark	1.69	Meets Benchmark	2.08	2.95
Public Contacts with Gas Lines	6	6	Meets Benchmark	5	Meets Benchmark	<=8	12

Informational Indicator	2021 Results	2022 Results		2023 August YTD Results			
<b>Reliability SQIs</b>							
Transmission Reportable Incidents	0	3	n/a	0	n/a		
Leaks per KM of Distribution System Mains	0.0055	0.0058	n/a	0.0040	n/a		

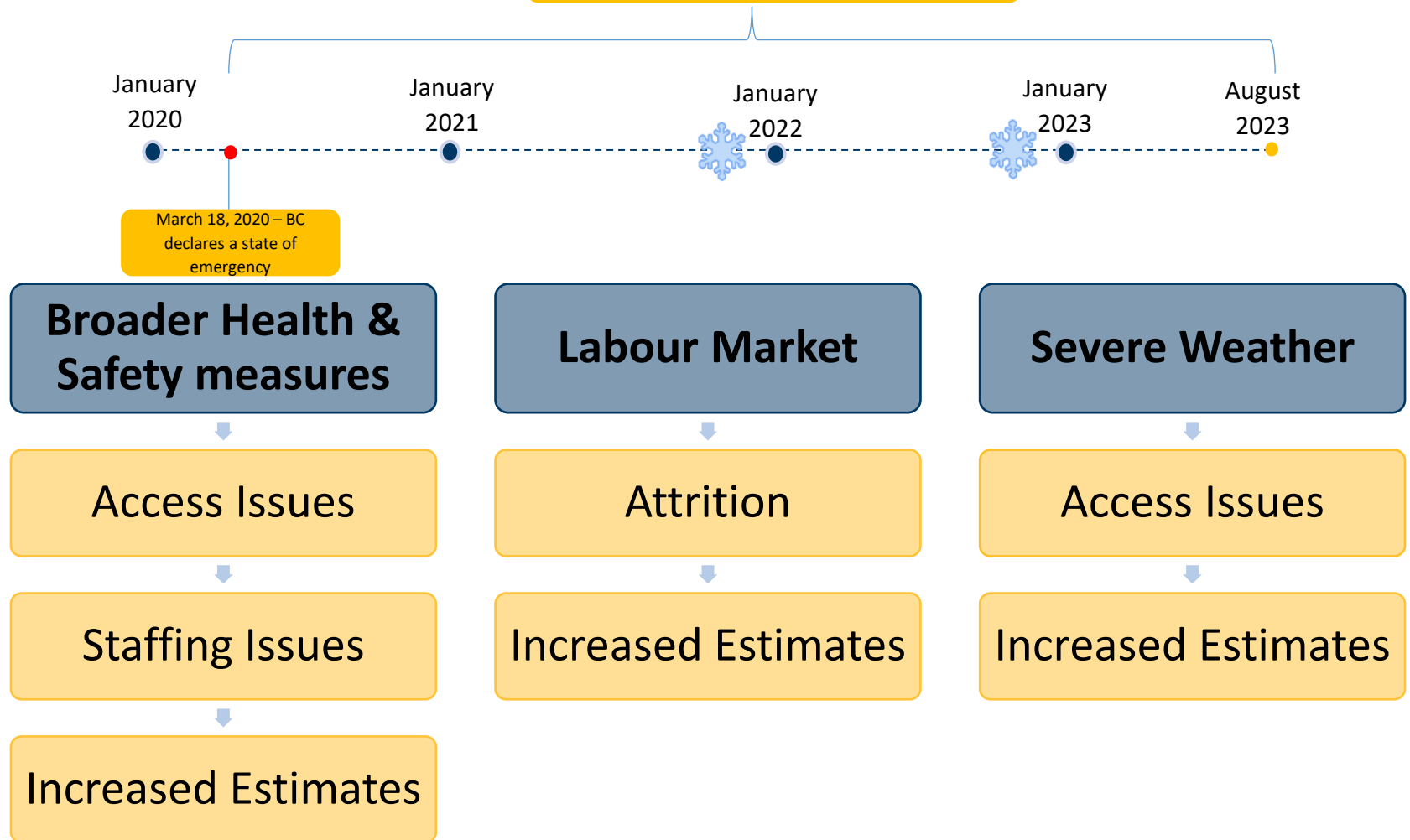
# Service Quality Indicators Customer Service

*Brooklyne Maligaspe, Manager, Customer Experience, Business Performance*

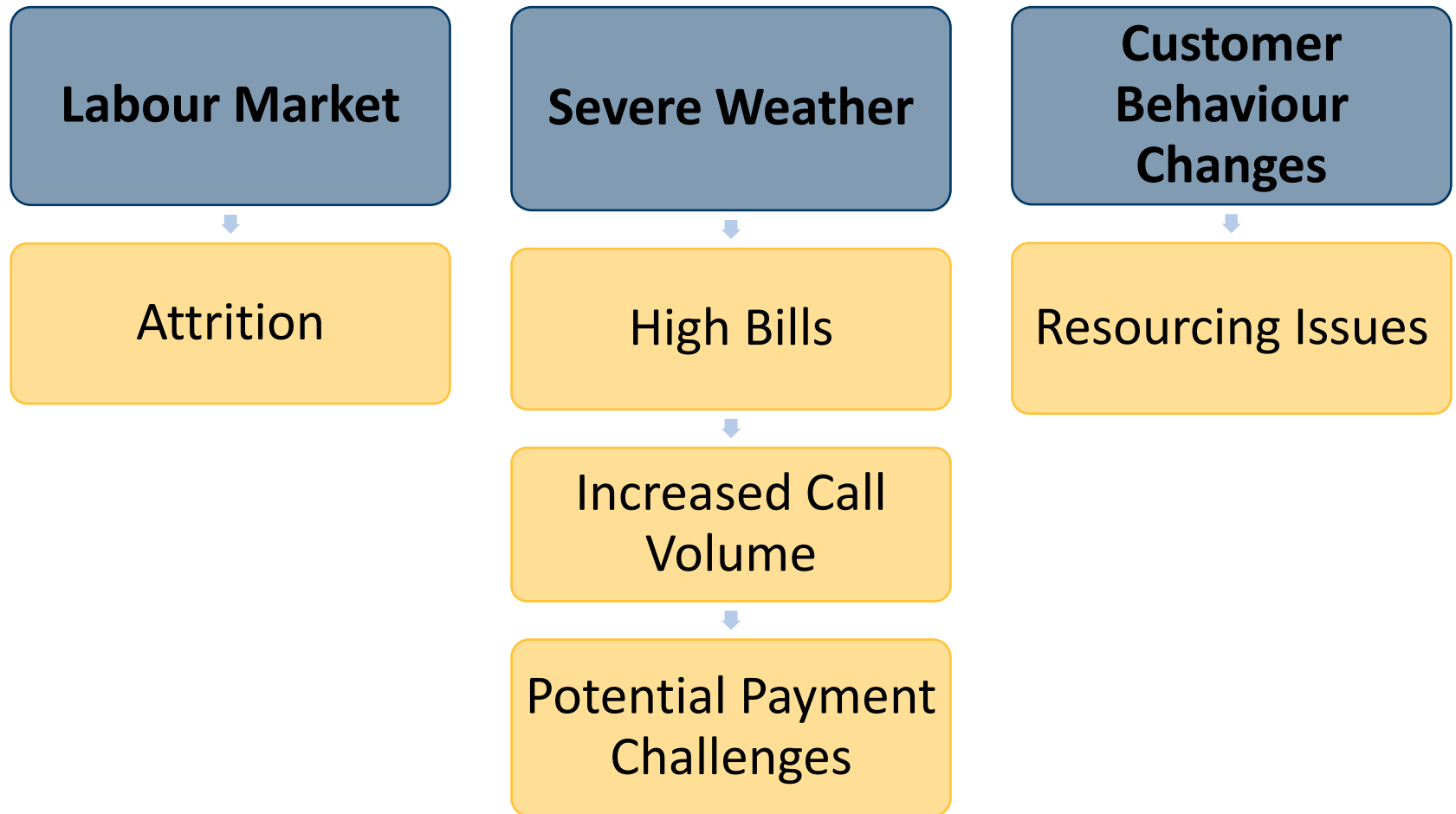


# Impacts on Meter Reading Accuracy

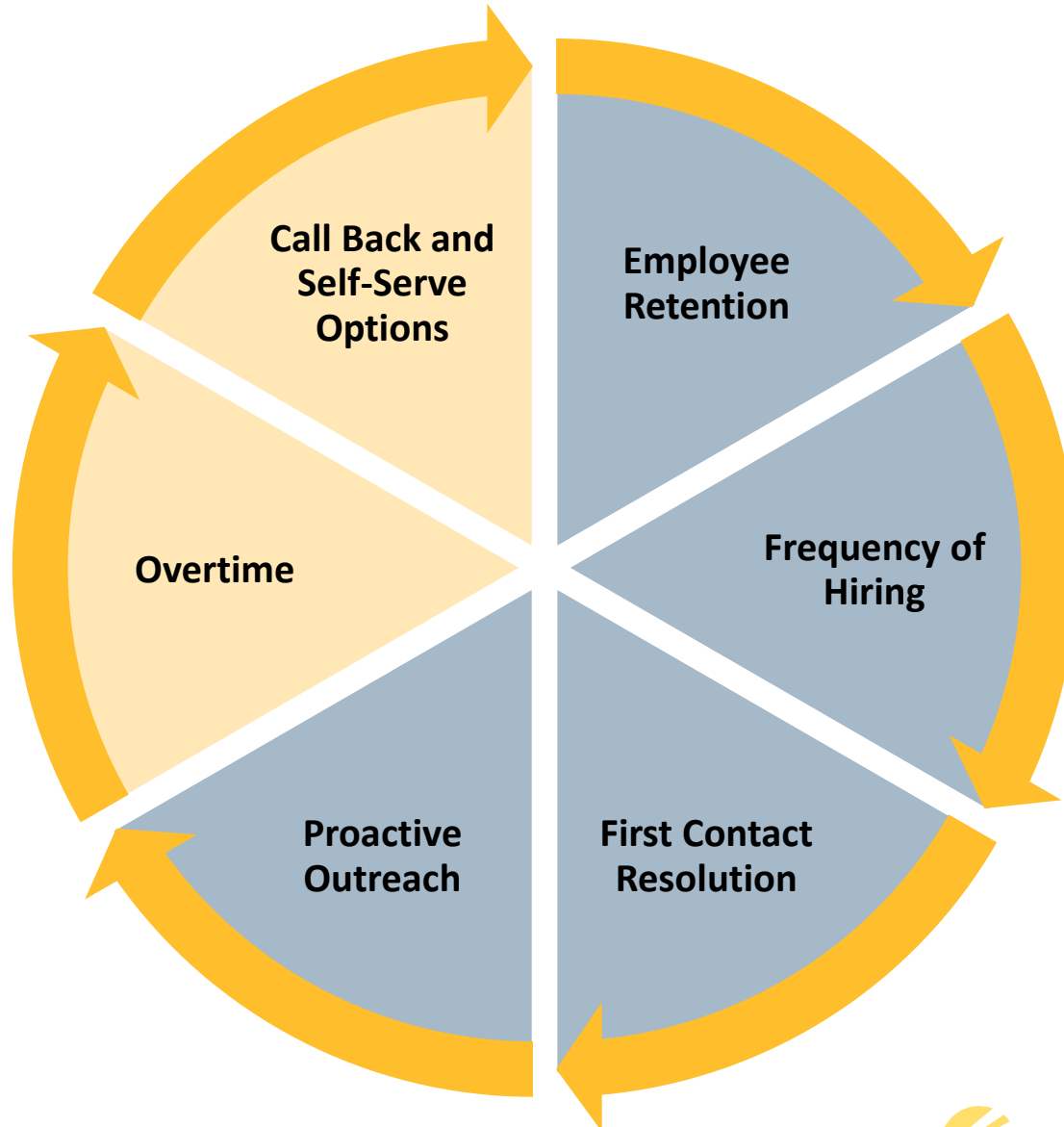
## Health & Safety and Labour Impacts



# Impacts on Telephone Service Factor



# Prevention and Mitigation Efforts





# Overall Customer Satisfaction

- Customer Satisfaction Index and First Contact Resolution remain stable
- 2023 Telephone Service Factor and Meter Reading Accuracy are expected to remain stable for remainder of the year

Questions?



# Question Period