

2023 Capital Budget Application

Overview Presentation

August 10, 2022

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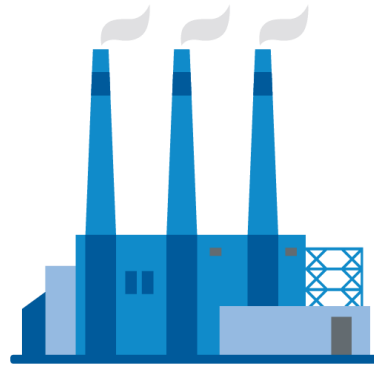
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BACKGROUND

System Overview



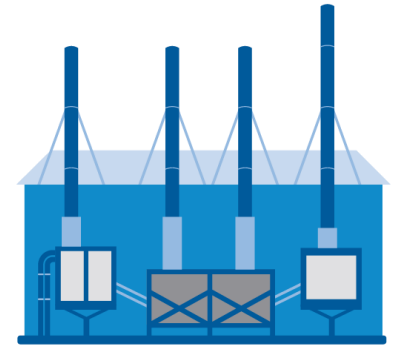
9 HYDROELECTRIC
GENERATING STATIONS



1 OIL-FIRED PLANT



4 GAS TURBINES



23 DIESEL GENERATING
STATIONS

69 HIGH-VOLTAGE
TERMINAL STATIONS

24 LOWER-VOLTAGE INTERCONNECTED
DISTRIBUTION SUBSTATIONS

MORE THAN **7,200km** OF TRANSMISSION
& DISTRIBUTION LINES

Capital Investment Strategy



Invest responsibly in the electrical system to the benefit of customers



Balance system reliability and customer cost



Evidence-based decision making reflecting asset performance and operational and system requirements

Capital Plan Considerations

When considering the inclusion or deferral of capital expenditures in its capital plan, Newfoundland and Labrador Hydro (“Hydro”) reviews the following factors with respect to the proposed scope of work:

Operational Risks

- What is the risk to individual assets?
- What is the criticality of the asset to the electrical system and Hydro Operations?

Cumulative Risk

- Hydro is committed to balancing the management of its aging infrastructure with providing least-cost reliable service

Ability to Execute

- Outage availability
- Resource availability (engineering and construction)
- Supply chain risks

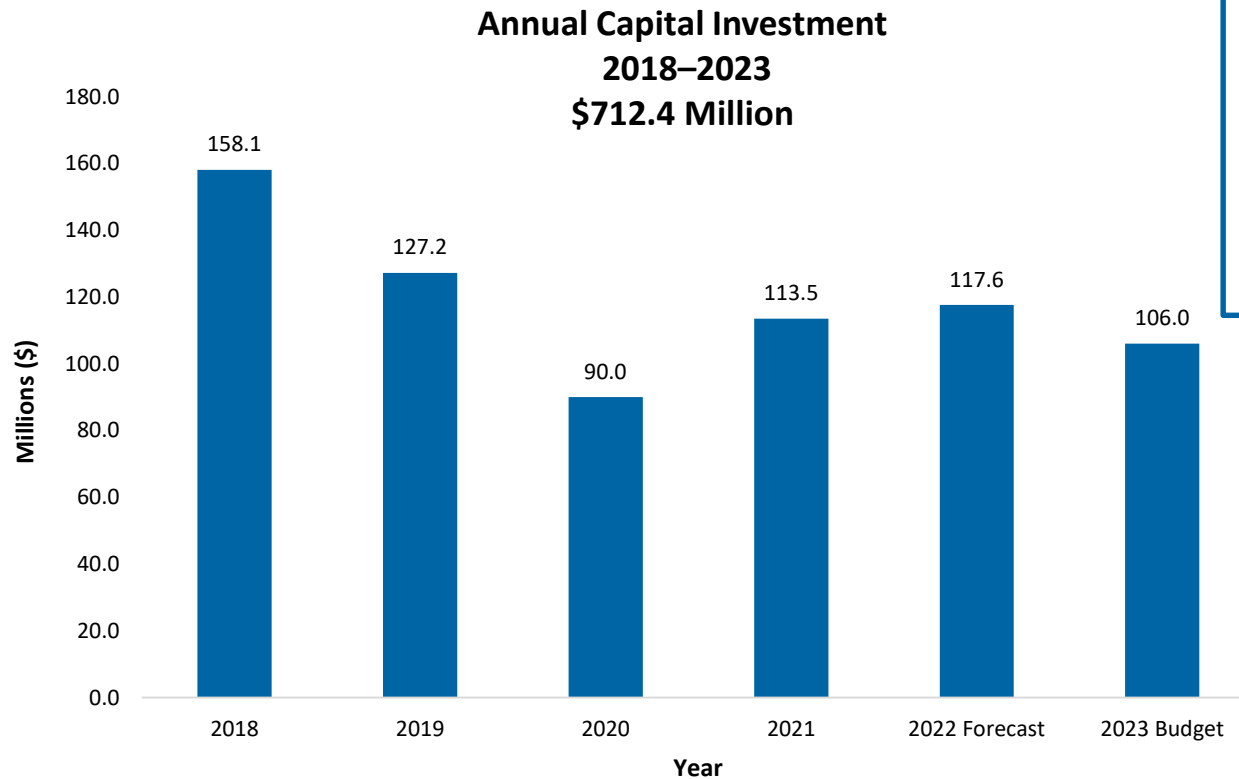
Expenditure Review

- Possibility of deferral – Hydro is focused on doing the right work at the right time
- Continued focus on estimate refinement
- Reassessment of planned capital expenditures

Total Investment

- Hydro is cognizant of the rate impacts of capital investment on customers
- Hydro strives for an investment level with an appropriate balance between cost and reliability

Historical Capital Spends



Hydro's Focus

- Maintain level of reliability expected while ensuring prudent and reasonable expenditures reflective of our capital plan considerations.

- The 2022 forecast estimate is based on June month-end reporting and is subject to change.
- 2020 reflects lower level of expenditure due to impacts of the COVID-19 pandemic on work execution.
- 2018–2019 reflects impact of major capital investments associated with TL267 and TL266 projects.
- 2018–2022 forecasts are gross and exclude Contributions in Aid of Construction (“CIACs”) and insurance proceeds.
- The capital plan outlook for 2023 differs from the 2023 CBA budget of \$90.8 as it includes all anticipated capital expenditures such as supplemental applications, major projects and CIAC.

2023 CAPITAL BUDGET APPLICATION

2023 Capital Budget Application Overview



~55% New Investments

- \$49.6 Million
- Includes \$13.4 Million associated with life extension of the Holyrood Thermal Generating Station

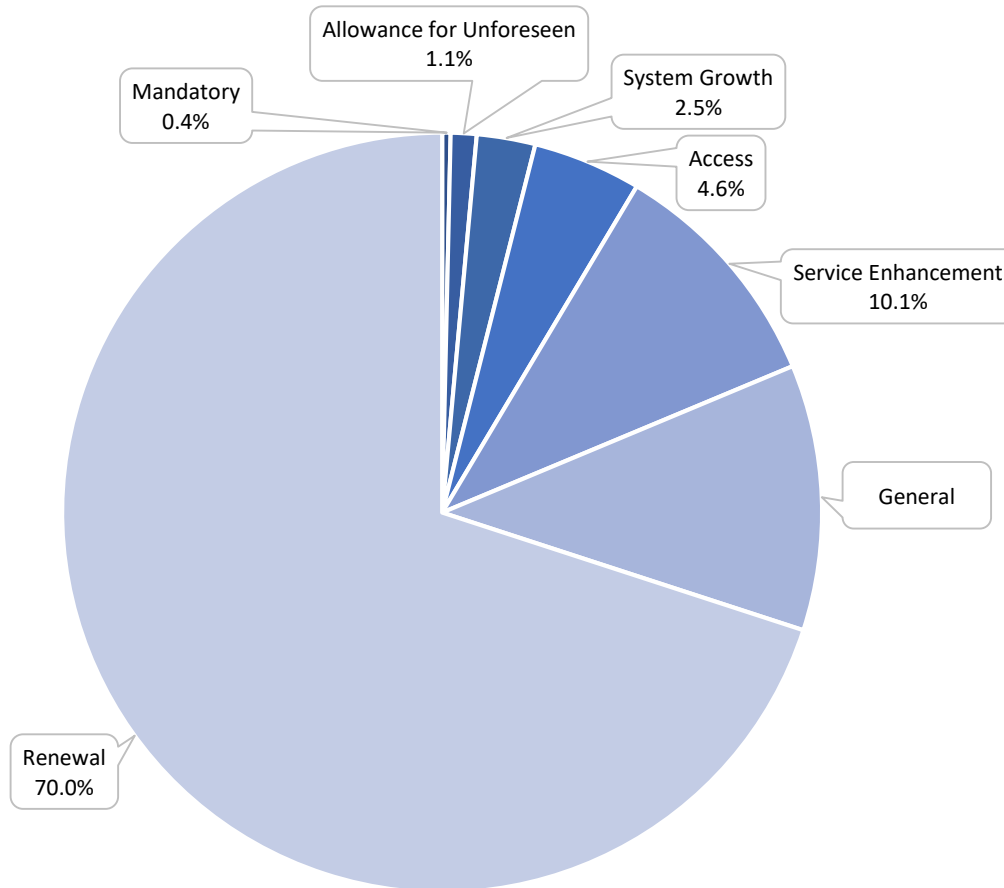
~45% Continuing Investments

- \$41.2 Million
- Reflects multi-year projects/programs continuing from prior years

The total planned capital expenditure is \$106.0 Million

Total planned 2023 capital expenditure anticipated to be recovered through customer rates is \$104.5 Million

2023 Capital Budget by Investment Classification



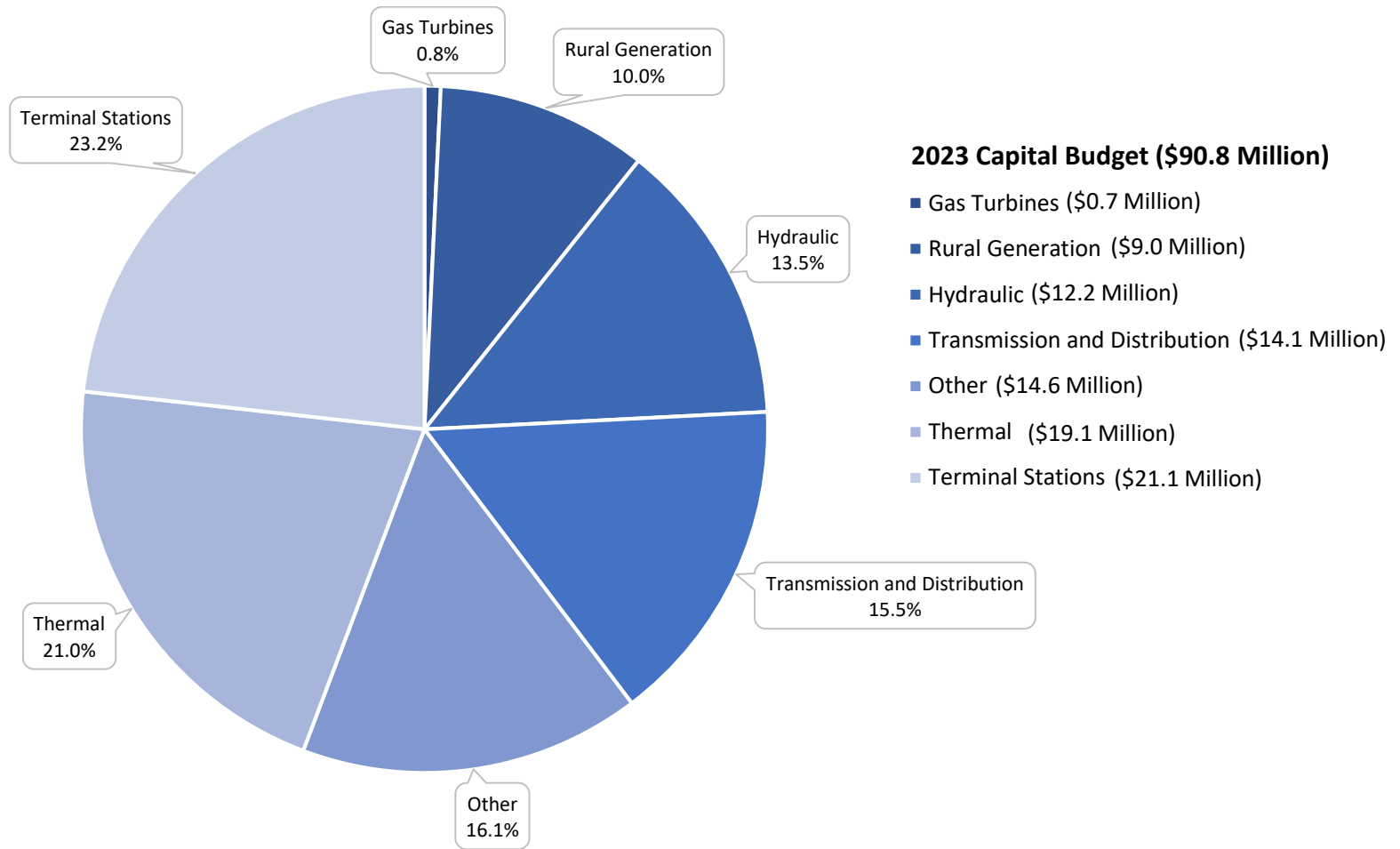
Hydro's Focus

- Classification of investments is reflective of capital plan considerations and asset management strategy drivers.

2023 Capital Budget (\$90.8 Million)

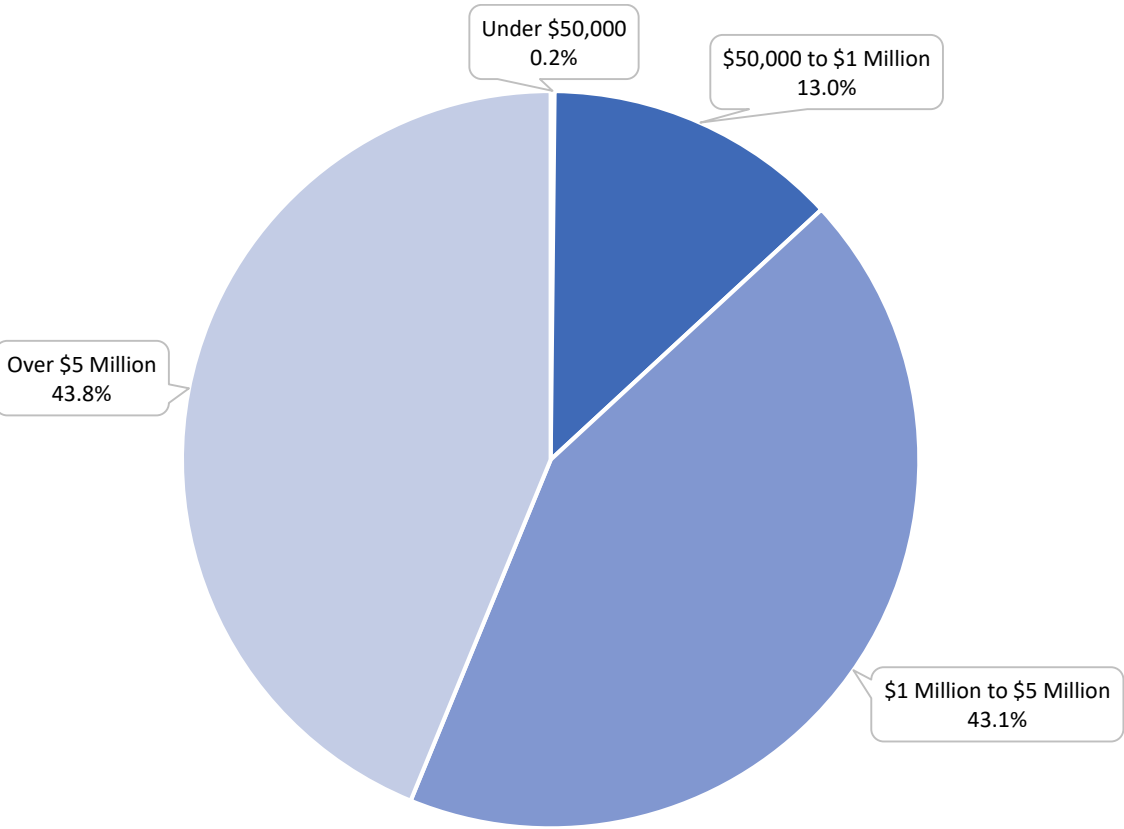
- Mandatory (\$0.3 Million)
- Allowance for Unforeseen (\$1.0 Million)
- System Growth (\$2.3 Million)
- Access (\$4.2 Million)
- Service Enhancement (\$9.2 Million)
- General Plant (\$10.2 Million)
- Renewal (\$63.6 Million)

2023 Capital Budget by Asset Class



- Other includes Properties, Metering, Tools and Equipment, Information Systems, Network Services, Transportation, Administration, and Allowance for Unforeseen.

2023 Capital Budget by Materiality

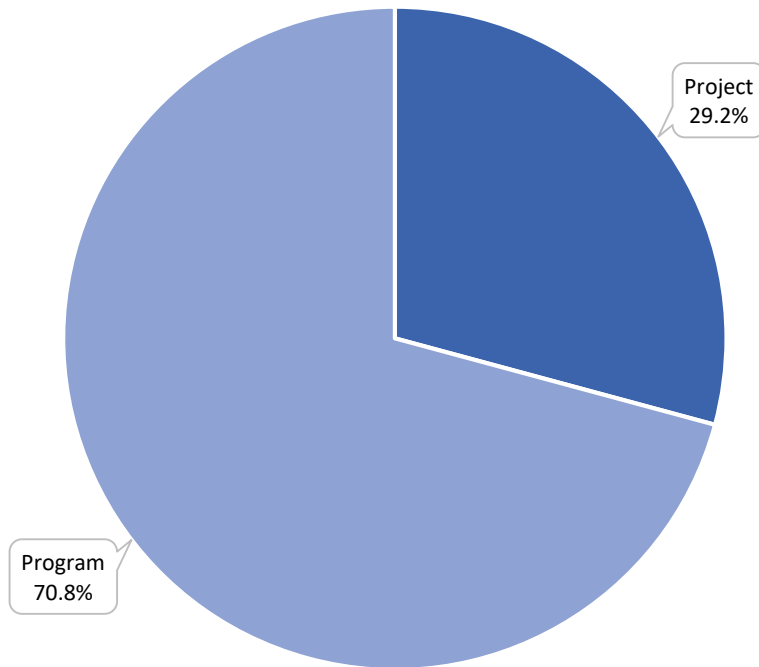


2023 Capital Budget (\$90.8 Million)

- Under \$50,000 (\$0.1 Million)
- \$50,000 to \$1 Million (\$11.8 Million)
- \$1 Million to \$5 Million (\$39.1 Million)
- Over \$5 Million (\$39.8 Million)

Materiality Range	2023 Investments
Under \$50,000	4
\$50,000 to \$1 Million	41
\$1 Million to \$5 Million	18
Over \$5 Million	4

2023 Capital Budget by Investment Type



2023 Capital Budget (\$90.8 Million)

- Project (\$26.5M)
- Program (\$64.3M)

Program

- Ongoing and repetitive
- Based on asset class
- No defined end date
- Annually renewed budget that changes with volume

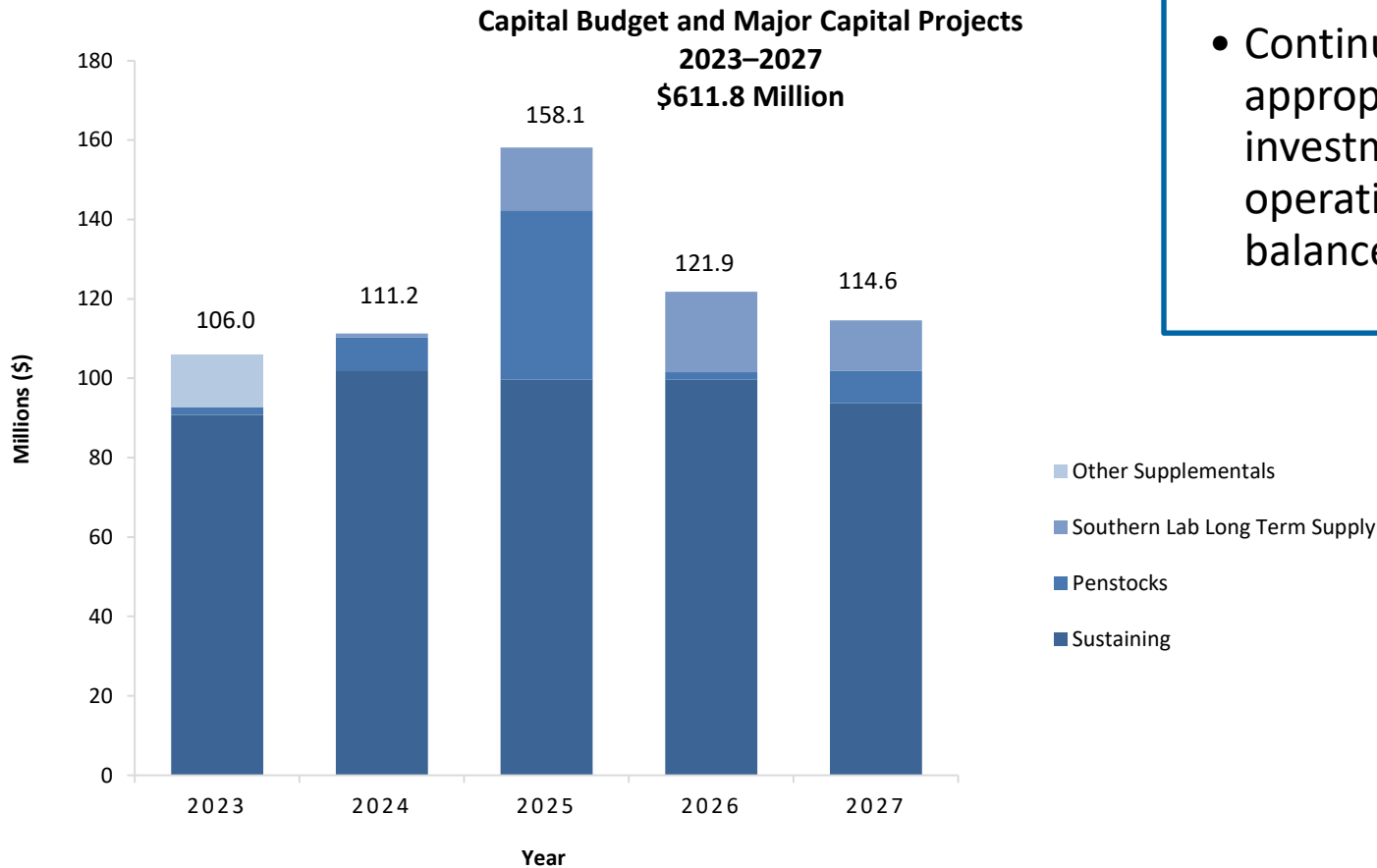
Project

- Work on one well defined asset or group of assets
- Schedule has defined start and stop dates
- Budget is defined over a fixed period of time

Five-Year Capital Plan Outlook: 2023–2027

Hydro's Focus

- Continued focus on appropriate level of investment to manage operational risk and balance rate impacts.



- The capital plan outlook for 2023 differs from the 2023 CBA budget of \$90.8 as it includes all anticipated capital expenditures such as supplemental applications, major projects and CIAC.

PROVISIONAL GUIDELINE COMPLIANCE

General Compliance with Provisional Guidelines

- Hydro believes it has largely complied with evidentiary requirements set out in Provisional Guidelines (“Guidelines”).
- Where full compliance not possible, Hydro has endeavored to meet the intended spirit of the Guidelines.
- Expenditures segmented by:
 - Investment Classification
 - Asset Category
 - Materiality
 - Projects vs Programs
- Hydro is open to further feedback and discussions on the future application of the Guidelines.

Asset Management and Data

- Where available, Hydro has provided asset data as set out in the Guidelines.
 - Asset Age
 - Asset Condition
 - Program Trends and Unit Costs
- Hydro has strived to quantify asset condition where possible.
- Hydro has recently completed Asset Management Readiness Assessment and Improvement Plan.
 - Currently seeking consultant to support Hydro in the implementation of the Asset Management Improvement Plan.

Risk Assessment

Based on safety, environment, and reliability per Guidelines

Expanded corporate risk evaluation matrix which is aligned with ISO 31000

Assessed risk pre- and post-implementation of capital work

Pre-Implementation Risk Scores

Impact					
Very High (5)		2	4	6	1
High (4)			6	6	
Moderate (3)			12	3	7
Low (2)			9	5	1
Very Low (1)					
Likelihood	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)

Post-Implementation Risk Scores

Impact					
Very High (5)	12	1			
High (4)	12				
Moderate (3)	21		1		
Low (2)	15				
Very Low (1)					
Likelihood	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)

Risk Assessment – Example

- Overhaul Unit 2 Turbine and Valves – Holyrood
 - Risk impact categorized by unit rated output for generating assets
 - Impact Score of 5 for Holyrood Unit 2 (170 MW)
 - Likelihood of forced outage considered highly probable if overhaul is not completed
 - Likelihood score of 5

	Impact	Likelihood	Score
Pre-Execution	5	5	25
Post-Execution	5	1	5
Risk Mitigated	20		
Risk Mitigated /\$ Million	2.1		

Prioritization

- Risk Mitigated: Difference between pre- and post-implementation risk scores
- Risk Mitigated per \$ Million Spent: Risk mitigated divided by the cost (in \$ Millions)
- Guidelines state that projects shall be prioritized based on Risk Mitigated per Dollar Spent
 - Hydro has observed limitations with this approach with regards to expenditure prioritization
- Hydro has provided prioritization based on Risk Mitigated per \$ Million Spent as well as based on Risk Mitigated
- Hydro is unable to prioritize based on Reliability Impacts per \$ Million Spent
 - Do not track reliability impacts associated with individual assets

HOLYROOD THERMAL GENERATING STATION

Holyrood Thermal Generating Station 2023 Investments

Thermal Generation: \$19.1 Million¹

- Required Post Generation: \$2.4 Million²
- Thermal In-Service Failures (2023): \$3.3 Million
- Required for continued generation at the Holyrood Thermal Generating Station: \$13.4 Million:
 - Overhaul Unit 2 Turbine and Valves (2023): \$9.7 Million
 - Boiler Condition Assessment and Miscellaneous Upgrades (2023) – Holyrood: \$2.9 Million
 - Overhaul Pumps (2023): \$742,400



¹Expenditures proposed for the Holyrood Thermal Generating Station in the 2023 Capital Budget Application are those required for the continuation of full generation availability until March 31, 2024.

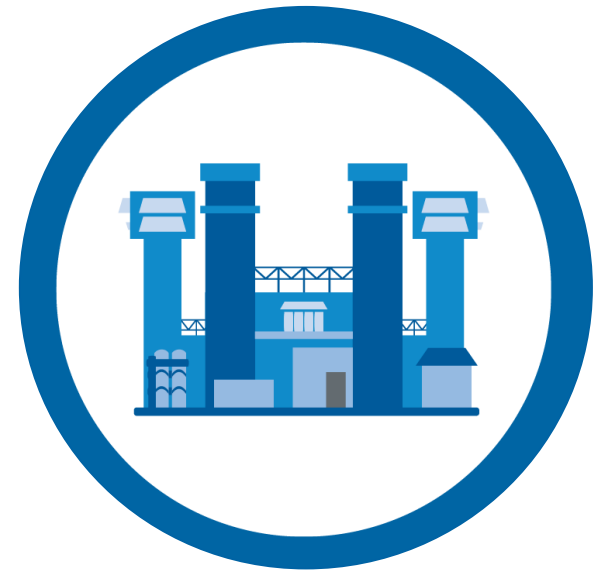
²This includes \$1.9 Million in previously approved expenditures.

Holyrood Thermal Generating Station Risks

Safety

Reliability

Supply Adequacy



SPECIFIC INVESTMENT HIGHLIGHTS

Investments Over \$5 Million

Hydro continues to manage its investments to ensure a balance of cost and reliable service.

Hydro is proposing four projects/programs in the 2023 CBA in this materiality category.

Project/Program	2023 Budget (\$ Million)	Total Budget (\$ Million)
Overhaul Unit 2 Turbine and Valves - Holyrood	\$9.7	\$9.7
Terminal Station Renewal Program	\$1.7	\$7.3
Circuit Breakers Renewal Program	\$0.2	\$5.3
Additions for Load Growth - Upgrade Transformer Capacity - Jean Lake Terminal Station	\$0.6	\$6.0

Investments Over \$5 Million



Additions for Load Growth Investments

- **Upgrade Transformer Capacity – Jean Lake Terminal Station**
 - Hydro is proposing to replace two existing power transformers with one larger power transformer to accommodate an acceleration in load growth in the Labrador West area.
 - This work will eliminate the need for portions of the previously approved scope under the Wabush Substation Upgrades project.

In-Service Failures Investments

- Hydro is proposing the continuation of its Hydraulic, Thermal, Terminal Station, and Distribution In-Service Failure Programs.
- Based on Hydro's successful experience with these programs, and the current emerging trends in other asset areas, Hydro is proposing the establishment of three new In-Service Failure Programs.
- Hydro's estimated 2023 In-Service Failures investment is \$11.1 Million.



Gas Turbine



Diesel



Transmission

Buildings and Property Investments

Hydro is committed to managing the risk associated with its aging properties while balancing the reliability and cost of the service provided.

Five-year plan is reflective of the criticality of these assets to system reliability.

Project	2023 Budget (\$ Million)	Total Budget (\$ Million)
Upgrade Water and Fire Suppression System – Bishop’s Falls	\$0.4	\$3.2
Replace HVAC System - Bishop's Falls	\$0.04	\$0.2
Replace Diesel Shop Building – Bishop’s Falls	\$0.2	\$2.3
Replace Building Exterior– Postville	\$0.1	\$0.7
Refurbish Workshop Roof – Holyrood	\$0.2	\$0.2

CUSTOMER IMPACTS

Revenue Requirement Impact

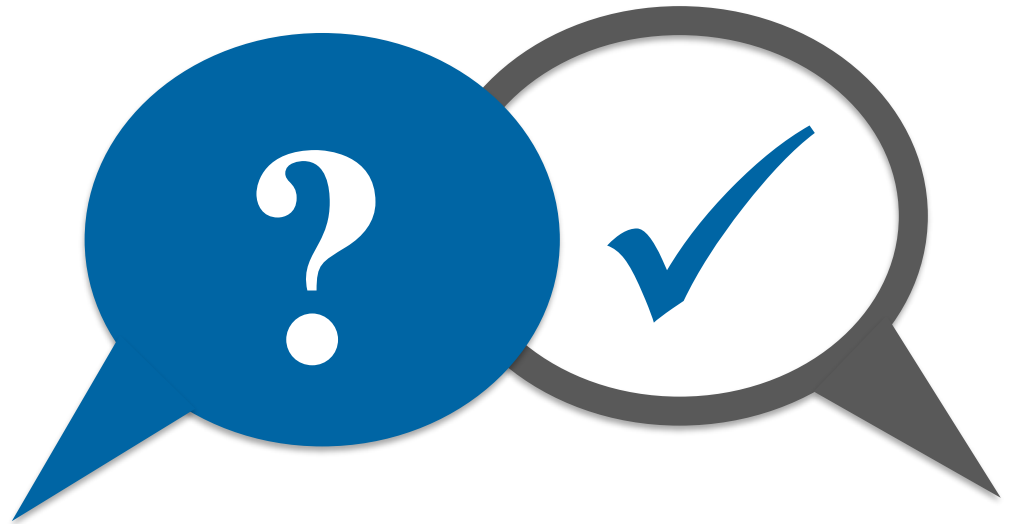
- 2023 capital investments, on a *pro-forma* basis, expected to result in increases of **approximately \$2.5 Million and \$6.6 Million in revenue requirement** for 2023 and 2024, respectively.
- Relative to 2019 Test Year, represents an increase in Hydro's total revenue requirement of **approximately 0.4% and 1%** in 2023 and 2024, respectively.
- Estimates do not reflect any potential reductions in operating and maintenance costs associated with the capital projects proposed.

Estimated Customer Impacts

System	2023	2024
Island Interconnected System	0.4%	1.0%
Labrador Interconnected System - Rural	0.2%	0.6%
Labrador Industrial – Transmission Billings	1.3%	3.5%
Labrador Industrial – Total Billings	0.1%	0.3%

- Impacts are relative to 2019 Test Year revenue requirements.
- Estimated impact on Island Interconnected System customers reflects investments in that system and rural deficit areas.
- Labrador Industrial impacts shown relative to demand charges and total billings.
- Estimates do not reflect potential reductions in operating and maintenance costs associated with the capital projects proposed.

Questions?



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