



2023 Capital Budget Application

Introductory Presentation
July 25, 2022

WHENEVER. WHEREVER.
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Outline

- Background
- 2023 Capital Budget Overall
- Capital Project Overview
- Other Matters





Background

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Newfoundland Power Overview

273,000 customers

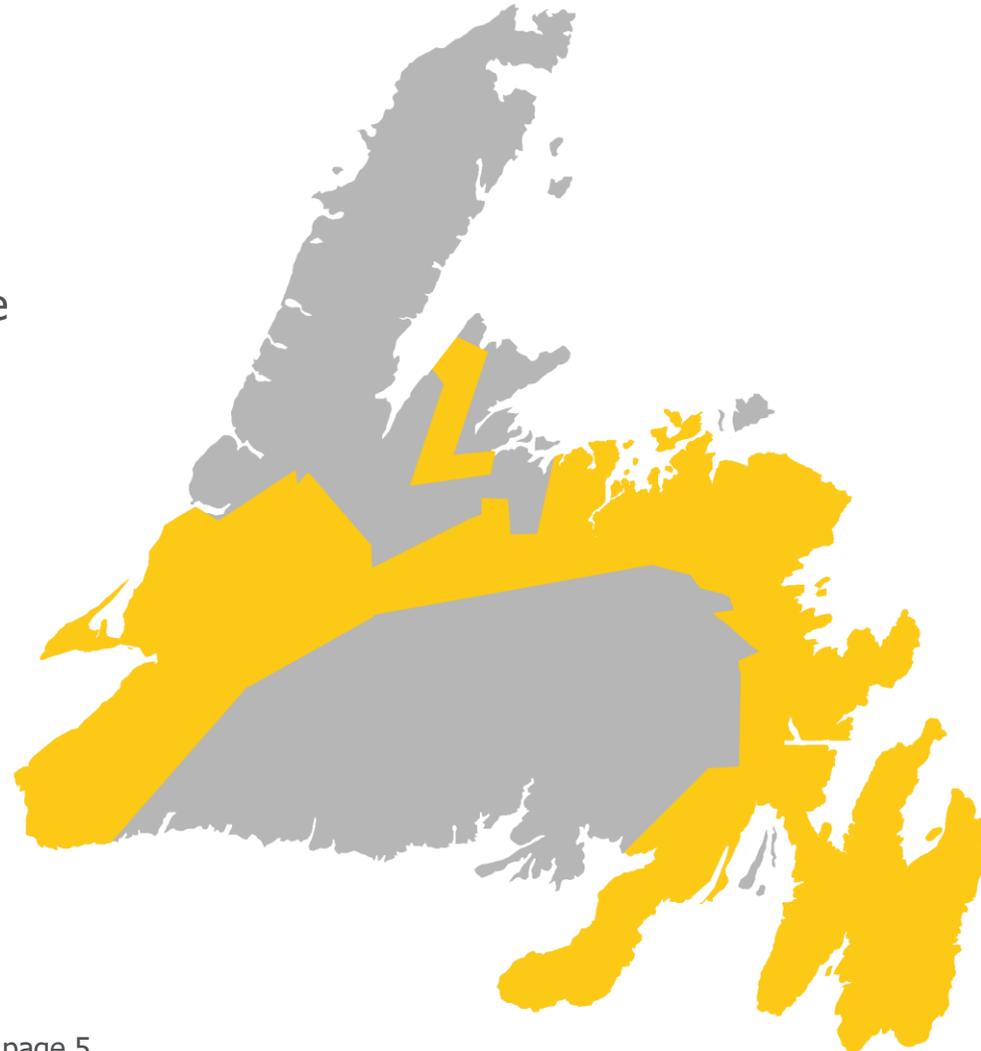
10,000 km distribution line

2,000 km transmission line

131 substations

23 hydro plants

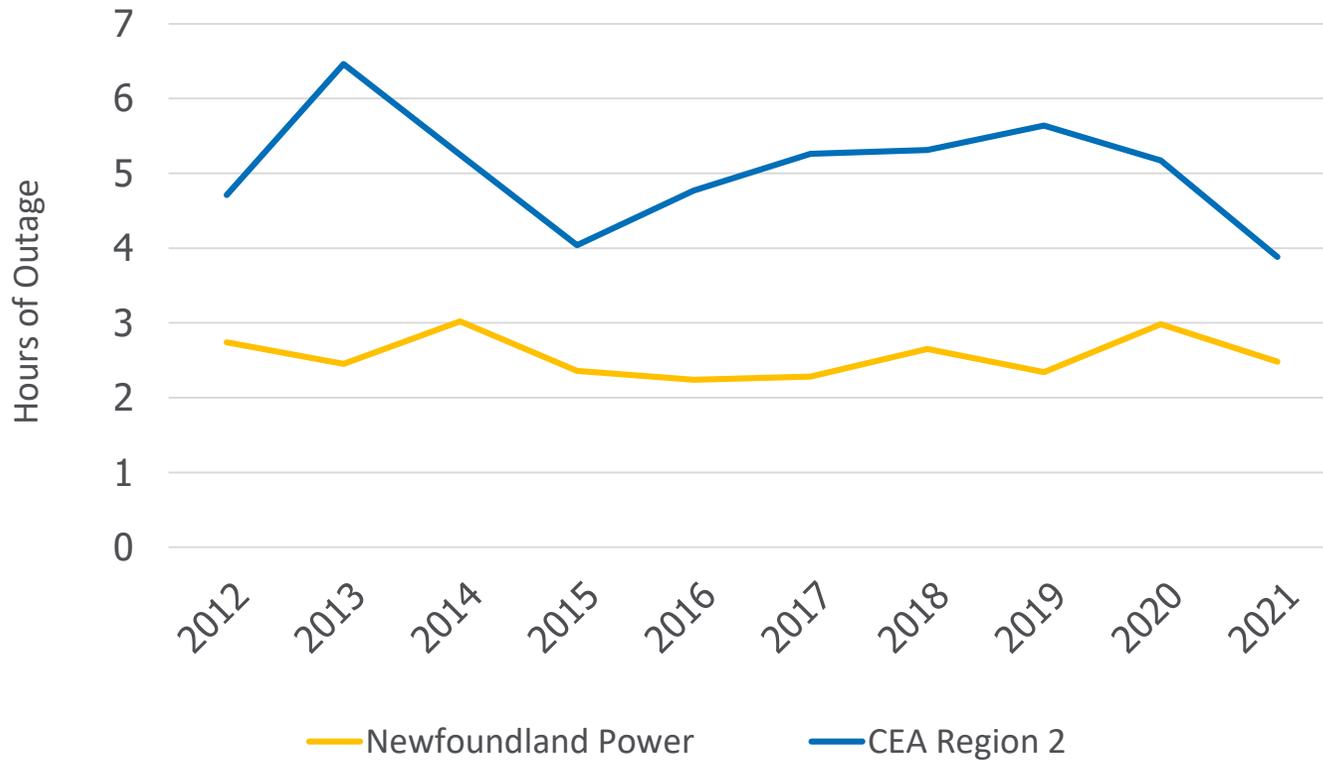
6 backup generators



Source: 2023 Capital Budget Application, 2023 Capital Budget Overview, page 5.

Balancing Cost and Service

Outage Duration
Newfoundland Power vs. Canadian Average



Newfoundland Power Contribution to Customer Rates (¢/kWh)			
	2014	2023	Change
Nominal	3.65	4.23	16%
Real (2022\$)	4.28	4.23	-1%

Source: 2023 Capital Budget Application, 2023 Capital Budget Overview, Section 2.3 Balancing Cost and Service.



Capital Planning

- Comprehensive process determines scope, necessity and timing of capital expenditures
- Based on sound engineering and objective data:
 - Customer connections
 - System load growth
 - Asset condition
 - Economic factors
 - Industry standards
 - Operational requirements

Deferred/Advanced/Modified Expenditures

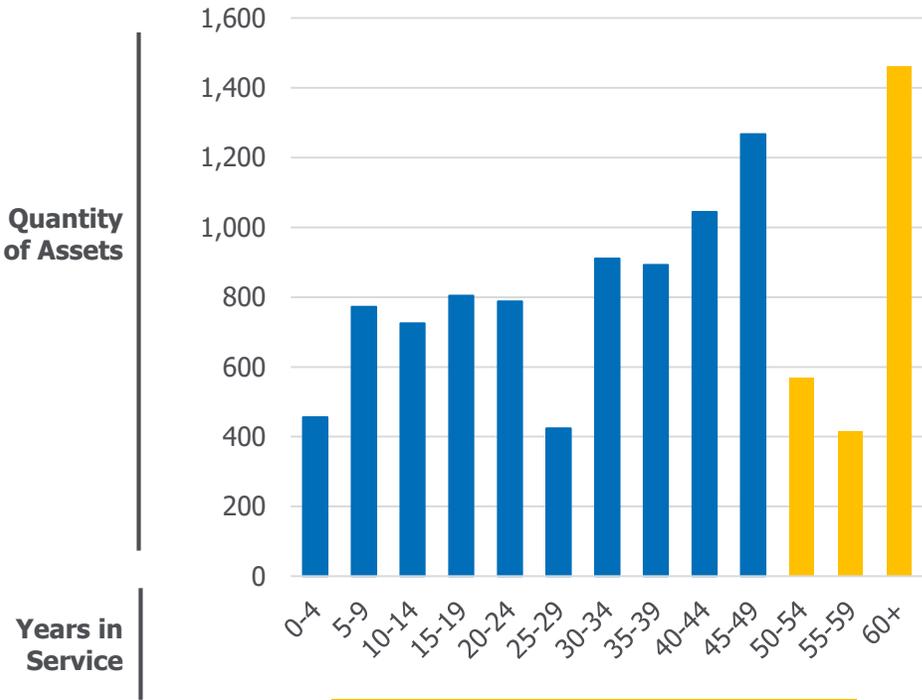
Previously deferred/modified projects proposed for 2023:	7
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Projects advanced to 2023:	1
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Projects planned for 2023 but deferred to subsequent years:	5
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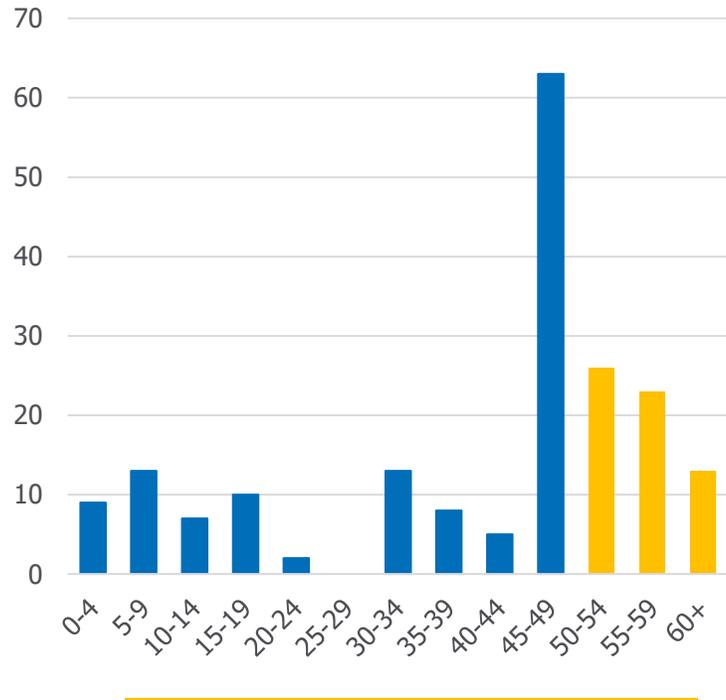
Aging Electrical System

Distribution Overhead Conductor



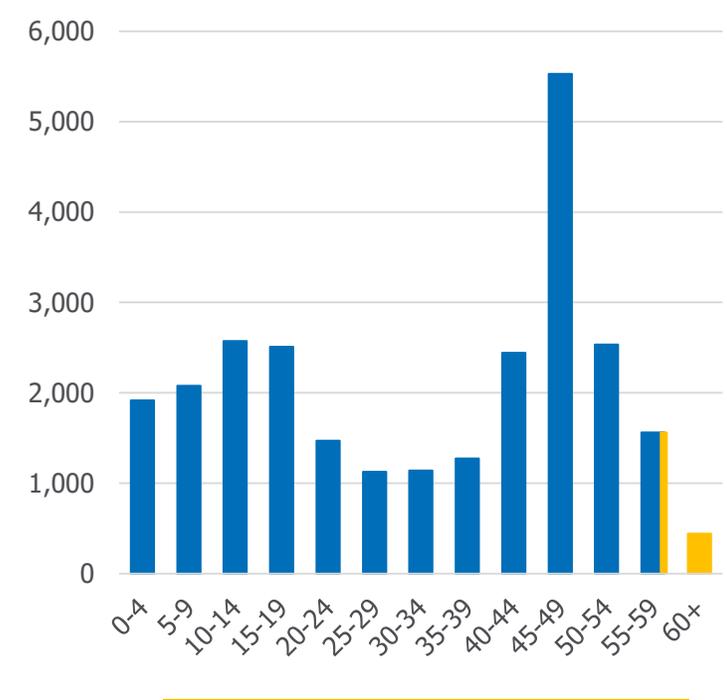
Expected Service Life: 50 Years

Substation Power Transformers



Expected Service Life: 30-50 Years

Transmission Wood Poles



Expected Service Life: 58 Years

Source: 2023 Capital Budget Application, 2023-2027 Capital Plan, Section 2.4 Asset Condition Outlook.



2023 Capital Budget Overall

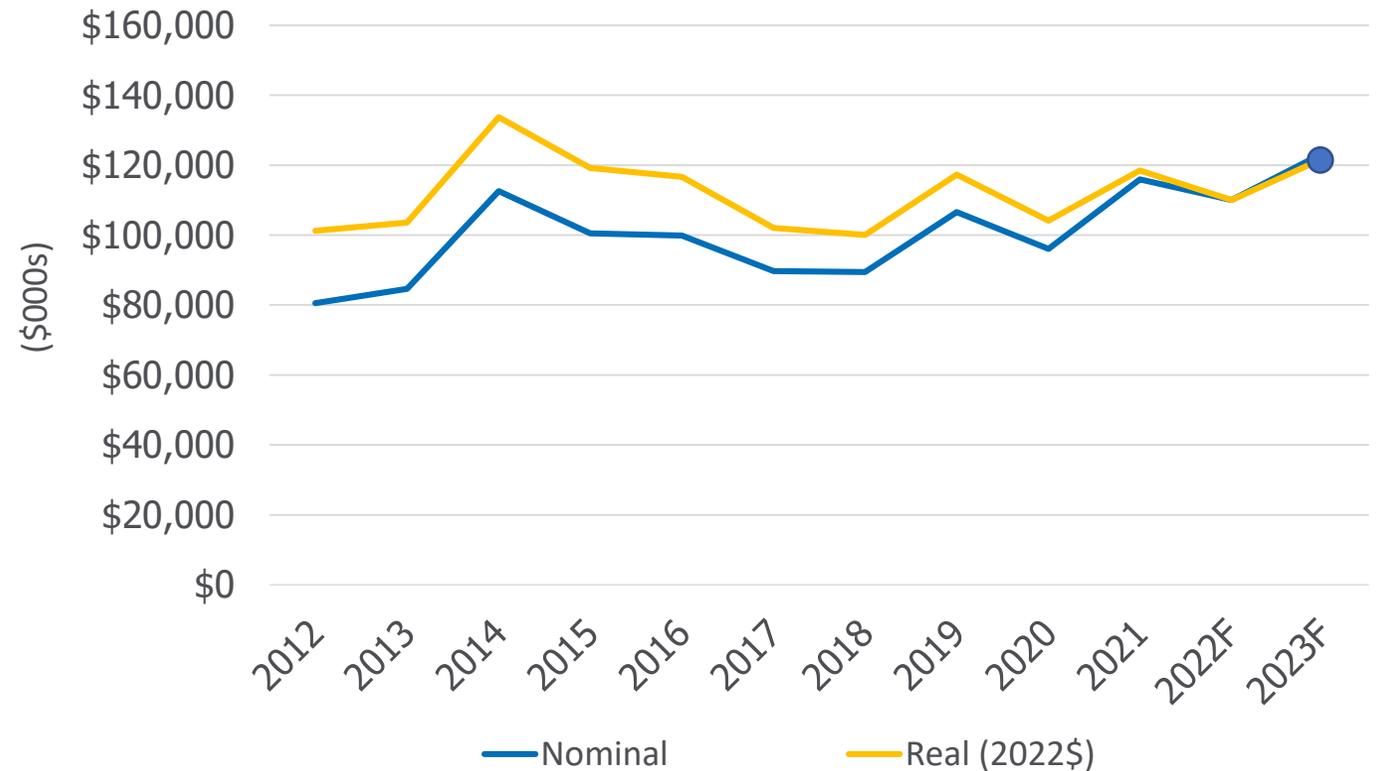
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2023 Capital Budget Overall

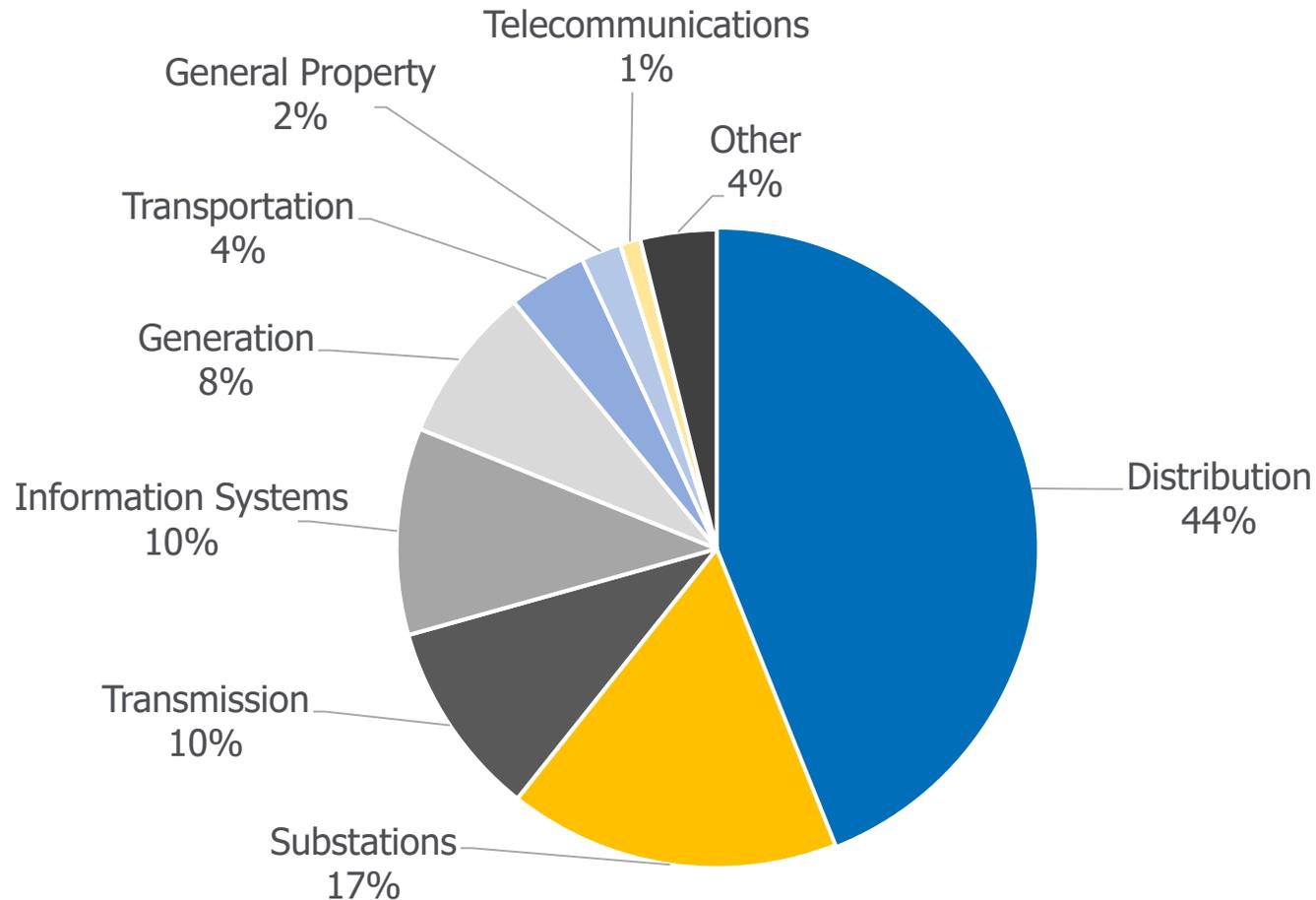
Expenditure Type	2023 Budget (000s)
Single-Year Projects and Programs	\$93,292
Multi-Year Projects Commencing in 2023	\$10,483
Subtotal	\$103,775
Multi-Year Projects Previously Approved	\$19,688
Total	\$123,463

Historical Capital Expenditures



Source: 2023 Capital Budget Application, Schedule A.
 2023 Capital Budget Application, 2023 Capital Budget Overview, Section 2.3 Balancing Cost and Service.

2023 Capital Budget by Asset Class

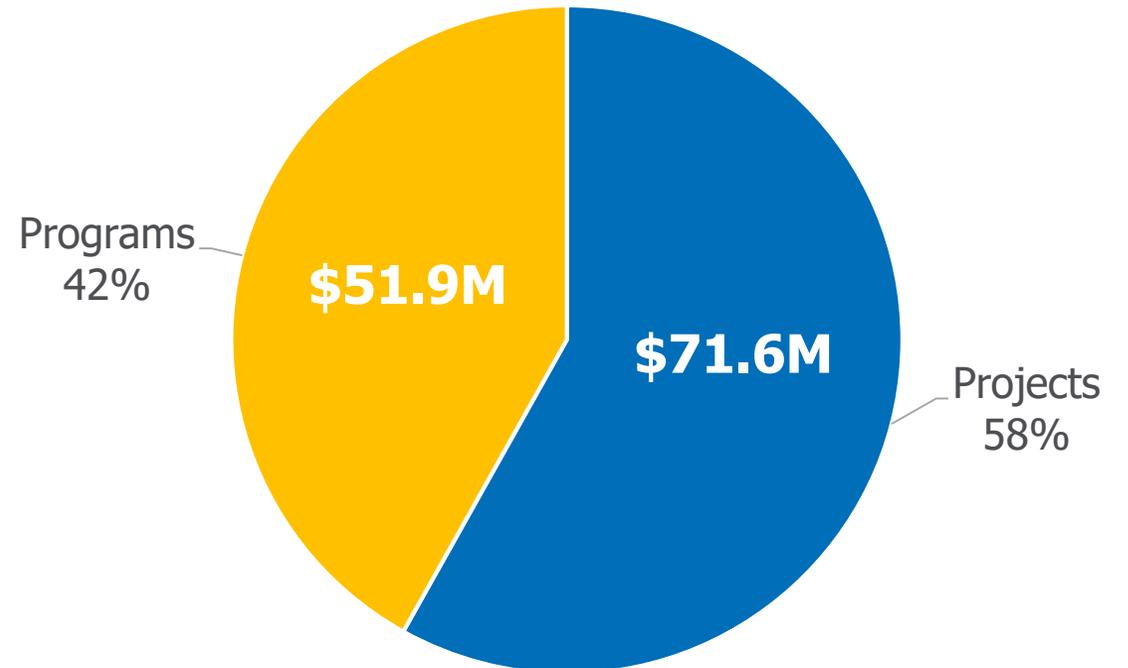


Distribution Investments

- 2,185 customer connections
- Maintain system condition:
 - 2 maintenance programs
 - 3 feeder refurbishments
- Service enhancements:
 - LED street lights
 - Feeder automation
- 2 feeder additions due to load growth (Torbay area)

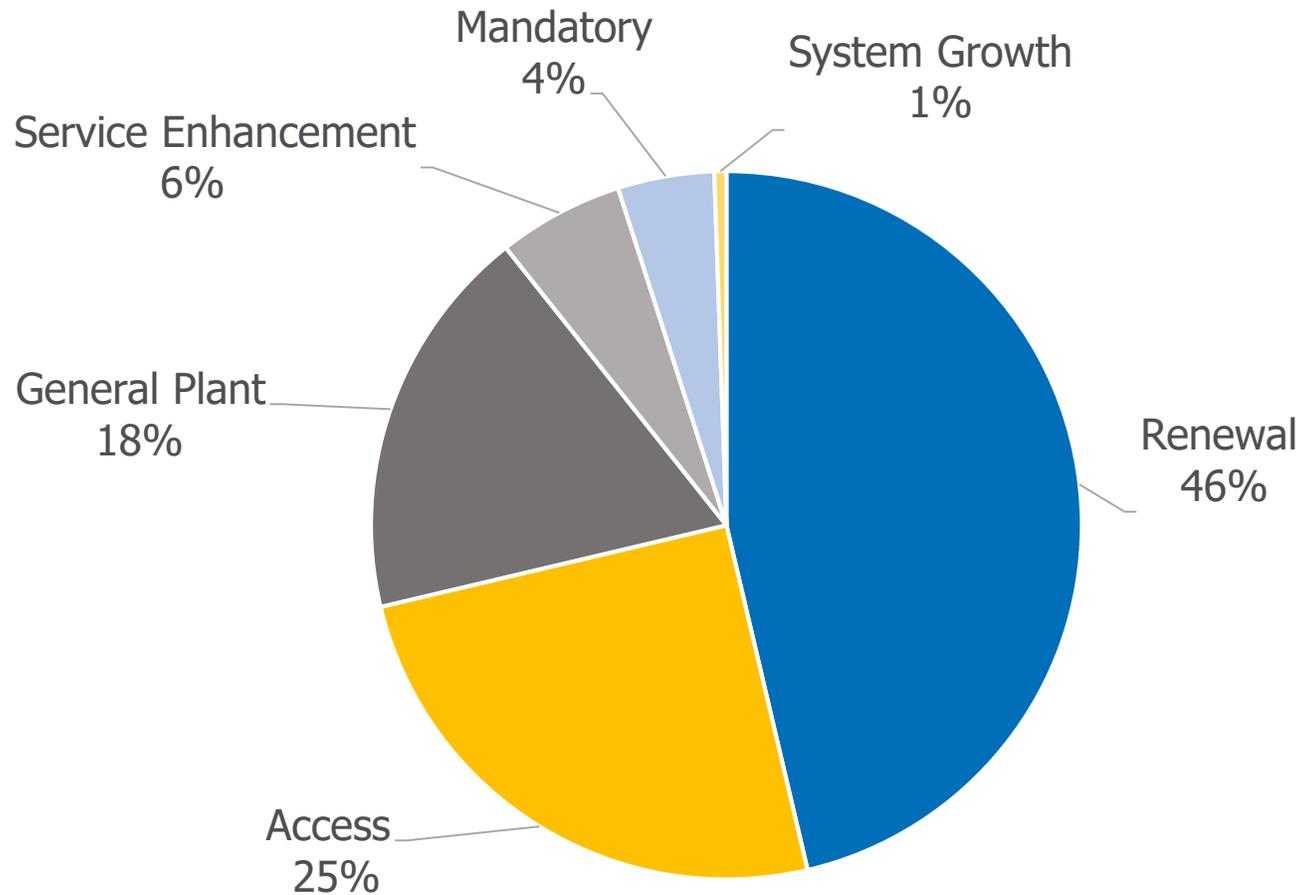
2023 Capital Budget by Category

- 37 Projects
 - Defined schedule, scope and budget based on detailed engineering estimates.
- 20 Programs
 - High-volume, repetitive work that is required on an ongoing basis. Budget typically based on 5-year historical averages.



Source: 2023 Capital Budget Application, 2023 Capital Budget Overview, Section 3.3 2023 Capital Budget by Category.

2023 Capital Budget by Investment Classification



Renewal Investments

- Primarily condition based
- Corrective and preventative maintenance programs
- Refurbishment projects:
 - 3 feeder refurbishments
 - 2 hydro plant refurbishments
 - 2 substations for refurbishment and modernization
 - 2 transmission line rebuilds

Source: 2023 Capital Budget Application, 2023 Capital Budget Overview, Section 3.4 2023 Capital Budget by Investment Classification.

2023 Capital Budget by Materiality

Threshold	Quantity of Projects/ Programs	Percentage of Total Expenditures
Less than \$1 million	26	12%
\$1 million - \$5 million	23	50%
Greater than \$5 million	8	38%
Total	57	100%

Investments Greater than \$5 Million

Previously Approved:

- Customer Service System Replacement (\$31.6M)
- Transmission Line 94L Rebuild (\$13.1M)
- Sandy Brook Plant Penstock Replacement (\$5.1M)
- Replace Vehicles & Aerial Devices 2022-2023 (\$5.2M)

Proposed:

- Extensions (\$12.2M)
- Reconstruction (\$6.7M)
- Transmission Line 55L Rebuild (\$10.6M)
- LED Street Lighting Replacement (\$5.5M)

Risk Assessment Summary

- Risk matrix methodology developed in 2022
- Consistent with public utility practice
- Applies to Renewal, General Plant and Service Enhancement expenditures

Probability Values		Priority Score				
		1	2	3	4	5
Near Certain	5		•	•••	••••	••••
Likely	4			••••	•••••	•••••
Possible	3					•
Unlikely	2					
Rare	1					
		1	2	3	4	5
		Negligible	Minor	Moderate	Serious	Critical
		Consequence Values				

Source: 2023 Capital Budget Application, 2023 Capital Budget Overview, Appendix C.



Capital Project Overview

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Transmission Line 55L Rebuild (\$10.6M)

- Serves 3,400 customers in Placentia area
- Radial transmission line built in 1971
- 50% of poles deteriorated

Alternative

NPV

Address Existing Deficiencies	\$16,497,000
Rebuild in Existing Right of Way	\$15,091,000
Rebuild in New Right of Way	\$12,044,000



Substation Refurbishment and Modernization

Walbournes Substation (\$4,955,000)

- Serves 6,900 customers in Corner Brook
- Condition:
 - Deteriorated 66 kV infrastructure
 - Metal clad switchgear
 - Obsolete protection and control



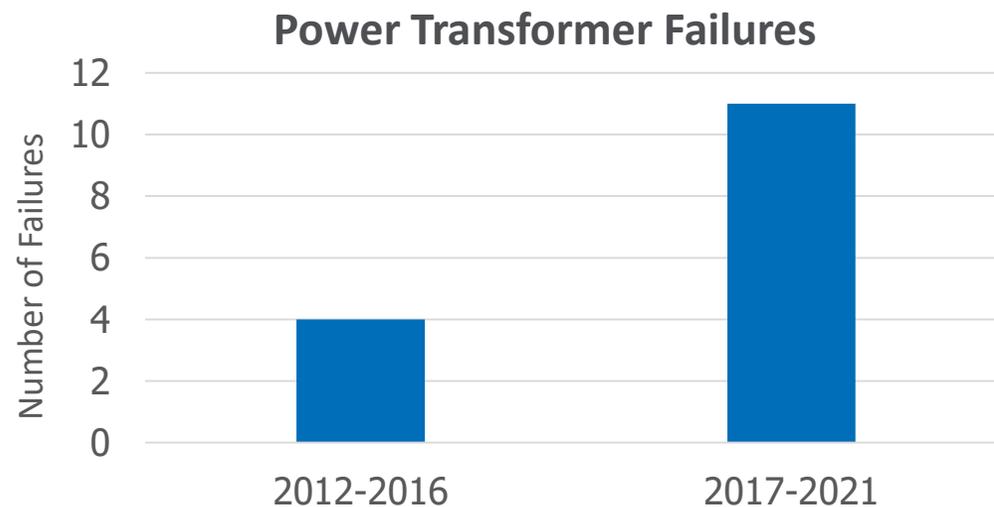
Molloy's Lane Substation (\$4,827,000)

- Serves 8,900 customers in St. John's
- Condition:
 - Deteriorated 66 kV infrastructure
 - Deteriorated 12.5 kV switches
 - Obsolete protection and control



Substation Spare Transformer (\$1.5M)

- Aging assets pose high risk of failure
- Increased failures over last decade
- Limited and diminishing inventory of spares



Source: 2023 Capital Budget Application, Report 2.2 Substation Spare Transformer Inventory.



Mobile Hydro Plant Refurbishment (\$4.1M)

- 40.3 GWh annual production
- Built in 1951
- New 50-year lease with City of St. John's



Source: 2023 Capital Budget Application, Report 4.2 Mobile Hydro Plant Refurbishment.

Lifecycle Cost Analysis (50 Years)		
Scenario	Levelized Value	Net Benefit
Lifecycle Cost of the Plant	2.70 ¢/kWh	-
Cost of Replacement Production (Run of River)	7.84 ¢/kWh	5.14 ¢/kWh
Cost of Replacement Production (Fully Dispatchable)	9.49 ¢/kWh	6.79 ¢/kWh

Distribution Reliability Initiative (\$1.7M)

- Worst performing feeder analysis
- SUM-01 feeder, New World Island
- Targeted approach



SUM-01 Reliability Performance (5-Year Average)			
Metric	SUM-01	Corporate Average	Comparison
Customer Outage Minutes	863,018	92,664	+831%
SAIFI	2.89	1.37	+111%
SAIDI	7.98	1.82	+338%
CHIKM	126	49	+157%
CIKM	46	40	+15%

Source: 2023 Capital Budget Application, Report 1.1 Distribution Reliability Initiative.

Application Enhancements (\$1.5M)

- Includes 6 individual items
- Customer benefits:
 - More efficient service delivery
 - Reduced costs to customers
 - Improved customer service

Item	Budget (000s)
Digital Forms Portfolio	\$163
Geographic Information System	\$335
Virtual Meeting System	\$214
Environment Health & Safety System	\$303
takeCHARGE Website	\$68
Various Minor Enhancements	\$455
Total	\$1,538



Other Matters

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Other Matters

- EV Charging Network
- Advanced Metering Infrastructure
- Long Pond Substation Expansion – Customer Contribution
- Wesleyville and Greenhill Gas Turbines





Questions?

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