

CI C0061552

L6043 Replacements and Upgrades

NON-CONFIDENTIAL

May 4, 2026



NSEB APPROVAL SHEET

Project Title: L6043 Replacements and Upgrades

CI Number: C0061552

Date: May 4, 2026

Expenditure Profile			Type of Filing
Year	Budget Amount	Project Estimate	☐ Capital Project Authorization ☐ Unforeseen and Unbudgeted (U&U) ☐ Planned & Advanced (P&A) ☒ Subsequent Approval Item ☐ Authorization to Overspend (ATO) ☐ Scope Change ☐ Final Cost (FIN)
2026	1,626,537	2,364,378	
2027	831,092	1,238,973	
Total	\$2,457,629	\$3,603,351	

COMMENTS

Submitted on behalf of NOVA SCOTIA POWER INCORPORATED



Authorized Signatory
Dave Pickles
Chief Operating Officer

DATE
May 4, 2026

Approved on behalf of NOVA SCOTIA ENERGY BOARD

DATE

CI Number: C0061552**Title: L6043 Replacements and Upgrades**

Start Date: 2026/06
In-Service Date: 2026/06
Final Cost Date: 2028/02
Function: Transmission
Forecast Amount: \$3,603,351

DESCRIPTION:

L6043 is a 28.9-kilometre 138 kV transmission line, built in 1985, that connects the 113H Dartmouth East substation to the 126H Porters Lake and 87H Musquodoboit Harbour substations. This project is required to replace deteriorated assets that have been identified through NS Power's transmission line inspection program. This project includes the replacement of deteriorated assets on approximately 52 structures.

The project includes:

- Structure Replacements: 22 Structures
- Timber and Insulator Replacements: 27 Structures
- Insulator Replacement: 1 Structure
- Other Deteriorated Asset Replacements: 2 Structures

Summary of Related CIs +/- 2 years:

Pursuant to Section 11.2 of the CEJC, related CIs for Transmission projects include "Work completed on the same asset class (Padmount transformers, Breakers, etc.) or in the same location (feeder, Transmission Line)."

- No other projects in 2024, 2025, 2026, 2027 or 2028

Depreciation Class: Transmission Plant – Overhead Conductors and Devices
 Transmission Plant – Poles and Fixtures
 Transmission Plant – Towers and Fixtures

Estimated Life of the Asset: 45 years

Retirement Information:

- Categorization of Retirement: Accounting Policy 6420 - Retirement and Disposal of Capital Assets
- Percentage of Asset Pool: 0.15%

JUSTIFICATION:

Justification Criteria: Transmission Plant

Why do this project?

The NS Power transmission line inspection program identified deteriorated assets on this line that require replacement to mitigate the risk of unplanned transmission interruptions. Failure to complete this project would compromise the reliable operation of this transmission line. Asset failures on this line would decrease the transmission system's redundancy and as this is a radial line supplying two distribution substations, any disruptions of the line have the potential to negatively impact approximately 10,185 customers.

Why do this project now?

This work has been prioritized based on the assessed condition of the transmission line assets as determined through NS Power's transmission line inspection program results, data collected throughout the transmission line via LiDAR, as well as the criticality of the line to the overall system operation. This project is required to support the reliable operation of the transmission line.

This project is deemed in-service when the first portion of work is forecast to be completed (June 2026); therefore, the Final Cost Date (February 2028) is listed as six months after the last portion of work is forecast to be completed (August 2027).

Why do this project this way?

Replacing the existing deteriorated assets is the only technically feasible option to accomplish the intended scope of this project.

Contingency Statement

Contingency for this project has been determined using a combination of internal subject matter expert judgment (professional engineers and field personnel) based on previous line replacement and upgrade experience and the non-binding contingency guidelines. Consistent with the maturity matrix, this project is being filed as a Class 3 estimate with a contingency of 15 percent. Risks intended to be covered by this contingency are additional overtime work that may be required to complete the project if the outage window is shortened, unforeseen material or contract cost increases, unforeseen costs related to accessing structures in wet or remote locations, or potential additional asset replacements that may be required to support upgrades to existing structures.

Reason for Variance

The increase of \$1,145,722 from the 2026 ACE Plan subsequent submittal estimate of \$2,457,629 is primarily due to an increase in the number of structures requiring pole and other transmission asset replacements and upgrades. The previous budget was based on work at 41 structures compared to the 52 in this application. Additionally, due to this being a radial transmission line, it is vital to keep the amount and duration of outages to customers at a minimum. Therefore, updated work procedures to perform key structure and asset replacements under live line conditions on 138 kV transmission lines were determined to be needed. These procedures required a revision of the existing CU rates, which also accounts for the increase in overall project spend.

Capital Project Detailed Estimate

Location: Transmission CI# : C0061552 Title: L6043 Replacements and Upgrades Execution Year: 2026-2027						
Description	Unit	Quantity	Unit Estimate	Total Estimate	Cost Support Reference	Completed Similar Projects (FP#'s)
Regular Labour						
T&D Labour - Site Supervision	PD	60	\$ 461	\$ 27,790		
Design - Engineering	PD	220	\$ 452	\$ 99,335		
Design - Planning	PD	20	\$ 452	\$ 8,945		
T&D Labour - System Maintenance	PD	34	\$ 444	\$ 15,000		
Sub-Total				\$ 151,070		
Overtime Labour						
T&D Labour - Site Supervision	PD	7	\$ 922	\$ 6,500		
T&D Labour - System Maintenance	PD	4	\$ 889	\$ 3,500		
Sub-Total				\$ 10,000		
Materials						
Wood Poles	Lot	1	\$ 326,439	\$ 326,439		
Insulators	Lot	1	\$ 119,254	\$ 119,254		
O/H Conductor	Lot	1	\$ 1,558	\$ 1,558		
Sub-Total				\$ 447,252		
Contracts						
Wood Poles	Lot	1	\$ 874,922	\$ 874,922		
Insulators	Lot	1	\$ 288,890	\$ 288,890		
O/H Conductor	Lot	1	\$ 1,043,636	\$ 1,043,636		
Sub-Total				\$ 2,207,448		
Other Goods & Services						
Contingency	%	15%	\$ 2,815,771	\$ 422,366		
Sub-Total				\$ 422,366		
Vehicle Overhead						
Vehicle Labour AO				\$ 50,220		
Sub-Total				\$ 50,220		
Administrative Overhead						
Labour AO				\$ 84,250		
Contractor AO				\$ 230,745		
Sub-Total				\$ 314,994		
SUB-TOTAL (no AO, AFUDC)				\$ 3,238,136		
TOTAL (AO, AFUDC included)				\$ 3,603,351		
Original Cost						
				\$ 726,369		

Note 1: The labour figures noted above are an average of salaries across a variety of jobs within similar classifications including fringe, and are used solely for budgeting purposes.

Note 2: Small differences in totals are attributable to rounding.



Instructions: Select option in Column B.
Columns C through G will auto-populate.

Document No: XXX-XX-XXXX-XXXX

Project Cost Estimate Input Checklist and Maturity Matrix						
Transmission Line Infrastructure		Required fields:		Estimate Classification		
Project Name: L6043 Replacements and Upgrades		Started or Preliminary		Class 5	Class 4	Class 3
Maturity Level of Project Definition Deliverables		Defined or Complete		Class 2	Class 1	
General Project Data						
A. Scope						
Project Scope of Work Description		Defined (D)	P	P	D	D
Site Infrastructure (Access, Construction Power, Camp, etc.)		Preliminary (P)	NR	P		
B. Capacity						
Voltage (kV) and Circuits		Defined (D)	P	P	D	D
C. Project Location						
Not Applicable						
D. Requirements						
Codes and/or Standards		Defined (D)	NR	P	D	D
Environmental Monitoring		Preliminary (P)	NR	NR	P	P
E. Technology Selection						
Not Applicable						
F. Strategy						
Right-of-Way (ROW)		Defined (D)	P	P	D	D
Contracting/Sourcing		Defined (D)	NR	P	D	D
Escalation		Not Applicable (NA)	NR			
G. Planning						
System/Grid Planning (including substation and interconnect locations)		Defined (D)	P	P	D	D
Logistics Plan		Preliminary (P)	P	P	P	
Integrated Project Plan		Preliminary (P)	NR	P		
Project Code of Accounts		Defined (D)	NR	P	D	D
Project Schedule		Preliminary (P)	NR	P		
Regulatory Approval & Permitting		Preliminary (P)	NR	P		
Risk Register		Preliminary (P)	NR	P		
Stakeholder Consultation/Engagement/Management Plan		Preliminary (P)	NR	P		
Work Breakdown Structure (WBS)		Not Applicable (NA)	NR			
Start-up & Commissioning Plan		Preliminary (P)	NR	P	P/D	
H. Studies						
Routing Options		Defined (D)	P	P	D	D
Topography & Bathymetry		Not Applicable (NA)				
Environmental Impact/Sustainability Assessment		Preliminary (P)	NR	P		
Environment/Existing Conditions		Preliminary (P)	NR	P		
Meteorology and/or Oceanographic/Subsea		Not Applicable (NA)	NR			
Soils & Hydrology		Not Applicable (NA)	NR			
Technical Deliverables (Specifications and/or Drawings)						
Conductor, Insulator, Grounding, Joint Design (including protection for buried or subsea)		Complete (C)	S	P	C	C
Foundation/Structure (Tower) Design		Not Applicable (NA)				
Route Mapping/Survey		Preliminary (P)	S/P	P/C		
Design Specifications		Complete (C)	NR	S/P	C	C
Instrument List		Not Applicable (NA)	NR			
Construction Permits		Preliminary (P)	NR	S/P	P/C	
Geometric Layout, Alignment, Profile, Cross Section		Preliminary (P)	NR	S/P	P/C	
Land/ROW Title Negotiation		Not Applicable (NA)	NR			
Civil/ Site/Structural/Architectural Discipline Drawings		Preliminary (P)	NR	S/P	P	
Crossings and Borings Designs and Drawings		Preliminary (P)	NR	S/P	P	
Demolition Plans and Drawings		Not Applicable (NA)	NR			
Erosion Control Plan & Drawings		Preliminary (P)	NR	S/P	P	
Foundation/Structure (Tower) Discipline Drawings		Preliminary (P)	NR	S/P	P	
Tower/Structure Location/Spotting		Complete (C)	NR	S/P	P	C
Instrument Datasheets		Not Applicable (NA)	NR	NR/S		
Electrical Discipline Drawings		Preliminary (P)	NR	NR	S/P	P/C
Instrumentation/Control System Discipline Drawings		Not Applicable (NA)	NR	NR		
Total # Deliverables for this Project						
Project		8	28	21	13	11
% Defined/Complete towards Class Estimate		100%	100%	70%	43%	37%

Comments:

This project is being filed as a Class 3 estimate. The defined deliverables for this project indicate that 70% of Class 3 deliverables are completed. A contingency value of 15% was selected to account for specific risks such as contractor availability and material costs. The contingency will also provide a buffer for potential risks to this project that are currently unknown and may be determined throughout the scope of work.

Legend:

The maturity level is an approximation of the completion status of the deliverable. The completion is indicated by the following descriptors:

General Project Data:

- Not Required (NR): May not be required for all estimates of the specified class, but specific project estimates may require at least preliminary development.
- Preliminary (P): Project definition has begun and progressed to at least an intermediate level of completion. Review and approvals for its current status has occurred.
- Defined (D): Project definition is advanced, and reviews have been conducted. Development may be near completion with the exception of final approvals.

Technical Deliverables:

- Not Required (NR): Deliverable may not be required for all estimates of the specified class, but specific project estimates may require at least preliminary development.
- Started (S): Work on the deliverable has begun. Development is typically limited to sketches, rough outlines, or similar levels of early completion.
- Preliminary (P): Work on the deliverable is advanced. Interim, cross-functional reviews have usually been conducted. Development may be near completion except for final reviews and approvals.
- Complete (C): The deliverable has been reviewed and approved as appropriate.

Inclusions:

For the purposes of this document, the term *power transmission line infrastructure industries* is assumed to include greenfield or brownfield sites for overhead, buried and submarine transmission of electrical power in the infrastructure industries. High voltage is typically >100kV but may be less (e.g., 33 or 66kV) if long distance with light electrical loads. This excludes power supply and distribution scope within a process plant, mining facility, building complex or other facility site. It also excludes power generation facilities and substations. The defining deliverables of those excluded project scopes are covered in other RPs (e.g., 18R-97 for process plants [2]).

Power transmission is considered an element of the infrastructure industry. The Construction Industry Institute has provided a good definition of infrastructure in its Project Definition Rating Index for Infrastructure Projects as follows [3]:

“A capital project that provides transportation, transmission, distribution, collection or other capabilities supporting commerce or interaction of goods, services, or people. Infrastructure projects generally impact multiple jurisdictions, stakeholder groups and/or a wide area. They are characterized as projects with a primary purpose that is integral to the effective operation of a system. These collective capabilities provide a service that is made up of nodes and vectors into a grid or system.”

Using this definition, power transmission lines are a vector or linear scope element that connects substation or other facility nodes at its terminations. The substation nodes may be part of or associated with a generation, consuming or interconnection facility. As such, transmission projects are often executed as part of a program that also involves node project scope or facility operational changes (or at least considerations for integrated system commissioning and startup). As the definition states, a distinguishing feature of these projects is that they often traverse wide areas, cross country or subsea, which puts an emphasis on the definition of routing, land ownership and conditions, and establishing right-of-way (ROW). Associated scope definition challenges include defining stakeholder, permitting and regulatory requirements. Buried and submarine installations increase the focus on the protection philosophy and strategies affecting cable selection, arming and joint considerations. While many distinguish power transmission (higher voltage, long distances) from power distribution (short distance, lower voltage connections to retail customers), the principles of estimating these elements are similar; i.e., the RP applies to both.

The main physical power transmission line scope elements are conductors and their support structures if installed overhead. Main installation elements include land clearing if over land (including forestry if applicable), foundation and structure erection and conductor stringing if overhead, or trenching, laying and horizontal boring if subsea. Special scope elements are involved with crossings of water, road, rail and so on and at terminations. Because conductor (e.g., aluminum) and structure (e.g., steel) material costs are usually a significant cost element, these project estimates are particularly sensitive to escalation uncertainty. In general, the more developed the route, the more complex the installation will be. In urban areas, visual appeal and concern for safety and health can be major issues. Installation in remote location and/or difficult or environmentally sensitive terrain creates its own challenges. Subsea installation adds the need for bathymetry¹ and metocean² studies and specialized installation equipment and vessels. Before any installation work can begin in an area, stakeholder consultation must be advanced (sometimes requiring agreements with local populations with rights), and appropriate land and ROW must be acquired which creates unique scheduling as well as cost challenges.

For the purpose of estimate classification then, the main scope definition deliverables are associated with defining the power requirements (i.e., kV), the conductors and structure, and the routing. Conductors can vary widely in content (copper, aluminum, etc.) and insulation. Overhead structures may be wood, concrete, composite or steel in various configurations with various foundation designs including pilings, concrete and so on. The route's land or subsea characteristics and the nature of developments drive the need for special design features and execution strategies. Operability and maintainability considerations may also affect ROW and access design. Brownfield and revamp projects add their own concerns for interface with existing elements, crowded working conditions, etc. For each scope definition decision, stakeholder requirements need to be considered.

Power substation projects are usually associated with transmission projects. However, substations being equipment-centric and located on a facility site have physical and defining characteristics similar to process plant projects (e.g., reliance on one-line diagrams, plot plans, etc.).