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## 2024 ANNUAL PROGRESS REPORTS

In accordance with reporting guidelines by the WECC Reliability Assessment Committee – Studies Subcommittee, please find the attached British Columbia Hydro's 2024 Annual Progress Report on significant additions and changes to our system. Please contact me at Han.Yu@bchydro.com if you have any questions.

Sincerely,

British Columbia Hydro

By
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CC: StS

# BC Hydro System – 2024 Annual Progress Reports

**Major generation & transmission facilities planned by British Columbia Hydro (BCH) over the next 10-year period from 2024 to 2034 are outlined below.**

## 1. Major Generation Additions in Site C (STC) (>200 MW)

| Plants | Capacity (MW) | Planned In Service Date (ISD) |
|---|---|---|
| STC G1 | 205.7 | Dec. 2024 |
| STC G2 | 205.7 | Feb. 2025 |
| STC G3 | 205.7 | May 2025 |
| STC G4 | 205.7 | Jul. 2025 |
| STC G5 | 205.7 | Sep. 2025 |
| STC G6 | 205.7 | Nov. 2025 |

## 2. Major Transmission Line Additions for Site C

| Transmission Lines | Voltage (kV) | Planned ISD |
|---|---|---|
| 5L15 – STC × South Bank (SBK) | 500 | Jul. 2024 |
| 5L16 – STC × South Bank (SBK) | 500 | Oct. 2024 |
| 5L17 – STC × South Bank (SBK) | 500 | Mar. 2025 |

## 3. Peace Canyon 5RX1 Replacement

The shunt reactor 5RX1 at Peace Canyon Generating Station (PCN) for the transmission line 5L3 is more than 40 years old and in very poor condition. As part of the Peace to Kelly Lake Sustainment Project (PKSP), the reactor will be replaced. The new reactor has been ordered and will enable single pole reclosing (SPR) to improve system performance during planned or forced line outages.

The planned ISD is July 2028.

**4. Downtown Vancouver Electric Supply – Recommended Alternative**

**(a) Project 1: Planned ISD is March 31, 2031**

- New Substation: West End Substation (WTE), a new 230/25 kV substation in the northwest area of downtown peninsula to offload existing Dal Grauer Substation (DGR).
- Cut circuit 2L33 between Horne-Payne Substation (HPN) – Cathedral Square Substation (CSQ) at CSQ and extend it to WTE by tying it to a new underground 230 kV section, approximately 2.5 km in length.
- Construct a new underground 230 kV circuit from CSQ to WTE, approximately 2.5 km in length, designated as 2L25 (CSQ–WTE).

**(b) Project 2: Planned ISD is March 29, 2030**

- New Substation: East Vancouver Substation (EVR), a new 230/12–25kV substation in Strathcona neighborhood of Vancouver (adjacent to circuit 2L33 corridor) to offload the existing Murrin Substation (MUR).
- Loop in circuit 2L33 (HPN–WTE) to EVR resulting in two circuits: 2L33 (HPN–EVR) and 2L34 (EVR–WTE).

**5. Vancouver Island Cable Replacement (2L143 and 2L146)**

- Replace 2L143 between Esquimalt Substation (ESQ) – Horsey Substation (HSY) with a new, higher rated, 230 kV XLPE cable circuit installed in a duct bank to address the reliability, environmental, seismic, and growth needs.
  The planned ISD is in Year 2027.
- Replace 2L146 between Goward Substation (GOW) – Horsey Substation (HSY) with a new, higher rated, 230 kV XLPE cable circuit installed in a duct bank to address the reliability, environmental, seismic, and growth needs.
  The planned ISD is in Year 2028.

**6. Vancouver Island - Transmission Reinforcement Stage 2 (VITR#2)**

Upgrade 132 kV cables 1L18 from Vancouver Island Terminal Substation (VIT) to Arnott Substation (ARN) to 230 kV and redesignate to 2L124. And conductor replacement of line 2L010 and 2L057.

The planned ISD is in Year 2029.

**7. 2L32 Cable Replacement**

Replacement of cable 2L32 between Cathedral Square Substation (CSQ) to Horne Payne Substation (HPN) with a new, higher rated, 230 kV cable circuit.
The planned ISD is in Year 2032.

**8. Reconfigure Williston Shunt Elements**

This is a sustainment driven system reinforcement as a part of PKSP project to enable single pole reclosing (SPR) on 5L7. The project scope includes:

- Replace switchable 135 MVAr line reactor with a new 90 MVAr fixed line reactor on 5L7 at Williston Substation (WSN).
- Install a 135 MVAr switchable shunt reactor on WSN 500 kV bus.

The planned ISD is April 2027.

**9. West Kelowna Transmission Project (WKTP)**

This project will provide a second transmission line (138 or 230 kV) to BC Hydro's Westbank Substation (WBK). This new line will provide redundant transmission supply to WBK.
The planned ISD is July 2028.

**10. Customer's Mining Project**

The project involves a new construction of Treaty Creek Substation (TCT) by sectionalizing existing 2L102 (SKA–BQN) and looping in and out into TCT. After completion of TCT, the existing 2L102 (SKA–BQN) will become 2L102 (SKA–TCT) and 2L377 (TCT–BQN).
The planned ISD is October 2026.

**11. Glenannan to Terrace Transmission (GTTT project)**

Advancement of 5L65 and 5L66 is required for 500 kV system reinforcement to support North Coast Load growth.
The planned ISD is Dec 2032.

**12. Prince George Terrace Capacitors (PGTC)**

The PGTC project will build three new capacitor stations between Prince George and Terrace to increase capacity of the 500 kV North Coast transmission system by 500 MW to meet the needs of interconnection customers and support the provincial government's initiatives under

CleanBC. The project scope also includes the addition of a 600 MVA transformer at the Skeena Substation (SKA) in Terrace.

- The planned ISD for the series capacitors on 5L61 and 5L62 is Dec. 2026.
- The planned ISD for the series capacitors on 5L63 is Oct. 2028.
- The planned ISD for the transformer at SKA is Dec. 2026.

**13. Prince George to Glenannan Transmission. (PGGT)**

5L064 - 500 kV System Reinforcement to support North Coast Loads.
The planned ISD is Sep 2030.

**14. Lower Mainland - Capacitive and Reactive Power Reinforcement (LMCRPR)**

Retire BSY substation and replace it with four 230 kV shunt capacitors and two 230 kV shunt reactors at four substations.
On January 24, 2024 the BC Utilities Commission rejected the project. An ex-plan project to still proceed with the shunt capacitors at two substations (McLellan and Clayburn) is proceeding on the original timeline for an in-service year of 2026. In the meantime the Burrard Synchronous Condenser Station (BSY) will continue to be operated until the regulatory proceedings are completed and the future of the site is confirmed.

**15. Metro South - Transmission Reinforcement**

This project includes:

- Build a new 230 kV circuit from NEL to MAN on the ex-2X046 cable route and loop in future Metrotown Substation, and
- Build new 230 kV circuit from ING to NEL, and
- Build new 230 kV circuit from CAM to KI2, and
- Re-configure CAM 230 kV bus.

The project ISD is in Year 2033.

### 16. Transformers Addition/Replacement for System Reinforcement

| Transformer | Capacity | Planned ISD | Reason |
|---|---|---|---|
| Skeena (SKA) T3 – 500/287/12.6 kV | 672 MVA | Dec. 2026 | Addition |
| Bear Mountain Terminal (BMT) T4 – 230/138/12.6 kV | 300 MVA | Dec. 2026 | Addition |
| Mainwaring Station (MAN) T1 & T3 225/12.6-25.2 kV/12.6-25.2 kV | 150 MVA × 2 | Dec. 14 2026 | Replacement |
| Mount Pleasant substation (MPT) T3 230/12-25/12-25 kV | 90/120/168 MVA | Oct. 31 2028 | Addition |
| Barnard – Substation<br>Add two 230/25kV Transformers | 150 MVA × 2 | Mar. 31 2029 | Addition |
| Bridge River Terminal (BRT)<br>T4A – 345/238/12.6 kV | 90/120/150 MVA | Nov. 30, 2024 | Replacement |
| Steveston Substation Upgrade 230/25kV | 75MVA | Oct. 31, 2030 | Addition |

### 17. New Substation Construction

| Substation | Voltages and Capacity | ISD |
|---|---|---|
| Campbell Heights – Substation | 230/25kV, 200MVA | Mar. 31, 2032 |
| Surrey City Centre | 230/25kV, 100MVA (current stage) / 400MVA (ultimate stage) | Mar. 31, 2032 |
| Willoughby Substation Construction | 230/25kV, 200MVA | Mar. 31, 2032 |
| Goldstream Substation | 230/25 kV, 200MVA | Mar. 31, 2030 |
| Metrotown Substation | 230/25 kV, 200MVA | 2033 |

### Projects Completed in 2022/2023

| Transformer | Capacity | ISD | Reason |
|---|---|---|---|
| Bridge River Terminal (BRT)<br>T4B – 345/238/12.6 kV | 90/120/150 MVA | Nov. 8, 2022 | Replacement |

### Projects Cancelled in 2022/2023

None.