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July 10, 2024

GHG Reduction (Clean Energy) Regulation Reporting
Director, Clean Transportation Branch
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Ministry of Energy, Mines and Low Carbon Innovation
Email: GGRRReporting@gov.bc.ca

British Columbia Utilities Commission
GHG Reduction (Clean Energy) Regulation Reporting

Email: commission.secretary@bcuc.com

RE: Ministry of Energy, Mines and Low Carbon Innovation (EMLI or Ministry)
British Columbia Hydro and Power Authority (BC Hydro)
Greenhouse Gas Reduction (Clean Energy) Regulation Reporting
Fiscal 2024 Annual Report

BC Hydro writes to submit the Business Information and Declaration (Attachment 1), the Fiscal 2024 Greenhouse Gas Reduction (Clean Energy) Regulation (**GGRR**) Annual Report (**Report**) (Attachment 2), and the Low Carbon Electrification Program Results in an Excel format (Attachment 3). The Report includes results for the period from April 1, 2023, to March 31, 2024 (**Fiscal 2024**) for BC Hydro's prescribed undertakings as defined in section 4 and section 5 of the GGRR.

Under section 18 of the *Clean Energy Act*, a public utility implementing prescribed undertakings defined in the GGRR must submit to the EMLI a report respecting the prescribed undertakings. Specifically, section 18(5) states that "a report to be submitted under section (4) must include the information the minister specifies and be submitted in the form and by the time the minister specifies."

On April 5, 2024, BC Hydro received from the EMLI an updated reporting template for the period from April 1, 2023, to March 31, 2024, for prescribed undertakings under the GGRR. This report contains information that reflects this updated template.

On June 27, 2022, the Government of British Columbia issued the Direction to the British Columbia Utilities Commission Respecting Load Attraction and Low-Carbon Electrification (the **Electrification Plan Regulation**). As further explained in the GGRR Report, in fiscal 2024, most of BC Hydro's LCE activities/programs that would have been "prescribed undertakings" under section 4(3) of the GGRR are now carried out as Low Carbon Electrification (**LCE**) programs defined under the Electrification Plan Regulation. Accordingly, the expenditures for the LCE programs that are carried out as defined under the Electrification Plan Regulation are not part of this report. BC Hydro will be reporting aspects of its Electrification Plan, including LCE programs defined under the Electrification Plan Regulation, in its next Revenue Requirements Application as required by Directive 6 of the British Columbia Utilities Commission (**BCUC**) Decision

and Order G-91-23 relating to BC Hydro's Fiscal 2023 to Fiscal 2025 Revenue Requirements Application.

A change to note this year is that there are no LCE infrastructure projects as a "prescribed undertaking" under section 4(2) of GGRR as the projects are closed and a Final Report was provided with the fiscal 2023 GGRR Annual Report.

BC Hydro is providing the un-redacted Report to the Ministry and BCUC in confidence. A public version of the Report is being filed under separate cover redacting customer-specific information or information that is commercially sensitive to BC Hydro or our customers.

For further information, please contact the undersigned at bchydroregulatorygroup@bchydro.com.

Yours sincerely,

Chris Sandve
Chief Regulatory Officer

ds/ll

Enclosure

BC Hydro
Power smart

Greenhouse Gas Reduction (Clean Energy) Regulation Reporting

Attachment 1

Business Information and Declaration

Business Information and Declaration

Full Legal and Operating Name	Address Including Postal Code and Email	Telephone
British Columbia Hydro and Power Authority	333 Dunsmuir Street, Vancouver BC V6B 5R3 Email: bchydroregulatorygroup@bchydro.com	604-623-3726
Reporting Period:	April 1, 2023, to March 31, 2024 (Fiscal 2024)	

I understand that the information in this report is collected for the purposes of administering the Greenhouse Gas Reduction (Clean Energy) Regulation under the authority of the *Clean Energy Act* and section 26 of the *Freedom of Information and Protection of Privacy Act*.

I certify that records evidencing each matter reported under the Greenhouse Gas Reduction (Clean Energy) Regulation Reporting Requirements are available on request.

I certify that a record evidencing my authority to submit this report on behalf of the public utility is available on request.

I certify that the information in this report is true and complete to the best of my knowledge, and I understand that I may be required to provide to the Ministry or the Commission records evidencing the truth of that information.

Signature of Authorized Signing Authority	Name and Title of Authorized Signing Authority (please print)	Date Signed YYYY/MM/DD
	Chris Sandve Chief Regulatory Officer	2024/07/10

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Greenhouse Gas Reduction (Clean Energy) Regulation Reporting

Attachment 2

Fiscal 2024 Annual Report No. 7

April 2023 to March 2024

PUBLIC

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1 Executive Summary

This is BC Hydro's seventh annual report regarding its activities that are "prescribed undertakings" as defined in the Greenhouse Gas Reduction (Clean Energy) Regulation (**GGRR**) for the purposes of section 18 of the *Clean Energy Act* (**CEA**). It is provided in accordance with the April 2024 “British Columbia Greenhouse Gas Reduction (Clean Energy) Regulation Reporting Requirements” (**Reporting Requirements**) provided to BC Hydro by the Ministry of Energy, Mines and Low Carbon Innovation (**EMLI**).

This report covers the annual period from April 1, 2023, to March 31, 2024 (**Fiscal 2024 or Reporting Period**) and BC Hydro’s prescribed undertakings under the GGRR in the following three main classes:

(i) Low Carbon Electrification (**LCE**) activities under section 4(3)(a), (b), (c), and (d) of the GGRR (collectively referred to as **LCE Programs**);

(ii) Public Electric vehicle (**EV**) charging stations under section 5 of the GGRR; and

(iii) CleanBC Go Electric Passenger Vehicle Rebate Program (**EV Rebate Program**) under section 5.2 of the GGRR.

On June 27, 2022, the Government of British Columbia issued the Direction to the British Columbia Utilities Commission Respecting Load Attraction and Low-Carbon Electrification (BC Reg. 156/2022) (the “Electrification Plan Regulation”). The Electrification Plan Regulation defines the low-carbon electrification program and sets out the recovery mechanism of costs for the low-carbon electrification program as defined. More specifically, under the Electrification Plan Regulation, BC Hydro can defer to the DSM regulatory account up to $193.7 million in costs incurred during the period beginning April 1, 2021, and ending March 31, 2027, to provide the low-carbon electrification program.

All of BC Hydro's low-carbon electrification activities during this Reporting Period are programs defined under the Electrification Plan Regulation[1] with the exception of $0.75 million in fiscal 2024, which relates to a LCE incentive for one industrial project. This industrial project LCE incentive is a prescribed undertaking under section 4(3)(a) of the GGRR, further described in section 4.2 below. Costs associated with the Electrification Plan and prescribed undertakings are deferred to the DSM Regulatory Account.

During the Reporting Period, BC Hydro continued to construct and operate public EV charging stations, which are prescribed undertakings under section 5 of the GGRR, by adding three new eligible charging sites and 25 fast charging stations to its Public EV Charging Network. At the end of the Reporting Period, there were 169 eligible charging stations at 86 eligible charging sites in BC Hydro's EV Charging Network.

The CleanBC Go Electric Passenger Vehicle Rebate program (**EV Rebate Program**) is a prescribed undertaking under section 5.2(2) of the GGRR, as further described in section 6 below. BC Hydro became responsible for funding, marketing, and administration of the EV Rebate Program in May 2023. During this Reporting Period, BC Hydro has issued $73,330,007 in payments to the New Car Dealers Association of British Columbia (**NCDA**) for EV rebates.

2 The GGRR and Cost Recovery

Section 18(1) of the CEA empowers the Lieutenant Governor in Council to prescribe, by regulation, classes of undertakings for the purpose of reducing greenhouse gas (**GHG**) emissions. Public utilities that choose to engage in undertakings that are within one or more prescribed class of undertaking are assured of being able to

[1] BC Hydro will report on low-carbon electrification programs under the Electrification Plan Regulation to the BCUC pursuant to Directive 6 of Order G-91-23 relating to BC Hydro's F2023 to F2025 Revenue Requirement Application.

recover the costs of the undertaking in their rates and may not be prevented by the BCUC from engaging in the undertakings.

The GGRR was first issued in 2012, and amended in 2017 by adding section 4 to the GGRR to include eight new classes of electrification undertakings, and in 2020 by adding section 5 to the GGRR to include certain public EV fast charging stations as prescribed undertakings.[2] In May 2023, there were further amendments to the GGRR, among others, adding public Level 2 charging stations under section 5(3) and the CleanBC Go Electric Passenger Vehicle Rebate program under section 5.2 (zero-emission vehicle grants) as prescribed undertakings.

One of the legal consequences of the public utility program or project being a "prescribed undertaking" under the GGRR is that the public utility is entitled to recover the costs of the program or project in its rates. That legal consequence is meaningful only if the costs associated with particular programs and projects that are prescribed undertakings can be identified, and thus are accounted for, by the public utility. Accordingly, the prescribed undertakings described in this fiscal 2024 GGRR Annual Report are those programs and projects with recorded costs in fiscal 2024.[3]

Pursuant to BCUC Order No. G-187-21, operating costs, depreciation, and cost of energy amounts related to the deployment and operation of BC Hydro's eligible EV fast charging stations and incurred during fiscal 2022 are deferred to the Electric Vehicle Costs Regulatory Account. As part of the BCUC's decision, directive 63 of BCUC Order No. G-91-23, on BC Hydro's Fiscal 2023 to Fiscal 2025 Revenue Requirements Application, BC Hydro was directed to:

> "Commencing in F2023, and until directed otherwise by the BCUC, defer the actual revenue, including the Low Carbon Fuel

[2] The GGRR was further amended, and these amendments are not particularly relevant to this report.

[3] BC Hydro notes that the costs it incurs with regard to its LCE Programs that are prescribed undertakings are all deferred to the DSM Regulatory Account, pursuant to Direction to the British Columbia Utilities Commission Respecting Undertaking Costs, issued March 1, 2017. Generally, the costs BC Hydro incurs in regard to its LCE infrastructure projects are capitalized.

> Credits revenue, and costs related to its EV fast charging service, including finance costs associated with the EV fast charging capital assets, to the EV Costs Regulatory Account.
>
> Change the name of the EV Costs Regulatory Account to the EV Fast Charging Regulatory Account."

In March 2024, pursuant to BCUC Order No. G-67-24, the BCUC approved changing the name of the EV Fast Charging Regulatory Account to EV Public Charging Regulatory Account to reflect the inclusion of BC Hydro's public Level 2 charging service. All costs continued to be deferred to the EV Public Charging Regulatory Account in fiscal 2024.

As mentioned in section 1, in May 2023, BC Hydro took over the funding, marketing and administration of the EV Rebate Program. The EV Rebate Program is funded by BC Hydro through revenue from the sale of low carbon fuel standard credits (**LCFC**) and is administered through a partnership between EMLI, BC Hydro, and the not-for-profit NCDA. During this Reporting Period, BC Hydro has issued $73,330,007 in payments to the NCDA for EV rebates. Pursuant to BCUC Order No. G-151-24 dated May 29, 2024, costs and revenues related to this program are deferred to the Electric Vehicle Rebate Regulatory Account.

3 State of the Market and Program Planning

3.1 Background

In December 2018, the Government of B.C. launched the CleanBC Plan, which set out a pathway to enable the Government of B.C. to meet its 2030 GHG emission targets. The CleanBC Plan calls for BC Hydro to continue to make investments in our transmission system to make it easier for large industrial operations to access clean electricity.

In the June 2021 Minister's Mandate Letter to BC Hydro, the Minister set out expectations for BC Hydro to make substantive progress on certain priorities, including:

> "provid[ing] leadership in advancing CleanBC's climate and economic development objectives, including electrification, fuel switching, and energy efficiency initiatives in the built environment, transportation, oil and gas, and other sectors."

The Minister also expected BC Hydro to "develop a short-term electrification plan that builds on the key results of the Comprehensive Review of BC Hydro and supports CleanBC," such as "Expanding BC Hydro's network of electric vehicle DC fast-charging stations".

In fiscal 2022, BC Hydro developed its Electrification Plan[4] and began to advance some of the actions included therein. The Electrification Plan describes BC Hydro's actions (as well some of the government programs) that include supporting customer fuel switching over a five-year period starting in fiscal 2022.

The July 2023 Mandate Letter for the Minister of Energy, Mines and Low Carbon Innovation outlines the importance of continuing to work with BC Hydro to implement the Electrification Plan, meet the targets, and 'attract new innovative industries to B.C. and advance the switch from fossil fuels to clean electricity in homes and buildings, vehicles and fleets, businesses and industry.[5]

3.2 State of the Market Discussion

This section presents an overview of the LCE market with respect to BC Hydro's activities leading up to fiscal 2024. Detailed information on the LCE Programs, public

[4] BC Hydro's electric vehicle infrastructure Five-Year Plan – 2025 is available at: https://www.bchydro.com/about/strategies-plans-regulatory/supply-operations/electrification-plan.html.

[5] For clarity, BC Hydro's low-carbon electrification activities during this Reporting Period that were formally planned as activities under the GGRR were undertaken as activities defined under the Electrification Plan Regulation. With one exception being $0.75 million that relates to a LCE incentive for one industrial project which is a prescribed undertaking under section 4(3)(a) of the GGRR,

EV charging stations, and the EV Rebate Program is set out in section 4, section 5, and section 6 respectively below.

Beginning in fiscal 2018, BC Hydro moved forward with eight projects, referred to as Initial LCE Projects, to assess and support immediate LCE opportunities among our customers. These projects were within one (or more) class of undertakings defined in subsections 4(3)(a) and 4(3)(c). These Initial LCE Projects also:

- Helped us gain a greater understanding of the technology, market, and barriers that customers and BC Hydro would face when developing low carbon electrification options; and
- Provided BC Hydro with the ability to act early and capture time sensitive opportunities that could help inform the development of a broader low carbon electrification plan.

The Initial LCE Projects introduced in the GGRR Annual Report filed in July 2018 have been updated in subsequent reports as expenditures were incurred related to those projects. They are also included in Table 2 of this report.

In fiscal 2019, BC Hydro developed and advanced a multi-year BC Hydro funded LCE program that was designed to work in coordination with the Government of B.C.'s programs and is generally referred to as the BC Hydro LCE Program. The BC Hydro LCE Program is further described in section 4 below.

Pursuant to the Reporting Requirements, a report by a Fairness Advisor[6] must be provided on the competitiveness of any call process held during the Reporting Period. Consistent with our DSM process, opportunities for LCE Programs are solicited broadly through BC Hydro's customer and community-facing employees and our existing commercial and industrial energy manager networks. In fiscal 2024,

[6] A Fairness Advisor is an independent consultant who participates in the evaluation and contract award of a contract competition to ensure the procurement activities are conducted in a fair, open, and transparent way.

BC Hydro did not hold any call processes in regard to its LCE Programs or its LCE Infrastructure Projects.[7] Therefore, no Fairness Advisor report is required.

For public EV charging service, BC Hydro is installing charging stations with a variety of power levels to meet different customer needs. In instances where shorter charging time is required to accommodate larger vehicle batteries (such as pickup trucks), BC Hydro is deploying fast charging stations with higher power levels. BC Hydro plans to ramp up Level 2 charging station deployment in appropriate sites, such as public transit hubs where customers are parked for longer periods; to install more dual port chargers, which provide two ports at a lower cost than two single port chargers; and to retrofit charging stations to accommodate North American Charging System (**NCAS**) connectors in fiscal 2025 and fiscal 2026.

British Columbia continues to lead Canada in EV adoption. In 2023, zero-emission vehicles (**ZEV**s) accounted for 22.65% of new light-duty passenger vehicles[8] sold in B.C.[9] In addition to ongoing education and awareness about the benefits of ZEV ownership, the sales of ZEVs can be contributed to rebates encouraging ZEV uptake with the EV Rebate Program, along with increased access to charging stations in places where people live, work, and socialize.

3.3 Government of B.C. Programs

In fiscal 2019, BC Hydro became responsible for delivering offers within the added CleanBC Better Buildings program on behalf of the Government of B.C. The program, which was initially called EfficiencyBC with funding provided by the federal

[7] BC Hydro uses a range of procurement methods to meet our needs, and details of these methods are described in detail at: https://www.bchydro.com/work-with-us/suppliers/doing-business-with-bchydro.html.

[8] Light-Duty Vehicle: A passenger vehicle, including cars, sport utility vehicles, vans, and light pick-up trucks with a gross vehicle weight rating of 3,856 kg or less: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/bc_public_ld_zev_infrastructure_study_final_20210505.pdf.

[9] The Government of B.C.'s Annual Report for 2023 (calendar year): https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/2023_zero-emission_vehicle_update.pdf.

and provincial government, is now named the CleanBC Better Buildings and CleanBC Better Homes programs. These programs are funded by the provincial government and provide financial incentives to help households and businesses save energy and reduce GHG emissions by switching to high efficiency heating equipment and making building envelope improvements. BC Hydro is currently delivering the components of the CleanBC Better Buildings and Better Homes programs on behalf of the Government of B.C. that helps customers switch from fossil fuels to clean electricity.

In fiscal 2020, BC Hydro became responsible for delivering the Government of B.C.'s Go Electric EV Charger Rebate Program. The program provides rebates toward the cost of the purchase and installation of eligible Level 2 EV charging equipment and supports multi-unit residential buildings and workplaces seeking solutions for their EV charging needs. The government program influences what programs BC Hydro funds as it seeks to align with and complement the programs and projects funded by the Government of B.C. BC Hydro's programs that complement the provincial CleanBC programs are discussed in section 4 below.

In fiscal 2021, the Government of B.C. launched three new CleanBC programs. The CleanBC Indigenous Community Energy Coaching program provides free energy coaching services to support Indigenous communities wanting to take advantage of the CleanBC Indigenous Community Heat Pump Incentive and related energy efficiency offers. The CleanBC Better Homes New Construction program provides rebates for the construction of new, high-performance, electric homes. The CleanBC Commercial Express Program provides support to building owners and operators who wish to reduce GHG emissions in their existing commercial buildings. The program targets simple, smaller electrification opportunities across commercial and institutional buildings.

3.4 Public Electric Vehicle Charging Stations

At the beginning of fiscal 2024, BC Hydro had 141 public EV fast charging stations (and three Level 2 stations)[10] in operation at 83 sites across the province. During fiscal 2024, BC Hydro continued to build out its public EV charging network, by deploying an additional 25 eligible fast charging stations. At the end of fiscal 2024, BC Hydro had 166 eligible fast charging and three Level 2 stations in operation at 86 sites.

All of BC Hydro's public EV charging stations deployed in this Reporting Period are in compliance with requirements of section 5 of the GGRR, as further discussed in section 5 below.

In July 2023, BC Hydro filed its Public EV Charging Service Rates Application with the BCUC. This application included an updated 10-year deployment plan which aims to grow BC Hydro's Public EV Charging Network to approximately 3,000 public charging ports by 2030.

3.5 CleanBC Go Electric Passenger Vehicle Rebate Program

This is the first time we report on the CleanBC Go Electric Vehicle Rebate Program in this report. The EV Rebate Program is administered through a partnership between EMLI, BC Hydro, and the not-for-profit NCDA. The NCDA is an association of new car dealerships with an interest in the adoption of ZEVs within British Columbia and delivers vehicle point of purchase rebates for customers of its member dealerships that purchase ZEVs. British Columbia had the highest uptake of ZEVs in all of Canada. As of December 31, 2023, there were 150,000 ZEVs registered in B.C.[11] At the end of fiscal 2024, BC Hydro had paid out $73,330,007 for

[10] Level 2 charging stations were not included in the GGRR Annual Report until this year. The three Level 2 charging stations were built in 2018 and 2019 and we have included them in the 2024 GGRR Annual Report.

[11] The Government of B.C.'s Annual Report for 2023 (calendar year): https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/transportation/2023_zero-emission_vehicle_update.pdf.

a total of 21,371 applications to the not-for-profit NCDA. Further discussion on the progress of this program is found in section 6 below.

4 LCE Programs

4.1 Overview

There are eight classes of electrification undertaking prescribed by section 4 of the GGRR, which can be divided into two broad categories: (i) those that are program based, similar to BC Hydro's demand-side management programs;[12] and (ii) those that are infrastructure based.[13] BC Hydro refers to all the prescribed undertakings it carries out under section 4 of the GGRR as LCE activities, and further refers to its undertakings that fall within one of the classes in the former category as LCE Programs, and to its undertakings that fall within one of the classes in the latter category as LCE Infrastructure Projects. This nomenclature corresponds to the "Electrification Programs" referred to in subsection 6.5 of the GGRR Reporting Requirements, and "Transmission, Distribution and Generation" referred to in subsection 6.6 of the GGRR Reporting Requirements, respectively.

As discussed above in section 3.3, BC Hydro has delivered the CleanBC Better Buildings and CleanBC Better Homes programs on behalf of the Government of B.C. since fiscal 2019. In fiscal 2019, to complement the Government of B.C.'s programs, BC Hydro developed and advanced a multi-year BC Hydro funded LCE Program to reach customers and to enable opportunities not covered by greenhouse gas emissions reduction programs funded by the Government of B.C. or the federal

[12] Being the classes of undertaking prescribed by subsections 4(3)(a)(i), 4(3)(a)(ii), 4(3)(b)(i), 4(3)(b)(ii), 4(3)(c) and 4(3)(d) of the GGRR. Undertakings can be both projects or programs. For simplicity, BC Hydro may refer to projects under these sections as programs as well or use projects/program interchangeably.

[13] Being the classes of undertaking prescribed by subsections 4(2) and 4(3)(e) of the GGRR.

government,[14] focusing on opportunities in industrial process, transportation, and new construction.

In fiscal 2020, the Government of B.C., working in co-ordination with BC Hydro, decided to add a CleanBC program for new construction. The introduction of this new program prompted BC Hydro to re-consider the funding originally included within the multi-year BC Hydro LCE Program. BC Hydro decided to apply funds originally intended for supporting new construction opportunities to supporting additional energy management study and implementation opportunities for industrial and large commercial customers.

In fiscal 2021, as part of BC Hydro's multi-year LCE Program, BC Hydro undertook activities as prescribed undertakings under section 4(3)(a), section 4(3)(b), and section 4(3)(d) of the GGRR.

Prior to this Reporting Period and as reported in previous reports, BC Hydro's activities in the LCE Program were "prescribed undertakings" as set out in section 4 of the GGRR. Subsequent to the issuance of the Electrification Plan Regulation in June 2022, all of BC Hydro's low-carbon electrification activities in this Reporting Period were undertaken as low-carbon programs defined in the Electrification Plan Regulation and the associated costs will be recovered in accordance with the mechanism set out in that Regulation, with the exception of $0.75 million in fiscal 2024 which relates to a LCE incentive for one industrial project (Project 4, as discussed below). Any low-carbon programs, with the exception of Project 4, defined under the Electrification Plan Regulation are not reported in the GGRR Annual Report as BC Hydro does not undertake them as a prescribed undertaking defined under the GGRR and does not recover costs pursuant to section 18 of the *Clean Energy Act*. BC Hydro will report to the BCUC its Electrification Plan programs,

[14] This multi-year program is also referred to as the "BC Hydro LCE Program" to distinguish it from the programs funded by the Government of B.C.

including low-carbon electrification programs, in accordance with Directive 6 of Order G-91-23.

4.2 Fiscal 2024 LCE Programs

In fiscal 2024, BC Hydro spent a net amount of $0.75 million related to a low-carbon electrification incentive for one industrial project. This incentive was for a multiphase project which was introduced as an Initial LCE Project in the GGRR Annual Report filed in July 2018 and has been updated in subsequent reports as expenditures were incurred. This project was undertaken as a prescribed undertaking under section 4(3)(a) of the GGRR.

Consistent with the Reporting Requirements, one large upstream natural gas project has been described at a project level.

[redacted] (**Project 4** in Table 2): BC Hydro has an LCE Incentive Agreement for the [redacted] site. This project is interconnected to BC Hydro transmission line [redacted] in Northeastern B.C. There are multiple project phases. This project is an undertaking within the class of prescribed undertakings set out in section 4(3)(a) of the GGRR. Project 4 was energized in fiscal 2019 and the first two phases achieved Facility Commercial Operating Date (**COD**) in fiscal 2020 in accordance with the LCE Incentive Agreement. A third phase achieved Facility COD in fiscal 2022. The fourth and final phase achieved Facility COD in fiscal 2024, BC Hydro paid a low-carbon electrification incentive of $0.75 million for this phase (shown in Row 6 of Table 2).

4.3 Methodology and Verification Methods

Depending on individual projects or programs within the LCE Programs, there can be up to four distinct activities that BC Hydro may use to review and verify estimates of incremental electrical load and emission reductions arising from electrification. These are: (i) technical review; (ii) site inspection; (iii) measurement and verification;

and (iv) evaluation. Results from each area may be used in project or program management to ensure that BC Hydro receives the expected benefits. BC Hydro is selective in the use of these processes, and focuses its efforts where warranted to improve the accuracy of estimates and reduce exposure to risk. This approach mirrors BC Hydro's current approach to demand-side management electricity savings and provides estimates for both additional electricity demand and GHG emission reductions.

The GHG emission reduction estimates are developed as part of the technical review for each project or program application and may be adjusted based on the outcome of site inspections and the electricity demand findings resulting from the measurement and verification activities.

In the earlier years of the LCE Program, the methodology BC Hydro used to estimate GHG emission reductions involved developing engineering estimates of the amount of carbon-based fuel that will be offset by electricity and quantifying the associated GHG emission reductions using the 2017 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions. The calculation nets out the GHG emissions associated with BC Hydro's electricity, which are also quantified using the 2017 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions. The LCE Program continued to evolve overtime and in fiscal 2020 switched to the integrated emissions intensity factors to be consistent with the rest of BC Hydro in GHG reporting methodology.[15] Although integrated emission factors can change yearly, BC Hydro does not change project estimates retroactively and continues to use the factors assigned at project application.

This estimate may differ from actual GHG emission reductions as determined by the customer specific to their unique electrification project(s). Where an actual value has been provided to BC Hydro by the customer or reported by the customer to the

[15] https://www2.gov.bc.ca/gov/content/environment/climate-change/industry/reporting/quantify/electricity.

government through an Industrial Emissions Report, BC Hydro will show the customer-reported value in Column H (i) of Table 2. BC Hydro may also conduct a technical review of baselines, calculations, and assumptions used to determine the GHG reductions in the Industrial Emissions Report. Any changes to the value reported in a previous reporting period will be reflected in the cumulative values in Column H (ii) of Table 2. The methodology used for typical electrical energy impact calculations for LCE projects is as follows:

- Total annual energy consumption = facility baseline electricity consumption + incremental LCE electricity consumption +/- baseline energy adjustments; and
- Total average monthly electrical demand = baseline average monthly electrical demand + incremental LCE average monthly electrical demand +/- baseline demand adjustments.

Baseline adjustments are determined based on any net baseline energy consumption impacts that may be a result of the LCE project.

4.4 Performance Metrics

Performance measurement for BC Hydro's LCE programs and projects ultimately is reflected in decisions made by customers or those who may become customers to use electricity instead of other sources of energy that produce more GHG emissions.

Performance measured using the measurement and verification methodologies described in section 4.3, provides a view of electrical consumption, demand, and GHG emission reductions.

4.5 Cost-Effectiveness

Under section 4(4) of the GGRR, undertakings are in the class of undertakings prescribed by sections 4(3)(a) or 4(3)(b) of the GGRR only if they satisfy a cost-effectiveness test. The cost effectiveness calculation for the purposes of section 4(4) of the GGRR is done by calculating the present value of the benefits and costs of all the undertakings meeting the criteria of either section 4(3)(a) or section 4(3)(b), using a discount rate equal to BC Hydro's weighted average cost of capital over a period that ends no later than a specified year. The GGRR cost-effectiveness test is measured only at the time BC Hydro decides to carry out the program.

Table 2 shows the GGRR net present value (**NPV**) of the various LCE projects or programs meeting the requirements of section 4(3)(a) and 4(3)(b) of the GGRR. The total GGRR NPV of these undertakings is $106.5 million, which includes actual and committed expenditures and benefits from past, current, and future reporting periods. The GGRR NPV indicates that these undertakings are cost-effective.

4.6 Summary of Results

4.6.1 Explanation of Terms

Table 1 below includes a description of the information provided in Table 2 with regard to the LCE Programs.

Table 1 LCE Programs Results Table: Explanation of Terms

Column	Heading	Descriptions
A	GGRR	Applicable section of the GGRR.
B	Project / Program / Contract / Expenditure	Low-carbon electrification activities to encourage or enable the use of electricity in place of other sources of energy that produce more GHG emissions.
$C_{(i)}$	Actual Expenditure ($ million)	Costs incurred at the end of the current reporting fiscal year.
$C_{(ii)}$	Cumulative: Actual Expenditures ($ million)	The sum of successive costs incurred as at the end of the reporting fiscal year.
D	Cost Effectiveness ($ million): NPV to 2030 (fiscal 2031)	The present value of the costs and benefits are determined using a discount rate equal to BC Hydro's weighted average cost of capital. The present value of the costs is subtracted from the present value of the benefits from the project start year to last year in the calculation period (fiscal 2031) to determine the net present value for the project.
E	Cost Effectiveness ($ million): GGRR NPV to 2030 (fiscal 2031)	The calculation of the GGRR NPV is based on costs and benefits as of fiscal 2018 as defined in the GGRR. Per that definition, benefits mean all revenues BC Hydro expects to earn as a result of implementing LCE programs falling under subsections 4(3)(a) or 4(3)(b), less revenues that would have been earned from the sale of that electricity to export markets. Costs mean all the costs BC Hydro expects to incur to implement LCE programs falling under subsections 4(3)(a) or 4(3)(b), including development and administration costs. For clarity, costs include historic and future cost, committed expenditures and benefits from past, current and future reporting periods.
$F_{(i)}$	Actual: Additional Energy Consumption (MWh/year)	The average annual additional energy consumption estimated to be delivered from the project in the current reporting fiscal period.
$F_{(ii)}$	Cumulative: Additional Energy Consumption (MWh/year)	The sum of the successive average annual additional energy consumption estimated to be delivered from the project as at the end of the reporting fiscal period.
$G_{(i)}$	Actual: Additional Capacity Demand (MW)	The total energy demand added.
$G_{(ii)}$	Cumulative: Additional Capacity Demand (MW)	The sum of the successive energy demand addition.
$H_{(i)}$	Actual: Estimated GHG Emission Reductions (tonnes CO_2e/year)	The average annual tonnes per year of carbon dioxide equivalent reductions from the project in the current reporting fiscal period.
$H_{(ii)}$	Cumulative: Estimated GHG Emission Reductions (tonnes CO_2e/year)	The sum of the successive additional average annual tonnes per year of carbon dioxide equivalent reductions from the project as at the end of the reporting fiscal period.

4.6.2 Results Table

Table 2 below summarizes information regarding the LCE Programs that are prescribed undertakings under sections 4(3)(a)(i), 4(3)(a)(ii), 4(3)(b)(i), 4(3)(b)(ii), 4(3)(c) and 4(3)(d) of the GGRR. Attachment 3 provides an excel spreadsheet with annual expenditures, in total and by project, study, or program, as outlined in the GGRR Reporting Requirements.

The Reporting Requirements also request graphical depictions (e.g., pie charts or bar charts) of the distribution by region in the Government of B.C. and the distribution by customer sector where possible. In fiscal 2024, BC Hydro undertook a single project as a prescribed undertaking under the GGRR. Accordingly, BC Hydro determined that a graphical depiction would not be meaningful to include in this report.

Table 2 LCE Programs Results for Year Ending March 31, 2024

	A	B			C		D	E	F		G		H	
	GGRR	**Project / Program / Contract / Expenditure[i]**	**Municipality / Location**	**Start Date[ii]**	**Expenditure ($ million)**		**Cost Effectiveness (F2018$ million)**		**Additional Energy Consumption[iii] (MWh/year)**		**Additional Demand (MW)**		**Estimated GHG Emission Reductions (tonnes CO_2e/year)**	
					Actual F2024 (i)	**Cuml. F2018-F2024(ii)**	**NPV to 2030 (F2031)**	**GGRR NPV to 2030 (F2031)**	**Actual F2024 (i)**	**Cuml. F2018-F2024 (ii)**	**Actual F2024 (i)**	**Cuml. F2018-F2024 (ii)**	**Actual F2024 (i)**	**Cuml. F2018-F2024 (ii)**
1	4(3)(c)	Vancouver Fraser Port Authority	Vancouver	Fiscal 2018	0.00	0.07	0.0	0.0	0	0	0.0	0.0	0	0
2	4(3)(c)	[redacted] (Project 1)[iv]	[redacted]	Fiscal 2018	0.00	0.00	0.0	0.0	0	0	0.0	0.0	0	0
3	4(3)(c)	[redacted] (Project 2)[4]	[redacted]	Fiscal 2018	0.00	0.01	0.0	0.0	0	0	0.0	0.0	0	0
4	4(3)(c)	BC Hydro Program Staff Labour			0.00	0.12	0.0	0.0	0	0	0.0	0.0	0	0
5	4(3)(a)	[redacted] (Project 3)	[redacted]	Fiscal 2018	0.00	8.88	64.3	64.3	0	156,366	0.0	21.0	0	93,493
6	4(3)(a)	[redacted] (Project 4)	[redacted]	Fiscal 2018	0.75	11.60	45.9	110.2	14,892	202,874	2.0	27.2	8,904	121,301
7	4(3)(a)	Thompson Rivers University	Kamloops	Fiscal 2018	0.00	0.21	0.3	110.5	0	1,129	0.0	0.6	0	229
8	4(3)(c)	Copper Mountain Mine	Princeton, Southern Interior	Fiscal 2018	0.00	0.07	0.0	110.5	0	0	0.0	0.0	0	0
9	4(3)(c)	Translink	Lower Mainland	Fiscal 2018	0.00	0.50	0.0	110.5	0	1,254	0.0	0.8	0	215
10	4(3)(a)(b)	BC Hydro LCE Program[v,vi]	Province-wide	Fiscal 2019	0.00	6.33	-4.0	106.5	0	6,145	0.0	1.1	0	3,995
11	4(3)(c)	BC Hydro LCE Program[8]	Province-wide	Fiscal 2019	0.00	0.44	0.0	106.5	0	0	0.0	0.0	0	0
12	4(3)(d)	BC Hydro LCE Program[8]	Province-wide	Fiscal 2019	0.00	1.44	0.0	106.5	0	0	0.0	0.0	0	0
		Total			**0.75**	**29.67**	**106.5**	**106.5**	**14,892**	**367,768**	**2.0**	**50.8**	**8,904**	**219,233**

1

[i] LCE Programs shown in the table include both LCE Initial Projects (rows 1 to 9) and associated expenditure and the BC Hydro LCE Program (rows 10 to 12). LCE Initial Projects are reported individually. With the introduction of the BC Hydro LCE Program individual project expenditures have been aggregated.

[ii] The Start Date is the fiscal year that BC Hydro decided to proceed with the project or program.

[iii] Values reported in column F represent the 'run rate' or annualized rate of additional energy consumption.

[iv] Projects 1 and 2 were described in the fiscal 2018 Annual Report filed in July 2018.

[v] BC Hydro notes that the costs it incurs with regard to the BC Hydro LCE Program up to April 1, 2021, are carried out as prescribed undertakings and all costs after this date are carried out as part of the LCE programs described in the Electrification Plan Regulation. Subsequently, these costs will be reported as outlined in Directive 6 by the BCUC in their Decision and Order G-91-23.

[vi] The BC Hydro LCE Program NPV to 2030 (fiscal 2031) in row 10 represents project and program costs carried out as prescribed undertakings under the GGRR. A number of projects that were previously reported in this NPV are now carried out within the Electrification Plan and are no longer reported as prescribed undertakings under the GGRR. The projects remaining in the NPV are cost effective individually, but the NPV is negative because they do not provide enough benefits to offset the remaining fixed program costs.

5 Public Electric Vehicles Charging Stations Program

5.1 Overview

BC Hydro constructed and operated public EV fast charging stations prior to the enactment of section 5 of the GGRR, commencing with the installation of the first charging station in 2013.

All of the charging stations in BC Hydro's EV charging network meet the requirements of section 5 of the GGRR. That is, all charging stations (eligible fast charging stations and eligible Level 2 charging stations):

- Are available to the public during the site's hours of operation;
- Do not require users to be a member of a charging network to initiate a charging session;
- Are capable of charging electric vehicles of more than one make; and
- Use Open Charge Point Protocol.

BC Hydro's public fast charging stations meet the specific requirements for fast charging stations:

- BC Hydro constructs and operates, or purchases and operates, an eligible fast charging station;
- BC Hydro reasonably expects, on the date BC Hydro decides to construct or purchase an eligible fasting charging stations, that:
    - The station will come into operation by December 31, 3030, and
    - If the station will be located in a limited municipality, on the date the station will come into operation will not exceed the site limit for the municipality on that date;

- If an eligible public fast charging station comes into operation on or after January 1, 2022, the station uses or is configured to use the Open Charge Point Protocol.

BC Hydro's Level 2 chargers also meet the additional specific requirements for Level 2 charging stations:

- They are fixed devices capable of charging an electric vehicle using 240V;
- They share a site with an eligible fast charging station or is on a site owned a public utility, the Government of B.C., the Government of Canada, an agency of the government or Government of Canada, a government body as defined in section 1 of the *Financial Administration Act*, or local authority as defined in section 1 of the Schedule to the Community Charter;
- BC Hydro constructs and operates, or purchases and operates, an eligible Level 2 charging station; and
- BC Hydro reasonably expects, on the date the public utility decides to construct or purchase the eligible Level 2 charging station, that the station will come into operation by December 31, 2030.

As Table 3 shows, for fast charging stations added to BC Hydro's EV charging network in fiscal 2024, either the site limit is not applicable because the stations are not located in a limited municipality, or the number of eligible charging sites within the limited municipality did not exceed the site limit in that municipality on the date the charging station was put into operation.

Table 3 Eligible Fast Charging Stations Added - Fiscal 2024

Location/Site	Site In-Service Date	Number of Additional EV Fast Charging Sites	Number of Additional EV Fast Charging Stations	Limited Municipality?
Burnaby	14-Apr-23	1	2	Yes
Maple Ridge	23-Nov-23	1	2	Yes
Tumbler Ridge	23-Feb-24	1	2	No
Boston Bar	3-May-17	0	1	No – expansion of existing site
Chase	12-Mar-16	0	1	No – expansion of existing site
Coquitlam - Superstore West	1-Mar-18	0	2	Yes – expansion of existing site
Cranbrook	18-Jan-17	0	1	Yes – expansion of existing site
Langley	3-Apr-17	0	1	Yes – expansion of existing site
Manning Park	8-Apr-16	0	2	No – expansion of existing site
Merritt	23-Mar-18	0	1	No – expansion of existing site
Nakusp	18-Nov-22	0	1	No – expansion of existing site
Port Hardy	15-Oct-19	0	1	No – expansion of existing site
Radium	3-Jul-17	0	1	No – expansion of existing site
South Delta	22-Nov-19	0	3	Yes – expansion of existing site
Surrey - Cloverdale	26-Jan-19	0	2	Yes – expansion of existing site
Surrey - South Surrey	1-May-18	0	2	Yes – expansion of existing site
Total		**3**	25	

5.2 Approach

BC Hydro has developed an approach to evaluating that there is a reasonable expectation that the number of eligible charging sites in the municipality on the date the station will come into operation will not exceed the site limit for the municipality on that date. This evaluation is done in order to decide to construct or purchase a public EV fast charging station in a limited municipality.

- **Date of Decision to Construct or Purchase** - For BC Hydro, the date the public utility decides to construct or purchase an eligible charging station is the date the Engagement Letter is sent to the site host. This is a change this year

to ensure that prior to entering into negotiations regarding a specific site, GGRR municipal site limits are not already met; and

- **Site Limit** – BC Hydro determines limited municipalities and EV charging site limits based on BC Government Local Government Boundary maps[16] and BC Stats Municipal Population Projections[17] for the year in which the construction or purchase decision is being made. The number of fast charging sites in a limited municipality is determined based on the Electric Charging and Alternative Fuelling Stations Locator[18] published by Natural Resources Canada.

Other notes regarding BC Hydro's compliance:

- **No Requirement of Membership** - BC Hydro offers a one-time credit card payment service that is free of any network membership requirements. Customers use their smart phone to scan a QR code that takes them to a web portal to process a credit card payment for the charging session;
- **Capability to Charge More Than One Vehicle Make** - All BC Hydro's charging stations use industry open standard charger/car interfaces which support most makes and models of electric vehicles;
- **Open Charge Point Protocol** – BC Hydro's EV charging network management system operates on Open Charge Point Protocol (OCPP 1.6J); and
- **Level 2 Charging Stations Co-Location** – All three of BC Hydro's Level 2 charging stations are currently co-located within fast charging station sites.

16 https://www2.gov.bc.ca/gov/content/governments/local-governments/facts-framework/local-government-maps.

17 https://bcstats.shinyapps.io/popApp/.

18 https://natural-resources.canada.ca/energy-efficiency/transportation-alternative-fuels/electric-charging-alternative-fuelling-stationslocator-map.

5.3 Summary of Results

During the Reporting Period from April 1, 2023, to March 31, 2024, BC Hydro constructed three new EV charging sites and commissioned 25 EV fast charging stations.

Of the 25 fast charging stations, six were installed at BC Hydro's new sites (two stations per site), nine were deployed at four high usage urban sites to create the first quad sites in the network, and 10 were deployed at sites that only had a single fast charging station.

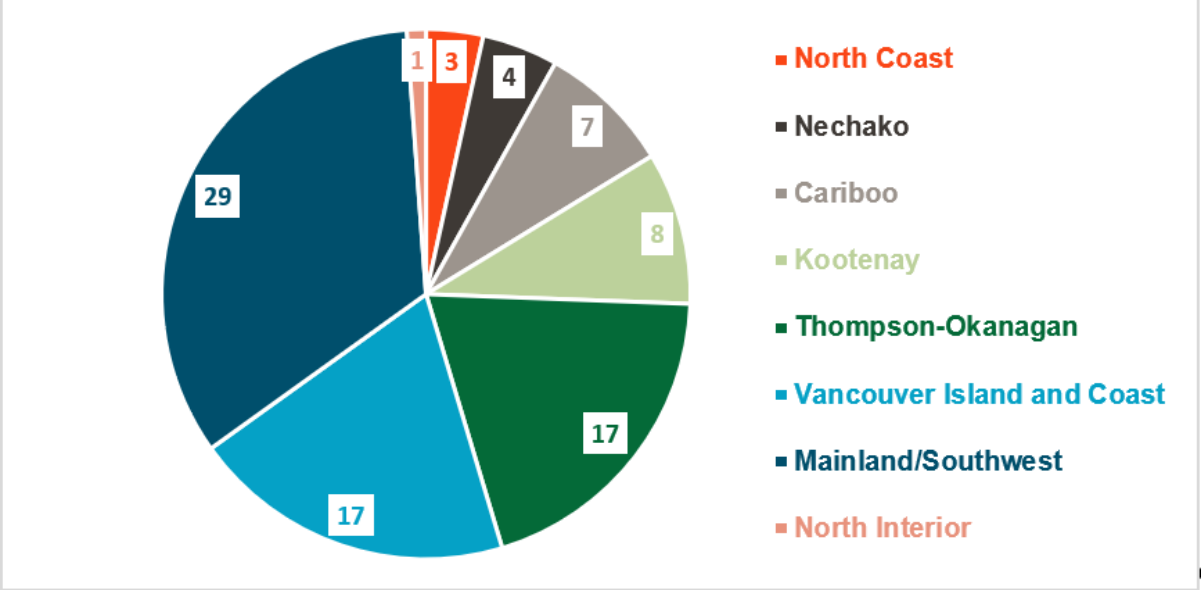
BC Hydro introduced dual port fast charging stations to its EV charging network for the first time in fiscal 2024. These charging stations can deliver up to 90kW to two vehicles simultaneously, increasing the comparative importance of port counts over charging station counts. In fiscal 2025, BC Hydro will be changing its reporting to be based on port count rather than charging station count. For this reporting period both charging station and port counts have been provided.

As of March 31, 2024, BC Hydro operated 86 public EV charging sites across the province. Additionally, 166 public EV fast charging stations (with a total of 170 fast charging ports) are in operation. At three sites we also provide customers with the option of Level 2 charging, with a single Level 2 charger, which supports all makes and models of electric vehicles by using a J1772 connector.

Appendix 1 to Attachment 2 identifies each of BC Hydro's 86 eligible charging sites as of March 31, 2024, along with the Economic Development Region they are located in and the additional charging station, port, session, and consumption data requested. Cumulative stations and ports for April 1, 2020, to March 31, 2024 have been provided as a snapshot in time as of March 31, 2024.

The distribution of public EV charging sites by Economic Development Region is provided in Figure 1 below.

Figure 1 Distribution of Eligible Charging Sites by Economic Development Region



6 CleanBC Go Electric Passenger Vehicle Rebate Program

6.1 Program Overview

The CleanBC Go Electric Passenger Vehicle Rebate Program encourages zero-emission vehicle adoption by residents in British Columbia. As discussed in section 2, in May 2023, the government amended the Greenhouse Gas Reduction Regulation by adding section 5.2 (zero-emission vehicle grants) that makes a public utility's expenditures for the grants for certain zero-emission vehicle purchases or leases a prescribed undertaking for the purposes of section 18 of the *Clean Energy Act*.

In June 2023, BC Hydro started to provide the funding, marketing, and administration of the EV Rebate Program as a prescribed undertaking. The EV Rebate Program is funded by BC Hydro through the sale of LCFCs and is administered through a partnership between EMLI, BC Hydro, and the not-for-profit

NCDA. The NCDA is an association of new car dealerships with an interest in the adoption of zero-emission vehicles within British Columbia and delivers vehicle point of purchase rebates for customers of its member dealerships that purchase ZEVs.

Section 5.2 of the GGRR set outs the prescribed undertakings for ZEV grants, which are the public utility providing grants for purchase or lease of new light-duty ZEV by individuals in B.C. or persons (other than specified government bodies) operating in B.C., subject to a cap on the amount of total expenditures other than those on administration and marketing, and expenditures by the public utility for administration and marketing in relation to the undertaking of not more than $2.5 million.

The EV Rebate Program meets the specific requirements of section 5.2 of the GGRR by:

- Providing grants for those who purchase or lease in British Columbia a new ZEV that is a light-duty vehicle, including an individual who is a resident in B.C. or a person (other than the excluded government bodies specified under subsection 5.2 (3)) who operates in B.C., if the person registers and licenses the vehicle in accordance with the Motor Vehicle Act and insures the vehicle under a motor vehicle liability policy that is valid for a period of 12 months;
- Expenditures on administration and marketing in relation to the undertaking, in each fiscal year of the public utility, not exceeding $2.5 million (see Table 4 below); and
- Total expenditures on the undertaking, other than expenditures on administration and marketing, not exceeding: (i) 75% of the average market

price published by the Province for LCFC multiplied by (ii) the number of "specified credits" sold each fiscal year.[19,20]

6.2 Summary of Results

In 2023, 22.65% of new vehicle sales were ZEVs, which is up from 18% in 2022. This increase in sales could be attributed to rebates encouraging ZEV uptake, along with access to charging stations in places where people live, work, and socialize, in addition to ongoing education and awareness about the benefits of ZEV ownership.

Table 4 below provides the information outlined as required by the reporting requirements in section 6.10 of the GGRR Reporting Requirements.

6.2.1 Table 4 Program Results

Table 4 Detailed Incentive Program Results

April 1, 2023, to March 31, 2024	Cumulative April 1, 2023, to March 31, 2024	Expenditures on Administration and Marketing April 1, 2023, to March 31, 2024	Number of Grants Provided
$73,330,007[21]	$73,330,007	$484,259	21,371

6.2.2 Expenditures

Expenditures in a reporting period are for rebates paid, administration, and marketing costs. Financial statements are provided by the NCDA detailing the financial expenditures during the month. BC Hydro reviews and tracks the financials on a monthly basis to ensure costs are within the program budget.

[19] Further to subsection 5.2 (2)(c) read with subsection 5.2(4) total expenditures on the undertaking must not exceed, for each fiscal year from 2022 onwards, the sum of (i) the number of specified credits transferred away by the public utility in the fiscal year, and (ii) the adjusted average price for the fiscal year.

[20] [redacted]

[21] Rebates paid.

BC Hydro
Power smart

Greenhouse Gas Reduction (Clean Energy) Regulation Reporting

Attachment 2

Fiscal 2024 Annual Report No. 7

April 2023 to March 2024

Appendix 1

Electric Vehicle Fast Charging Station Program Information as of March 31, 2024

PUBLIC

CONFIDENTIAL APPENDIX

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