



**Verified Carbon
Standard**

ACCELERATING THE ADOPTION AND USE
OF ELECTRIC VEHICLES



Bridge to Renewables, Inc.

Document Prepared by Bridge to Renewables, Inc.

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1 PROJECT DETAILS

1.1 Summary Description of the Project

Under this project activity, Bridge to Renewables, Inc. (BTR) will work with electric vehicle (EV) manufacturers (EV Original Equipment Manufacturers or EV OEMs) to help accelerate the adoption and optimal use and charging of EVs. The use and charging of EVs reduces greenhouse gas (GHG) emissions relative to an assumed baseline of comparable-model internal combustion engine (ICE) vehicles. The use and charging of EVs may therefore generate emissions reductions/ removals (ERRs) under VM0038.

BTR will measure the emissions reductions through the collection of accurate and precise data using an existing proprietary technology platform (the BTR Bridge platform). BTR will aggregate EV telematics data from participating EV OEMs, which BTR will then use to calculate GHG emissions reductions. BTR's technology enables the precise and accurate measurement of the GHG impact because each participating EV's telematics systems collect data on the location, time, and amount of electricity used during each charging event, which BTR then uses to determine the carbon intensity of the relevant electric grid during each charging event compared to the baseline of a comparable-model ICE vehicle.

Importantly, BTR's technology allows it to (a) conservatively filter out charging events which occur at EV charging stations that are or could become part of another VM0038 project; and (b) exclude EV charging events which are located in jurisdictions that have existing GHG-reduction programs. For example, BTR will exclude any charging that occurs in California, Washington, or Oregon. This functionality will eliminate the risk of double-counting. This technology also enables charging events to be captured and filtered by charging type – e.g. residential vs non-residential or public – and across all types of chargers (e.g. L2 and DCFC).

BTR will act as the project proponent for this grouped project and undertake all of the monitoring and data collection required under VM0038. The project instances are located across the continental United States, with the initial exceptions included in Section 1.12 below. The ERRs representing the emissions reductions are generated by the use and charging of EVs. Transfer of the ownership of the ERRs is established through contractual terms and conditions of service.

During the course of the crediting period, BTR estimates that 2,508,916 tons of CO₂ (tCO₂) will be reduced or an annual average of 250,892 tCO₂. In the absence of this project, fewer EVs would displace the sale and use of ICE vehicles, fewer EV drivers would be informed about the GHG intensity of their charging and, therefore, fewer EV drivers would optimize their charging for GHG reductions.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	01-January-2022--31-December-2031	VCS	SCS Global Services	Ten years

1.3 Sectoral Scope and Project Type

The Project activity includes EV charging and falls within both Sectoral Scope 1 – Energy (renewables/non-renewables), as well as Sectoral Scope 7 – Transportation.

The Project is a grouped project.

Sectoral scope ¹	Scope 1 – Energy (renewables/non-renewables); Scope 7 – Transportation
Project activity type	Reduction of light-duty vehicle transportation emissions

1.4 Project Eligibility

1.4.1 General eligibility

The project meets all the criteria set out in the VCS Program Guide, the VCS Standard and the VM0038 methodology approved under the VCS program. The project will help accelerate the adoption and optimal use of EVs and thus involves the displacement of ICE vehicles with EVs.

Section 2.1 of the VCS Standard (v4.7) lays out the scope of the VCS program, including the following:

- 1) The six Kyoto Protocol GHGs (this project will reduce CO₂ as explained in Section 4 of this document)
- 2) Ozone-depleting substances (not applicable)
- 3) Project activities supported by a methodology approved under the VCS Program through the methodology approval process (this project will use VM0038 as explained in Section 3 of this document)

¹ Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: <https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes>.

4) Project activities supported by a methodology approved under an approved GHG program (not applicable as this is using a Verra methodology)

5) Jurisdictional REDD+ programs and nested REDD+ projects as set out in the VCS Program document Jurisdictional and Nested REDD+ (not applicable).

Section 2.1 of the VCS Standard also outlines a number of excluded project types, such as HFC-23. None of these apply to this particular project activity.

The project description was submitted to Verra on 3/16/2023, followed up by proof that we had contracted with SCS Global, Inc. as our validation and verification body (VVB). On 5/17/2023, Verra listed the project as “under validation,” and opened a public comment period that lasted from 5/17/2023-6/16/2023. We held the opening meeting with SCS on 8/2/2023 and SCS conducted a site visit on 9/26/2023.

1.4.2 **AFOLU project eligibility**

Not applicable as the Project is a non-AFOLU project

1.4.3 **Transfer project eligibility**

Not applicable as the Project is not a transfer project.

1.5 **Project Design**

Indicate if the project has been designed as:

- ☐ Single location or installation
- ☐ Multiple locations or project activity instances (but not a grouped project)
- ☒ Grouped project

1.5.1 **Grouped project design**

As a grouped project, additional EV OEMs and associated EV charging can be included as new project activity instances as long as these are operating within BTR's program. In addition, new project instances shall meet the following requirements:

- 1) Meet the applicability conditions set out in VM0038, as outlined in Section 3.2.
- 2) Use the technologies or measures specified in the project description, specifically the use of BTR's Bridge platform to collect and process information on EV charging events.
- 3) Apply these technology measures in the same manner as specified in this document.

4) Confirm that the baseline scenario – as specified in VM0038 – is the continuation of conventional, gas-powered vehicles. Compliance with this criterion will also enable the project instance to utilize the same baseline scenario and additionality assessment (positive list) as outlined in Sections 3.4 and 3.5.

5) Be located within the United States and have a start date at the same time or later than the grouped project start date.

6) Be validated at the time of verification against all of the above criteria and be included into the monitoring report with all the necessary information needed to comply with these criteria.

7) Not leave this project and subsequently enroll in another VCS-registered project.

8) Will have evidence of ownership of the project emissions reductions by project proponent.

1.6 Project Proponent

Organization name	Bridge To Renewables, Inc.
Contact person	Jack Barrow
Title	CEO
Contact person	Kevin Foreman
Title	CTO
Address	1 Thomas Circle NW Ste. 700 Washington, DC 20005
Telephone	(952)3807512
Email	jack.barrow@btr.energy
Email	kevin.foreman@btr.energy

1.7 Other Entities Involved in the Project

Organization name	Carbonomics, LLC
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Role in the project	Consultant
Contact person	Seth Baruch
Title	President
Address	5077 Blackhawk Drive, Danville, CA 94506
Telephone	202-236-5253
Email	sbaruch@carbonomicsonline.com

1.8 Ownership

For all EV OEMs included within this grouped project, there will be contractual agreements establishing ownership of project Verified Carbon Units (VCUs). An example of such an agreement can be shown to the Validation and Verification Body (VVB) upon project validation. The EV OEMs have terms and conditions of service agreements with purchasers of their EVs which provide the EV OEMs the right to use the data collected from the EV telematics for a broad range of purposes. Those terms and conditions shall include language materially similar to the following, which can be shown to the VVB:

“By accepting these Terms and Conditions you [purchaser of the EV] understand and agree that [EV OEM] may use data from your vehicle to generate Environmental Attributes associated with your vehicle. Environmental Attributes may include any certificate, credit, allowance, incentive or any other benefit issued by a regulator or under any voluntary carbon emissions reduction program or any similar program that exchanges a benefit for the use of environmentally beneficial practices that arises from, or is related to, the information and data from your vehicle. You are transferring to [EV OEM] your rights, titles, and interests of any and all kinds to any and all Environmental Attributes.”

1.9 Project Start Date

Project start date	1/1/2022
Justification	The Project start date is the date when the first participating EVs began generating ERRs through use and charging.

1.10 Project Crediting Period

Crediting period	☐ Seven years, twice renewable
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	☒ Ten years, fixed ☐ Other (state the selected crediting period and justify how it conforms with the VCS Program requirements)
Start and end date of first or fixed crediting period	1/1/2022-12/31/2031

1.11 Project Scale and Estimated GHG Emission Reductions or Removals

Indicate the estimated annual GHG emission reductions/removals (ERRs) of the project:

- ☒ < 300,000 tCO₂e/year (project)
☐ ≥ 300,000 tCO₂e/year (large project)

Calendar year of crediting period	Estimated GHG emission reductions or removals (tCO ₂ e)
01-January-2022 to 31-December-2022	382
01-January-2023 to 31-December-2023	6,768
01-January-2024 to 31-December-2024	22,545
01-January-2025 to 31-December-2025	73,431
01-January-2026 to 31-December-2026	151,558
01-January-2027 to 31-December-2027	260,599
01-January-2028 to 31-December-2028	347,203
01-January-2029 to 31-December-2029	442,467

01-January-2030 to 31-December-2030	547,257
01-January-2031 to 31-December-2031	656,708
Total estimated ERs	2,508,916
Total number of crediting years	10
Average annual ERs	250,892

1.12 Description of the Project Activity

BTR's mission is to help maximize the environmental benefits of EV adoption. BTR's proprietary Bridge platform enables EV OEMs, charging station networks, and renewable electricity generators to work together to reduce GHG emissions and to participate in Low-Carbon or Clean Fuels programs (CFPs). The Bridge platform is currently used by a dozen EV OEMs, one of the largest charging station networks in the US, and an array of renewable electricity generators to participate in programs such as California's Low Carbon Fuel Standard.

Under this project activity, BTR will work with EV OEMs to accelerate the adoption and optimal use and charging of EVs. The use and charging of EVs generates ERRs. Through the collection of accurate and precise data, BTR is able to measure the GHG impact of participating EVs relative to an assumed baseline of comparable-model ICE vehicles.

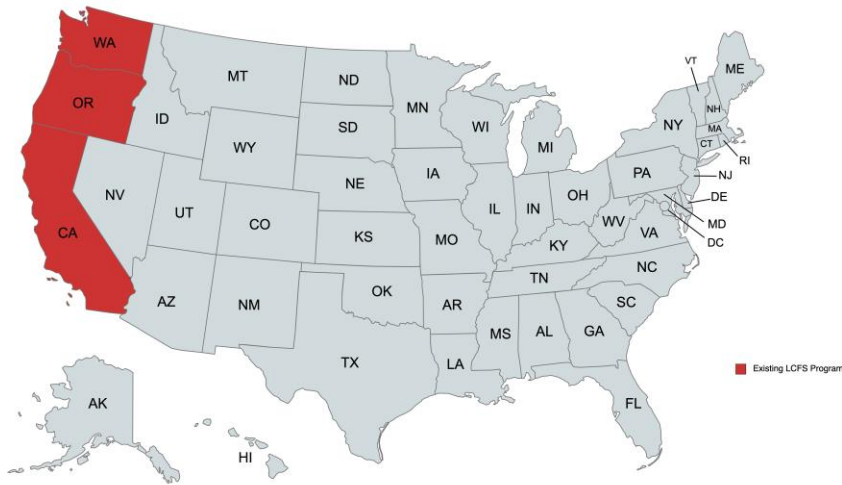
BTR will determine the carbon intensity of the grid during each EV charging event, as well as filter out – through geofencing – any and all charging events that occur in a geography with a CFP (e.g. California, Washington, Oregon) or at any charging station within the project boundary that is listed on the US Department of Energy's (US DOE) Alternative Fuels Data Center list of EV Chargers. In this way, BTR will ensure that no double counting occurs between its projects and others that are or may be registered under VM0038 and that the project chargers in its project are closed network L1 or L2 chargers utilized only by the EV owner.

BTR intends to communicate the GHG information back to the EV OEMs and, through them, the EVs and thereby inform EV owners about the GHG intensity of their charging and encourage them to optimize charging by shifting it to times when the grid is cleanest.

1.13 Project Location

The project boundary for this grouped project will cover the entirety of the United States. However, no charging events in the States of California, Washington, or Oregon will be

included as EV charging in those states is assumed to be part of the state CFP. Future programs similar to those may limit eligibility during the crediting period.



1.14 Conditions Prior to Project Initiation

See Section 3.4 (Baseline Scenario)

1.15 Compliance with Laws, Statutes and Other Regulatory Frameworks

The sale and charging of EVs complies with local, state and federal laws as EVs are eligible for sale in all 50 states. Moreover, EV charging systems are not regulated at a federal, state or local level in any of the locations where BTR is claiming VCUs. Thus, this project activity complies with this requirement.

The project proponent will periodically check for updated local and state regulations in order to remain in compliance with all updates to applicable regulations.

1.16 Double Counting and Participation under Other GHG Programs

1.16.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes

☒ No

If yes, provide required evidence of no double issuance as outlined by the VCS Standard.

1.16.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

☐ Yes

☒ No

If yes, provide the registration number and all relevant details.

1.16.3 Projects Rejected by Other GHG Programs

Has the project been rejected by any other GHG programs?

☐ Yes ☒ No

If yes, provide the program name(s), reason(s) and date for the rejection, justification of eligibility under the VCS Program, and any other relevant information.

1.17 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.17.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the VCS Program Definitions for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

If yes, provide all required evidence of no double claiming as outlined by the VCS Standard.

1.17.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the VCS Program Definitions for definition of GHG-related environmental credit system.

☐ Yes ☒ No

If yes, provide all required evidence of no double claiming as outlined by the VCS Standard.

1.17.3 Supply Chain (Scope 3) Emissions

Do the project activities specified in Section 1.12 affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☒ Yes ☐ No

If yes:

Is the project proponent(s) or authorized representative a buyer or seller of the product(s) (goods or services) that are part of a supply chain?

☐ Yes

☒ No

If yes:

Has the project proponent(s) or authorized representative posted a public statement on their website saying, "Carbon credits may be issued through Verified Carbon Standard project [project ID] for the greenhouse gas emission reductions or removals associated with [project proponent or authorized representative organization name(s)] [name of product(s) whose emissions footprint is changed by the project activities]."

☐ Yes

☐ No

If yes to all:

Provide evidence of the public statement. Evidence must be provided in this section or in an appendix.

1.18 Sustainable Development Contributions

This project contributes to the following UN Sustainable Development Goals:

SDG 9. Resilient Infrastructure
Target: 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes
Indicator: 9.4.1 CO2 emission per unit of value added (eg: reduction in CO2 emissions per mile traveled)
Monitoring: BTR will have the ability track the EVs within the project boundary and collect data on miles travelled, kWhs dispensed, time of charging and localized grid carbon intensity at that time to measure the reduction in CO2 emissions per mile travelled relative to the baseline.
SDG 7. Access to sustainable and modern energy
Indicator 7.1.2 Proportion of population with primary reliance on clean fuels and technology
Monitoring: By accelerating the adoption of EVs, as well as incentivizing their charging during periods in which grid emissions are lowest, the Project can measure the proportion of time EVs are reliant on clean energy (relative to an ICE baseline) and the cleanest energy (relative to localized grid emissions) and thereby help support and scale both clean fuels and clean technology.

SDG 3. Good health and well being
Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
Indicator 3.9.1 Mortality rate attributed to household and ambient air pollution
Monitoring: Internal combustion engine (ICE) vehicles emit pollutants when gasoline is combusted (e.g. carbon monoxide, particulate matter) that contribute to air pollution. The Project can quantify the volume of gasoline avoided and thus the quantity of such pollutants avoided by the electric project vehicles relative to ICE baseline vehicles. This can be done through the use of conversion factors in terms of gallons of gasoline avoided by the EVs, along with amount of pollution emitted per unit of gasoline burned.

1.19 Additional Information Relevant to the Project

1.19.1 Leakage Management

According to VM0038, “Leakage is not considered an issue under this methodology and is therefore set at zero.”

1.19.2 Commercially Sensitive Information

Due to commercial confidentiality provisions, the public version of the PD excludes:

1. Commercially sensitive contractual documentation pertaining to the ownership and transfer of the GHG emissions reductions.
2. Information about the location of the EV charging included in the project which, due to the residential locations of the charging, could be considered personally identifiable information (e.g. geo-coordinates of homes, etc.)
3. BTR, Inc. has a license agreement in place with WattTime for locational time-of-use average grid emissions. The data itself and the contractual provisions are covered under the confidentiality provisions of the agreement.

This information will be made available to the VVB.

1.19.3 Further Information

No further information is provided here at this time.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

BTR has engaged several distinct stakeholder groups including EV OEMs, EV drivers, and entities that support carbon reduction incentives as a means to scale EV adoption.

BTR manages the participation in various Clean Fuels Programs for a dozen major EV OEMs. Since 2022, BTR has engaged in multiple discussions with these EV OEMs about participating in a broader set of carbon reduction opportunities, including the precise and accurate measurement of the GHG emissions reductions represented by the adoption of EVs versus ICE vehicles, and the optimization of EV charging by shifting it to times when the grid is cleaner. It is these EV OEMs and the EVs included in the project instances that are the primary stakeholders in the Project.

BTR's commercial and technology teams engage at least bi-weekly with EV OEM stakeholders in the Project through technical workshops via videoconference. During these workshops, BTR's and the EV OEMs' teams discuss and develop the set of procedures and technical requirements to comply with the data collection, monitoring and contractual requirements of the methodology as well as general data security and privacy requirements.

The teams also discuss the optimal means of communicating information about achieved emissions reductions back to the EV OEMs and the EVs themselves, thereby informing the EV drivers about the GHG intensity of their charging and encouraging them to optimize charging by shifting it to times when the grid is cleanest. This information flow loop – from EV telematics information around time, location and quantum of charging to BTR, and information around the quantum of emissions reductions from BTR back to the EV OEM and the EVs – is designed to provide an ongoing mechanism for communication and feedback for EV OEM and EV stakeholders who are part of the Project.

The technical workshops also provide a means for EV OEM stakeholders in the project to raise concerns about potential negative impacts prior to and during project implementation and to discuss and agree upon remedial steps. For example, feedback from public comments as well as discussions during a site visit resulted in a shift from using model-specific values for the AFEC parameter to instead using the methodological defaults.

Action items, work plans and outcomes of these technical workshops are documented electronically and governed contractually in established term sheets and statements of work.

In addition to ongoing engagement with EV OEM stakeholders, BTR designed and tested various methods to effectively communicate information regarding GHG impact to a broad array of potential EV driver stakeholders.

BTR conducted this stakeholder outreach and testing in two stages. In the first stage, during the fourth quarter of 2022, BTR's technology team conducted eight rounds of testing, using a range of techniques, with self-identified EV drivers to gather feedback on the concept of and response to shifting charging behaviour to maximize carbon emissions reductions. In the second stage, during the first quarter of 2023, BTR used a third-party markets insights consultancy to engage over 2,000 drivers about how they view the environmental impact and emissions reductions of driving an EV and what would incentivize them to maximize the environmental benefits of an EV by shifting charging to periods when localized grid emissions are lowest.

Finally, during the third quarter of 2023, BTR engaged with several entities and business networks that support carbon reduction incentives as a means to scale EV adoption, and who have expressed support for this particular application of the methodology and interest in funding such incentives through the purchase of VERs generated by the project.

Additionally, the project listing will undergo a public comment period with Verra. Any comments from local stakeholders received during that period will be addressed and listed in the Public Comments section below.

Stakeholder Identification	BTR identified three distinct stakeholder groups likely impacted by the project, namely: • EV OEMs – the companies that produce and sell EVs. • EV Drivers – the consumers that purchase and use the EVs and may desire to optimize the EV's charging to times of lowest grid emissions. • Entities that support incentives to encourage greater EV adoption and charging optimization.
Legal or customary tenure/access rights	Not applicable because the project does not involve territories or resources to which the stakeholder groups have any rights.

Stakeholder diversity and changes over time	EV OEMs and entities that support incentives to encourage greater EV adoption and charging optimization are well established companies and organizations that have often existed for many years. EV drivers have varying socioeconomic backgrounds and are generally diverse. As EVs become more widely available and broadly adopted, EV drivers will increasingly represent the whole population of the United States.
Expected changes in well-being	Replacement of conventional fossil-fuelled ICE vehicles with EVs improves local air quality and therefore provides a positive impact on human health and the environment.
Location of stakeholders	All stakeholders, including the EV OEMs and EV drivers, are located and/ or operate within the United States.
Location of resources	United States

2.1.2 Stakeholder Consultation and Ongoing Communication

Date of stakeholder consultation	EV OEMs: 1/1/2022 and at least bi-weekly thereafter on an ongoing basis
Stakeholder engagement process	BTR sends meeting invitations by email in English after confirming EV OEM availability and treats each member of the EV OEMs' teams with respect. Outcomes are documented in follow up emails.
Consultation outcome	Our discussions with EV OEMs focused on four outcomes: • The project design, including which charging equipment is included, establishing ownership as well as site visit and other validation and verification requirements. • The costs – in terms of project development – and benefits – in terms of quantification of emissions reductions but also the ability to communicate grid

	emissions data back to the EV drivers themselves to encourage emissions-optimized charging. • The need to avoid double counting of charging that occurs in states with clean fuels programs, in which the EV OEMs may already be participating. • The monitoring plan design to minimize risk.
Ongoing communication	Video calls and in person visits
Stakeholder input	Feedback from public comments as well as discussions during a site visit resulted in a shift from using model-specific values for the AFEC parameter to instead using the methodological defaults.

Date of stakeholder consultation	EV owners and potential purchasers: Q4 2022, Q1 2023
Stakeholder engagement process	BTR used a variety of both in-person and online means to survey these stakeholders and engaged them in a respectful and culturally appropriate manner. Results were documented electronically.
Consultation outcome	Our discussions with EV owners and potential drivers focused on three outcomes: • How they viewed the environmental impact and emissions reductions of driving an EV. • How they viewed the concept of and response to shifting charging behavior to maximize carbon emissions reductions. • What would incentivize them to maximize the environmental benefits of an EV by shifting charging to periods when localized grid emissions are lowest.

Ongoing communication	The project will be providing EV OEMs with the means for ongoing communication of emissions reductions back to the EVs and the EV drivers.
Stakeholder input	Feedback from the survey informed the way in which emissions reductions generated by the project will be communicated back to the EVs and the EV drivers.

Date of stakeholder consultation	Entities that support incentives to encourage greater EV adoption and charging optimization: 10/1/2022 and ongoing
Stakeholder engagement process	BTR has proactively identified such stakeholders and engaged them and also reacted to stakeholder outreach about the project. In all cases BTR engaged them in a respectful and culturally appropriate manner. Results were documented in follow up emails.
Consultation outcome	Our discussions with these entities focused on two outcomes: - How they viewed the concept of and response to shifting charging behavior to maximize carbon emissions reductions of switching from an ICE vehicle to an EV. - What incentives they would provide to EV drivers to encourage the shift in behavior.
Ongoing communication	BTR schedules follow up calls as appropriate.
Stakeholder input	Feedback from these consultations help inform and quantify the potential benefits of the project relative to the costs.

2.1.3 Free Prior and Informed Consent

Obtaining consent	BTR obtains prior consent for all conversations with all stakeholders, either as part of ongoing commercial relationships or explicit consent agreements.
Outcome of FPIC	The outcome of BTR's FPIC process has been informed disclosure of motivations and projected results and a transparent commercial and contractual process.

2.1.4 Grievance Redress Procedure

Development process	BTR has specific provisions within its contracts with the EV OEMs whose EVs are included in the project to address grievances in a commercially and culturally appropriate manner. EV OEMs have terms and conditions associated with the EVs and the EV telematics data.
Grievance redress procedure	As per terms in BTR's commercial agreements with the EV OEMs, and the EV OEMs terms and conditions with the EVs.

2.1.5 Public Comments

The public comment period for the project ran from May 17th until June 16th, 2023. The Project received one public comment, from the Climate Neutral Business Network. Many of CNBN's comments referenced a "Telematics Memo," which is neither publicly available nor incorporated into VCS Methodology VM0038, Methodology for Electric Vehicle Charging Systems, Version 1.0, 18 September 2018 and thus could not have been addressed in the initial PDD.

BTR has taken careful and due account of all CNBN's comments, including the content of the Telematics Memo which was subsequently provided to BTR upon request. We provided detailed responses on their significance and relevance to SCS, as required by the VCS Standard which we outline and summarize below.

CNBN Comment Category 1: Inventory Creation, Management and Double-Counting Procedures

CNBN comments in this section focus on two primary concerns: BTR's disclosure of our project inventory to other project proponents (PPs) and the steps BTR will take to ensure that there is no double-counting.

Rather than creating inventory by registering a primary location (e.g. residence) and claiming it in perpetuity through the "first-past the validation post" proposal presented in the Telematics Memo, the Project intends to register the vehicle itself using the Vehicle Identification Number (VIN).

In response to CNBN's first concern, BTR has updated our project design to make available to other PPs a full list of vehicles enrolled in the Project by providing a searchable database of encrypted identifying information (i.e. "hashed" VINs) for the Project inventory, as outlined in Section 3.2 below. This will allow other project proponents and VVBs to verify that any vehicles from other telematics-based projects are not already included in the Project's inventory. This approach ensures precision and addresses privacy considerations.

The second concern is already addressed by our project design in the following ways:

- BTR will omit, through geo-coordinate and/or other data filtering, charging that occurs 1) in states with existing Clean Fuels Programs (CFPs), 2) at charging stations listed in the AFDC or other similar national databases, and 3) at charging stations or telematics project inventory already claimed by other VM0038 project proponents, either in existence now or in the future.
- For locations that are outside of a state with a CFP or not filtered out as part of other projects or charging stations listed in the AFDC or similar databases, the Project would claim "roaming" credits up to that time at which other PPs register the overlapping location (i.e. geo-coordinates). At that point, we would omit any data from that charging location's kWh from that vehicle's charging.

BTR will ensure that all of this data is available to SCS, our VVB, and Verra as well as to other VVBs and project proponents during the validation and verification process for their projects.

CNBN Comment Category 2: Telematics-Based VCS Crediting Memo

As noted above, the "Telematics Memo" that CNBN's comments reference is neither publicly available nor incorporated into VCS Methodology VM0038, Methodology for Electric Vehicle Charging Systems, Version 1.0, 18 September 2018 and thus could not have been addressed in the initial PDD.

Having now received and reviewed the Telematics Memo, BTR is confident that our approach is as conservative, if not more, in avoiding double counting and providing precise, rather than assumed, inputs than what is presented in the memo.

As noted above, our approach will address CNBN's concerns regarding project inventory and double counting. We have included additional detail around our monitoring plan in Section 5.3, which fully meets the monitoring requirements of the Methodology.

With specific regard to the comment on lack of information on ED/EC, for telematics-based crediting BTR's expectation is that most charging will occur at L2s, as outlined in Section 3.2 below, in which case ED = EC as stipulated in VM0038. Indeed, the Telematics Memo itself agrees with this approach, as it states:

"[In a telematics project, t]here would be no need to apply any DCFC efficiency discount rate (default 92.3%): the kWh metered through the telematics is the electricity delivered to the EV (ED)"

CNBN Comment Category 3: Credit Ownership Over Time

As outlined in Section 1.8 above, credit ownership will be established through contractual agreements and EV OEMs' terms and conditions of service agreements with purchasers of their EVs which provide the EV OEMs the right to use the data collected from the EV telematics for a broad range of purposes including those described in this project.

This is consistent with the approach outlined in the Telematics Memo, which states that:

"The telematics entity can secure carbon ownership of the ER through a T&C style agreement with the drivers when telematics systems are installed, satisfying this applicability condition."

CNBN's comment that the Project's credit ownership construct is "in contrast to other validated [telematics] projects where the relationship between the PP and the car owner/driver is a direct one" is mistaken. On the contrary, the EV OEMs have a direct connection to the driver and, as noted in Section 1.1, information about the GHG intensity of each EV driver's charging will be relayed by BTR to the EV OEMs and the EV driver to encourage the EV drivers to optimize charging by shifting it to times when the grid is cleanest.

With regard to CNBN's comment about managing project inventory in the event that a vehicle registered in the project transfer ownership, BTR's approach will vary depending on how an EV OEM tracks vehicle ownership with respect to telematics and associated connected vehicle terms and conditions of service as well as the location of inventory included in other PP's projects. If the vehicle telematics are deactivated upon transfer of ownership, then no data would be available and thus no emissions reductions would be credited. If ownership transferred to an entity whose charging took place in a location

already registered under another project, that charging would be filtered out by the processes outlined above and, again, no emissions reductions would be credited.

CNBN Comment Category 4: Time of Day Charging Foundations: Transparency

BTR has updated the PDD to specify that the source for EFkwTOD will be WattTime's historical Average Emissions data set, which provides at least hourly emissions data broken out by balancing authorities for most of the US. For regions where this data is not available, BTR will use comparable data as allowed in the methodology or use annual emissions factors (e.g. US EPA eGrid).

CNBN Comment Category 5: Transparency

As noted above, BTR will address concerns around project inventory creation and management by making available to other PPs a full list of vehicles enrolled in the Project by providing a searchable database of encrypted identifying information (i.e. "hashed" VINs) for the Project inventory, as outlined in Section 3.2 below. This will allow other project proponents and VVBs to verify that any vehicles from other telematics-based projects are not already included in the Project's inventory. This approach ensures precision and addresses privacy considerations.

BTR has updated this PDD to include an assessment of Scope 3 requirements under the Standard in Section 1.17.

CNBN Comment Category 6: Various other VM0038 requirements are not met

As noted above, the "T&C style" terms of service that EV OEMs have with purchasers of their vehicles and users of the associated telematics services provide appropriate disclosure to the EV drivers.

BTR intends to share location information via a .kml file with SCS, our VVB and, if requested, with Verra in full compliance with the requirements of Section 3.10.1.

BTR's initial design for the Project proposed using model-specific values to establish the MPG and AFEC values for the Project. In response to CNBN's comments questioning the availability of data to achieve this, the Project will instead use the methodological default values for MPG and AFEC.

Having now received and reviewed the Telematics Memo, BTR is confident that our approach is fully sufficient for telematics-based crediting and fully consistent with the requirements of the memo.

In summary, after thorough consideration of CNBN's comments, BTR has adjusted the Project's design as follows.

- BTR's initial design for the Project already includes conservative measures to avoid double-counting with any other project containing charging stations by filtering out, though geofencing, any charging that occurs (i) in a state with a CFP; (ii) at any and all charging stations or other project inventory registered and disclosed by any other project; and (iii) at any charging station listed in the US Department of Energy's Alternative Fuels Data Center list of electric vehicle charging station locations or other similar national databases, whether such chargers are part of another project or not.

However, in response to CNBN's comment about ensuring no double-counting with other telematics-based projects, BTR intends to make available to other project proponents a full list of vehicles enrolled in the Project by providing a searchable database of encrypted identifying information for the Project inventory, as outlined in Section 3.3 below. This will allow other project proponents and VVBs to verify that any vehicles from other telematics-based projects are not already included in the Project's inventory. This approach ensures precision and addresses privacy considerations.

- BTR's initial design for the Project proposed using model-specific values to establish the MPG and AFEC values for the Project. However, in response to CNBN's comments questioning the availability of data to achieve this, the Project will instead use the methodological default values for MPG and AFEC.

BTR has also updated the PDD to clarify that the source for EFkwTOD will be WattTime's Average Emissions dataset and that [L1/L2 vs DCFC, etc.].

The table below summarizes CNBN's comments by category and BTR's actions.

Comments Category	Comments Received	Actions Taken
Inventory Creation, Management and Double-Counting Procedures	BTR's disclosure of our project inventory to other project proponents (PPs)	BTR intends to make available to other project proponents a full list of vehicles enrolled in the Project by providing a searchable database of encrypted identifying information (i.e. "hashed VINs") for the Project inventory
	Risk of double counting between the Project and	Current approach of the Project sufficiently mitigates this risk.

	other projects registered under the Methodology.	
Telematics-Based VCS Crediting Memo	Lack of due diligence related to the Telematics Memo	The Telematics Memo is neither publicly available nor incorporated into VCS Methodology VM0038, Methodology for Electric Vehicle Charging Systems, Version 1.0, 18 September 2018. BTR has subsequently reviewed it and the Project is aligned with the approach to telematics-based projects outlined in the memo.
	Project monitoring plan does not meet requirements	BTR has updated the monitoring plan in Section 5.3 to provide additional detail on how data is collected and parameters monitored.
	Lack of information on EC/DC	Current approach complies with the Methodology and the Telematics Memo
Credit Ownership Over Time	Credit ownership model	The Project's current ownership model is aligned with the Methodology and the ownership structures outlined in the Telematics Memo and includes adequate measures to account for the transfer of ownership of EVs in the Project Inventory.
Time of Day Charging Foundations: Transparency	Data source for Time of Day (TOD) grid emissions factors.	BTR has updated the PDD to specify, in Section 5.2, that the source for EF _{kW} TOD will be WattTime's historical Average Emissions data set
Transparency	Scope 3 analysis	BTR has updated this PDD to include an assessment of Scope

		3 requirements under the Standard in Section 1.17.
Various other VM0038 requirements are not met	Inadequate description of driver disclosure	The terms of service that EV OEMs have with purchasers of their vehicles and users of the associated telematics services provide appropriate disclosure to the EV drivers.
	No KML map provided	BTR will share location information via a .kml file with VVB.
	Risk of appropriate data availability to use model-specific values to establish the MPG and AFEC values for the Project	BTR has updated the Project to instead use the methodological default values for MPG and AFEC.

2.2 Risks to Stakeholders and the Environment

BTR is not aware of any negative environmental or socio-economic impacts associated with this project activity. The project will increase access to and adoption of EVs and the optimization of the associated charging and will help lower the barrier to entry for transportation decarbonization.

No environmental impact statement was required for this project activity. Replacement of conventional fossil-fuelled ICE vehicles with EVs improves local air quality and therefore provides a positive impact on human health and the environment.

	Risks Identified	Mitigation or preventative measure taken
Risks to stakeholder participation	No risks identified	All stakeholders participate under terms and conditions of service or commercial agreements.

Working conditions	No risks identified	The project does not impact the working conditions of any stakeholders.
Safety of women and girls	No risks identified.	The project does not pose any safety risks to women and girls.
Safety of minority and marginalized groups, including children	No risks identified.	The project does not pose any safety risks to minority and marginalized groups including children.
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	No risks identified.	Replacement of conventional fossil-fuelled ICE vehicles with EVs improves local air quality and therefore provides a positive impact on human health and the environment.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

Discrimination and sexual harassment	BTR and its consultants and partners maintain policies on equal opportunity employment, including the prohibition of harassment based on sex and sexual orientation.
Management experience	BTR is an early innovator in establishing the use of embedded vehicle telematics as a source of measurable and verifiable EV charging data used for transportation fuel programs. BTR manages compliance clean fuels program registration, reporting and credit monetization for a dozen EV OEMs, one of the largest charging station networks in the US, and an array of renewable electricity generators to participate in programs such as California's Low Carbon Fuel Standard and Washington state's Clean Fuel Standard. BTR ensures compliance with all relevant laws and regulations within the jurisdictions in which we operate.

Gender equity in labor and work	BTR maintains a policy of providing equal opportunities in the context of gender equity and pay for labor and work.
Human trafficking, forced labor, and child labor	This Project's Territory is the United States, whose laws prohibit human trafficking, forced labor, and child labor and with which BTR, our consultants and partners must comply.

2.3.2 Human Rights

This Project relies on the contractual rights to vehicle telematics data associated with electric vehicles that are part of the project inventory and operate within the Territory. Nothing in the Project activity impedes recognition, respect for or the promotion of the rights of IPs, LCs, and customary rights holders in line with applicable international human rights law, and the United Nations Declaration on the Rights of Indigenous Peoples and ILO Convention 169 on Indigenous and Tribal Peoples.

2.3.3 Indigenous Peoples and Cultural Heritage

This Project concerns electric vehicles are part of the project inventory and operate within the Territory and nothing in the Project activity impedes the preservation and protection of cultural heritage.

2.3.4 Property Rights

Rights to territories and resources	This Project relies on the contractual rights to vehicle telematics data associated with electric vehicles that are part of the project inventory and operate within the Territory. Nothing in the Project activity impacts any legal or customary tenure/access rights to territories, property and/or resources, including collective and/or conflicting rights held by stakeholders.
Respect for property rights	This Project relies on the contractual rights to vehicle telematics data associated with electric vehicles that are part of the project inventory and operate within the Territory. Nothing in the Project activity impedes the protection or preservation of property rights of IPs, LCs, and customary rights holders.

2.3.5 Benefit Sharing

Process used to design the benefit sharing plan	Not applicable, as the Project does not impact property rights as described in Section 2.3.4 above.
Summary of the benefit sharing plan	Not applicable, as the Project does not impact property rights as described in Section 2.3.4 above.
Approval and dissemination of benefit sharing plan	Not applicable, as the Project does not impact property rights as described in Section 2.3.4 above.

2.4 Ecosystem Health

	Risks Identified	Mitigation or preventative measure taken
Impacts on biodiversity and ecosystems	No risks identified.	Replacement of conventional fossil-fuelled ICE vehicles with EVs improves local air quality and therefore provides a positive impact on health and the environment.
Soil degradation and soil erosion	No risks identified.	Replacement of conventional fossil-fuelled ICE vehicles with EVs improves local air quality and therefore provides a positive impact on human health and the environment.
Water consumption and stress	No risks identified.	Replacement of conventional fossil-fuelled ICE vehicles with EVs improves local air quality and therefore provides a positive impact on human health and the environment.

Usage of fertilizers	No risks identified.	Replacement of conventional fossil-fuelled ICE vehicles with EVs improves local air quality and therefore provides a positive impact on human health and the environment.

2.4.1 Rare, Threatened, and Endangered species

Is the project located in or adjacent to habitats for rare, threatened, or endangered species?

☐ Yes ☒ No

2.4.2 Introduction of species

Not applicable, as the Project includes no planting or species introduction.

2.4.3 Ecosystem conversion

Not applicable, as the Project includes no planting or species introduction.

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	VM0038	Methodology for Electric Vehicle Charging Systems, 18 September 2018	1.0
Methodology Module	VMD0049	Activity Method for Determining Additionality of Electric Vehicle Charging Systems, 18 September 2018	1.0

3.2 Applicability of Methodology

Provided below are the applicability criteria of VM0038 and this project complies with each:

Methodology ID	Applicability condition	Justification of compliance
VM0038	The applicable fleets of projects applying this methodology are limited to all LDV BEVs and PHEVs, and HDV EVs. For LDV projects, these applicable fleets comprise BEVs and PHEVs for L1 and L2 chargers, and BEVs for DCFCs. For HDV projects, these applicable fleets comprise MDV/HDV electric buses and trucks, both BEV and PHEV, eligible to charge at the project's set of EV charging systems.	All EVs under this project will be light-duty PHEVs and BEVs comparable to conventional fossil fuel baseline ICE vehicles. BTR will calculate rate of charge by dividing the kWh consumed during the session by the duration of the session. If the rate of charge in kW is less than 40 kW, the charge will be categorized as L1/L2. If the rate of charge is greater than 40 kW, the charge will be categorized as DCFC. Charging occurring at a DCFC charger will not be included. MDEV/HDEV are not included.
VM0038	Project proponents must demonstrate that the EV models comprising the applicable fleet of the project are comparable to their conventional fossil fuel baseline vehicles using the following means: Project and baseline vehicles belong to the same vehicle category (e.g., car, motorcycle, bus, truck, LDV, MDV, HDV).	All EV models in this methodology will be LDV PHEVs or BEVs, comparable to conventional fossil fuel baseline vehicles. This methodology will use the defaults presented in the methodology document. BTR will use the vehicle identification numbers (VINs) to identify the vehicle category and the

	Project and baseline vehicles have comparable passenger/load capacity (comparing the baseline vehicle with the respective project vehicle).	load capacity of the applicable fleet of the project. Using these means, BTR will ensure that the appropriate baseline vehicles are used for each vehicle in the applicable fleet of the project, using the defaults presented in the methodology document.
VM0038	Project and baseline vehicles have comparable passenger/load capacity (comparing the baseline vehicle with the respective project vehicle).	See above.
VM0038	In order to demonstrate that double counting of emission reduction will not occur, the project proponent must maintain an inventory of EV chargers included in the project, including their L1/L2/DCFC classifications and unique identifiers; other measures may include disclosure of credit ownership to EV drivers. Double counting relative to any issued GHG credits from projects that introduce EV fleets will be addressed using the emission reduction discount adjustments in Section 8.4 in VM0038. Where associated infrastructure and/or renewable power (on-site and/or direct transmission) are included in an EV charging system, this must be referenced and described in the charging system's inventory.	All LDEV vehicles included in this project have unique identifiers derived from a hash of the VIN that other project proponents will be able to reference. All charging events from those vehicles have unique latitudes and longitudes. Using that and other information from the EV telematics, BTR is able to filter out – through geofencing – any and all charging events located in a geography with a CFP (e.g. California, Washington, Oregon) or that occur at any charging station within the project boundary that is listed on the US DOE's Alternative

		Fuels Data Center list of EV Chargers, any other publicly maintained list of non-residential charging stations. BTR will also filter out any charging that occurs at a charging station already listed with another VM0038 project, or with any other crediting project we are made aware of. In this way, BTR will ensure that no double counting occurs between its projects and others registered under VM0038 and that the project chargers in its project are closed network L1 or L2 chargers utilized only by the EV owner. BTR will conservatively assume that no EV charging systems will have on-site renewables or other associated infrastructure. In reality, very few EV charging systems have renewables and other associated infrastructure, including batteries. This is a conservative approach because an assumption of on-site renewables could overestimate project GHG emissions reductions.
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VM0038	Project documentation must also include the following for each EV charger: Classification using the performance voltage, AC/DC basis and kW power specifications given for L1, L2 and DCFC 50/100/150/320/500 definitions Unique identifiers, including the geo-spatial coordinates and one other unique reference such as NEMA codes, customer codes, equipment serial numbers, charger ID codes, or AFDC ID codes	For this project, each EV will be assigned a unique identifier. Location of the EV will be determined at the time of each charging event and recorded by the telematics system. Actual kWhs dispensed will be recorded by the on-board telematics.
VM0038	This methodology is applicable to EV charging systems utilizing AI to provide electricity to and from EVs, on-site batteries and renewables under the condition that the AI must include adequate metering systems (e.g., meters/sub-meters and/or associated measurement systems). These metering systems must measure and accurately trace all electricity deliveries and receipts from all such interrelated associated infrastructure sources. This includes electricity sourced from/returned to the grid, dedicated renewable energy generated on-site (including RE sourced from direct transmission lines), on-site storage batteries, and/or the EV's on-board battery.	BTR will conservatively assume that no EV charging systems will have on-site renewables or other associated infrastructure. In reality, very few EV charging systems have renewables and other associated infrastructure, including batteries. This is a conservative approach because an assumption of on-site renewables could overestimate project GHG emissions reductions.
	Projects with estimated annual emission reductions of over 60,000 tCO₂e (large-scale) are permitted where project proponents can demonstrate that the project is	Projects located in Annex I and II countries, and countries referenced by EIA data sources, are automatically eligible to

	located in a country with credible national data sources for GHG emission calculations.	be of any scale. The US fits into this category and is thus automatically eligible.
VM0038	Project proponents must demonstrate proof of ownership of emission reductions which may be achieved through the following: • With the charging system owners through contractual agreements, terms and conditions of service, utility program participation rules, or other means, and/or • With EV drivers through disclosure of credit ownership (e.g., through dispenser notices, screen displays, terms and conditions of service, etc.).	See Section 1.7
VMD0049	The project is located in a region(s) listed in Tables 1 and 2 below. These are the regions for which activity penetration of EVs has been demonstrated to be less than five percent, as differentiated by LDVs (Table 1) and HDVs (Table 2).	All project instances are located in the US, which is listed in Table 1 of the module and therefore meets the applicability condition.
VMD0049	The applicable fleets of HDV projects must be limited to e-buses and e-trucks.	All fleets in this project are LDVs. This project does not include any HDVs and therefore meets the applicability condition.

VMD0049	Where projects contain a combination of EV charging systems serving different applicable fleets (e.g. including both L1/L2 and DCFC systems), project proponents must assess a region's inclusion in the positive list for each of the project charging system's applicable fleets independently.	The project only includes L1/L2 chargers located at residential locations, which are included in the positive list.
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3.3 Project Boundary

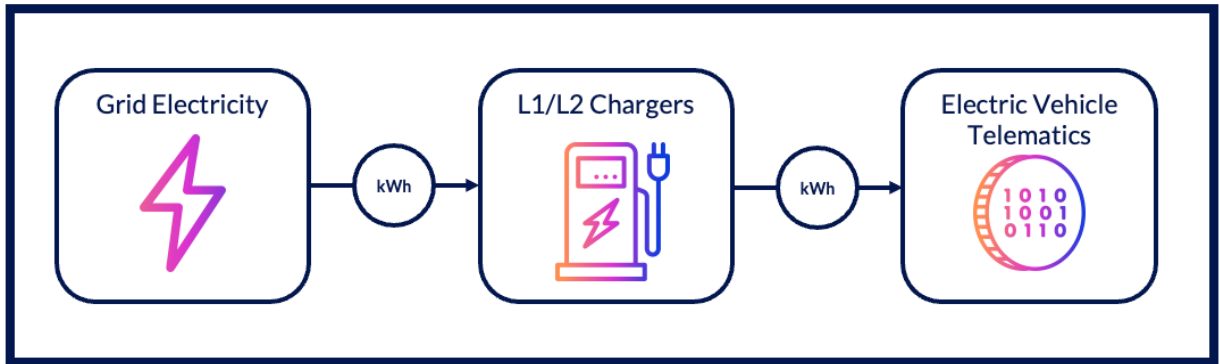
The project boundary is comprised of the following:

- 1) The applicable fleets for the project EV chargers;
- 2) The geographic boundaries where the EV charging systems are located;
- 3) The EV charging systems of the project activity including their electricity supply sources and associated infrastructure.

Source		Gas	Included?	Justification/Explanation
Baseline	Fossil fuel combustion of vehicles displaced by project activities	CO ₂	Yes	Main emission source
		CH ₄	No	VM0038 allows exclusion for simplicity
		N ₂ O	No	VM0038 allows exclusion for simplicity
		Other	No	VM0038 states other GHGs are not applicable
Project	Electricity consumption via grid	CO ₂	Yes	Main emission source
		CH ₄	No	VM0038 allows exclusion for simplicity
		N ₂ O	No	VM0038 allows exclusion for simplicity

Source		Gas	Included?	Justification/Explanation
	Renewables via on-site/direct transmission	Other	No	VM0038 states other GHGs are not applicable
		CO ₂	No	Main emission source
		CH ₄	No	VM0038 allows exclusion for simplicity
		N ₂ O	No	VM0038 allows exclusion for simplicity
		Other	No	VM0038 states other GHGs are not applicable
	On-site battery storage	CO ₂	No	Main emission source
		CH ₄	No	VM0038 allows exclusion for simplicity
		N ₂ O	No	VM0038 allows exclusion for simplicity
		Other	No	VM0038 states other GHGs are not applicable
	EV battery storage in vehicle	CO ₂	Yes	Main emission source
		CH ₄	No	VM0038 allows exclusion for simplicity
		N ₂ O	No	VM0038 allows exclusion for simplicity
		Other	No	VM0038 states other GHGs are not applicable

Project Charging Diagram



The project boundary includes GHG emissions from grid electricity generation. The project boundary for the project fleet EVs' charging includes the EV itself in addition to the charging infrastructure. The charging data, including kWh, time of charge, and location, are collected from the EV on-board telematics.

3.4 Baseline Scenario

As stated in VM0038, the baseline scenario is the operation of comparable fleets (the comparability of baseline and project applicable fleet vehicles to be demonstrated as per indicators set out in applicability conditions) that would have been used to provide the same transportation service in the absence of the project. The comparable fleets are conventional light duty fossil fuel internal combustion engine vehicles.

BTR will use the VIN of each vehicle in the applicable fleet of the project to identify the category and load capacity of the project vehicle. For each vehicle, BTR will ensure that the baseline scenario is the operation of a comparable vehicle (the same category and load capacity), using the defaults presented in the methodology documents.

3.5 Additionality

VM0038 uses an activity method for the demonstration of additionality. The boundary for this project is confined to the United States, which is listed as a country eligible for the positive list as cited in VCS Module VMD0049, Activity Method for Determining Additionality of Electric Vehicle Charging Systems. Because this project meets all of the applicability conditions under VM0038, the project can be considered additional.

3.5.1 Regulatory Surplus

Is the project located in an UNFCCC Annex 1 or Non-Annex 1 country?

☒ Annex 1 country

☐ Non-Annex 1 country

Are the project activities mandated by any law, statute, or other regulatory framework?

☐ Yes

☒ No

If the project is located inside a Non-Annex 1 country and the project activities are mandated by a law, statute, or other regulatory framework, are such laws, statutes, or regulatory frameworks systematically enforced?

☐ Yes

☐ No

3.5.2 Additionality Methods

VM0038 uses an activity method for the demonstration of additionality. The boundary for this project is confined to the United States, which is listed as a country eligible for the positive list as cited in VCS Module VMD0049, Activity Method for Determining Additionality of Electric Vehicle Charging Systems. Conformance with the positive list is demonstrated in the Applicability of Methodology section above.

3.6 Methodology Deviations.

There are no methodology deviations.

4 QUANTIFICATION OF ESTIMATED GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

Baseline emissions are calculated as follows:

$$BE_y = \sum_{i,f} ED_{iy} * EF_{ify} * 100 * IR_i^{y-1} / (AFEC_{iy} * MPG_{iy})$$

Where:

- BE_y = Baseline emissions in year y (tCO₂e)
 $ED_{i,y}$ = Electricity delivered by project charging systems serving applicable fleet i in project year y (kwh)
 $EF_{f,t,y}$ = Emission factor for the fossil fuel f used by comparable fleet vehicles j in year y (tCO₂e/gallon)
 IR_i = Technology improvement rate factor for applicable fleet i
 $AFEC_{i,y}$ = Weighted average electricity consumption per 100 miles rating for EVs in applicable fleet i in project year y (kwh/100 miles)
 $MPG_{i,y}$ = Weighted average miles per gallon rating for the fossil fuel vehicles comparable to each EV in applicable fleet i , in project year y (miles per gallon)

For this project, BTR will be using the default values for average electricity consumption per 100 miles (AFEC_{i,y}) and for miles per gallon (MPG_{i,y}) as provided in the methodology. This methodology only covers LDV vehicles.

BTR expects that most charging will occur at L1/L2 locations given the removal of charging at public charging stations. However, to properly categorize charging sessions, BTR will calculate rate of charge by dividing the kWh consumed during the session by the duration of the session. If the rate of charge in kW is less than 40 kW, the charge will be categorized as L1/L2. If the rate of charge is greater than 40 kW, the charge will be categorized as DCFC. Charging at DCFC chargers will be filtered out. The appropriate default values for L1/L2 chargers provided by the methodology will then be used.

4.2 Project Emissions

Given that BTR will have the ability to track the GHG emissions intensity of all local and regional grids in the US, BTR will use Equation 5 in VM0038, and not Equation 4, to determine project emissions. In addition, this data will not use fuel consumption-based time-of-day calculations, so Equation 6 in VM0038 will not be utilized. Finally, the project will not be using chargers connected to batteries or on-site renewables (or any other associated infrastructure as defined in the methodology), and thus Equations 7-9 will not need to be considered in the project emission calculations. Thus, overall project emissions will be determined by:

$$PE_y = \sum_{ijt} ECTOD_{ijty} * EF_{kwTOD_{ijty}}$$

Where:

- PE_y = Project emissions in year y (tCO₂e)
- $ECTOD_{i,j,t,y}$ = Electricity consumed by project chargers sourced from region j serving applicable fleet i during time of day period t in project year y (kwh/time period t)
- $EF_{kwtOD_{j,i,t,y}}$ = Emission factor for the electricity sourced from region j consumed by project chargers serving applicable fleet i during time of day period t in year y (tCO₂e/kwh)

4.3 Leakage Emissions

According to VM0038, “Leakage is not considered an issue under this methodology and is therefore set at zero.”

4.4 Estimated GHG Emission Reductions and Carbon Dioxide Removals

$$ER_y = (BE_y - PE_y - LE_y) * D_y$$

Where:

- ER_y = Net GHG emissions reductions and removals in year y (tCO₂e)
- BE_y = Baseline emissions in year y (tCO₂e)
- PE_y = Project emissions in year y (tCO₂e)
- LE_y = Leakage in year y (tCO₂e)
- D_y = Discount factor to be applied in year y (%)

In addition:

$$D_y = ERC_y / (ERF_y + ERC_y)$$

Where:

- D_y = Discount factor to be applied in year y (%)
- ERC_y = Sum of GHG credits²⁰ issued by all projects under this methodology (or others which support the introduction of EV charging systems) across this project's applicable fleet i categories within this total project region in project year $y-1$ (tCO₂e)
- ERF_y = Sum of GHG credits issued by all projects under methodologies which support the introduction of EV fleets (e.g., CDM AMS.III.C) located within this project's total region

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
01-January-2022 to 31-December-2022	650	268	0	382
01-January-2023 to 31-December-2023	11,526	4,758	0	6,768
01-January-2024 to 31-December-2024	38,394	15,849	0	22,545
01-January-2025 to 31-December-2025	125,053	51,622	0	73,431
01-January-2026 to 31-December-2026	258,103	108,545	0	151,558
01-January-2027 to 31-December-2027	443,799	183,200	0	260,599
01-January-2028 to 31-December-2028	591,286	244,083	0	347,203
01-January-2029 to 31-December-2029	753,520	311,053	0	442,467
01-January-2030 to 31-December-2030	931,977	384,720	0	547,257
01-January-2031 to 31-	1,118,372	461,644	0	656,708

December-2031				
Total	4,272,679	1,763,761	0	2,508,916

According to the Berkeley Carbon Trading Project's Voluntary Registry Offsets Database v10, which contains information from the four major voluntary offset project registries—American Carbon Registry (ACR), Climate Action Reserve (CAR), Gold Standard, and Verra (VCS) – as of December 31st, 2023, 7,673 VERs have been issued in the United States by transportation emission reduction projects related to electric vehicles and charging.²

All these projects are registered under the Methodology, and, as far as BTR is aware, no other projects have been listed in the United States under other methodologies that credit emissions reductions from electric vehicles and charging. This suggests that ERC = 7,673; ERF = 0; and thus the Discount Factor, D, is equal to 1.0.

5 MONITORING

5.1 Data and Parameters Available at Validation

Data / Parameter	IR _i
Data unit	Number
Description	Technology improvement factor for applicable fleet i in year y for default value BE calculations
Source of data	CDM AMS-III.C which uses the same discount rate in baseline calculations

² Barbara K. Haya, Aline Abayo, Ivy S. So, Micah Elias. (2023, December). Voluntary Registry Offsets Database v10, Berkeley Carbon Trading Project, University of California, Berkeley. Retrieved from: <https://gspp.berkeley.edu/faculty-and-impact/centers/cepp/projects/berkeley-carbon-trading-project/offsets-database>

Value applied	If baselines are calculated using updated BEy parameters for each project year y, $IR_i = 1$ If default values are used for these BEy parameter calculations, For LDV applicable fleets, $IR_i = 1$ For HDV applicable fleets, $IR_i = 0.9$
Justification of choice of data or description of measurement methods and procedures applied	See VM0038
Purpose of Data	Calculation of baseline emissions
Comments	

5.2 Data and Parameters Monitored

Data / Parameter	$EF_{j,f,y}$
Data unit	tCO ₂ e/gallon
Description	Emission factor for the fossil fuel f used by the fossil fuel ICE vehicles deemed comparable to each EV in applicable fleet i in year
Source of data	Per the methodology, US EPA emission factors, at the time of validation. ³

³ https://www.epa.gov/system/files/documents/2022-04/ghg_emission_factors_hub.pdf

Description of measurement methods and procedures to be applied	Values are calculated per Appendix 1 of the VM0038 methodology
Frequency of monitoring/recording	Updated at verification
Value applied	L1/L2 (BEV and PHEV average) = 0.0088 tCO ₂ e per gallon
Monitoring equipment	N/A
QA/QC procedures to be applied	National government transportation fuel emission rates have been widely established and peer reviewed.
Purpose of data	Calculation of baseline emissions
Calculation method	Methodology default.
Comments	Only LDVs charging at L1/L2 chargers will be participating in the project.

Data / Parameter	AFEC _{iy}
Data unit	kwh/100 miles
Description	Weighted average electricity consumption per 100 miles rating for EVs in applicable fleet i in project year y
Source of data	U.S. Department of Energy Fuel Economy ratings
Description of measurement methods and procedures to be applied	Values are calculated per Appendix 1 of the VM0038 methodology for open network charging, based on U.S. Department of Energy fuel economy ratings

Frequency of monitoring/recording	Updated at verification
Value applied	L1/L2 chargers = 33.32 kwh / 100 miles
Monitoring equipment	N/A
QA/QC procedures to be applied	National government transportation fuel economy ratings have been widely established and peer reviewed.
Purpose of data	Calculation of baseline emissions
Calculation method	Methodology default
Comments	BTR will use rate of charge to determine if the charge occurred at an L1/L2 or DCFC charger. Vehicle rate of charge less than 40 kW over an hour will be considered to have occurred at an L1/L2 charger. A rate of charger equal to or greater than 40 kW over an hour will be considered to have occurred at a DCFC. Charges occurring at a DCFC will not be included. In practice, it is likely that the rate of charge from charging at an L1 or L2 charger will be significantly lower than 40 kW over an hour, likely ranging from 1-19 kW.⁴

Data / Parameter	MPG _{a,i,y}
Data unit	miles/gallon
Description	Mile per gallon rating for fossil fuel vehicle model(s) deemed comparable to EV model a from applicable fleet i in project year y

⁴ <https://www.transportation.gov/rural/ev/toolkit/ev-basics/charging-speeds>

Source of data	U.S. Department of Energy Fuel Economy ratings
Description of measurement methods and procedures to be applied	Values are calculated per Appendix 1 of the VM0038 methodology, based on U.S. Department of Energy fuel economy ratings.
Frequency of monitoring/recording	Updated at verification
Value applied	L1/L2 chargers = 29.18 mpg L3 DCFC chargers = 29.10 mpg
Monitoring equipment	N/A
QA/QC procedures to be applied	National government transportation fuel economy ratings have been widely established and peer reviewed.
Purpose of data	Calculation of baseline emissions
Calculation method	Methodology default
Comments	BTR will use rate of charge to determine if the charge occurred at an L1/L2 or DCFC charger. Vehicle rate of charge less than 40 kW over an hour will be considered to have occurred at an L1/L2 charger. A rate of charger equal to or greater than 40 kW over an hour will be considered to have occurred at a DCFC. Charges occurring at a DCFC will not be included. In practice, it is likely that the rate of charge from charging at an L1 or L2 charger will be significantly lower than 40 kW over an hour, likely ranging from 1-19 kW.⁵

⁵ <https://www.transportation.gov/rural/ev/toolkit/ev-basics/charging-speeds>

Data / Parameter	$ED_{i,y}$
Data unit	Kwh/year
Description	Quantity of electricity delivered to EV's by project chargers serving applicable fleet i in project year y
Source of data	BTR and OEM via OEM's telematic devices on-board each EV.
Description of measurement methods and procedures to be applied	On-board telematics will be used to determine the number of kWhs delivered to the EV within the project boundary for each charging event. The OEMs will collect this and provide the data to BTR.
Frequency of monitoring/recording	Continuous
Value applied	Will vary
Monitoring equipment	On-board telematic systems provided by the OEMs.
QA/QC procedures to be applied	Outlier data can be flagged if anomalous readings take place, which can be further investigated (eg: if a charging event leads to more kWhs dispensed than the EV's battery can hold. OEM telematics will be able to catch any errors in data processing.
Purpose of data	Calculation of baseline emissions
Calculation method	N/A
Comments	

Data / Parameter	$ECTOD_{i,j,t,y}$
Data unit	Kwh/time period t

Description	Quantity of electricity consumed by project chargers sourced from region j serving applicable fleet i during time of day period t in project year y
Source of data	BTR and OEM via OEM's telematic devices on-board each EV.
Description of measurement methods and procedures to be applied	On-board telematics will be used to determine the number of kWhs delivered to the EV within the project boundary for each charging event. The OEMs will track this and provide the data to BTR.
Frequency of monitoring/recording	Continuous
Value applied	Will vary
Monitoring equipment	On-board telematic systems provided by the OEMs.
QA/QC procedures to be applied	Outlier data can be flagged if anomalous readings take place, which can be further investigated (eg: if a charging event leads to more kWhs dispensed than the EV's battery can hold). BTR's platform will flag any apparent errors in data processing.
Purpose of data	Calculation of project emissions
Calculation method	N/A
Comments	

Data / Parameter	EF _{kwhTOD_{j,i,t,y}}
Data unit	tCO ₂ e/kwh

Description	Emission factor for the electricity sourced from region j consumed by project chargers serving applicable fleet i during time of day period t in year y
Source of data	Emissions data will be obtained from WattTime's Average Emissions dataset, which breaks out hourly average emissions factor by balancing authority, or comparable US EPA eGrid data if unavailable.
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Continuous
Value applied	Will Vary
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	Calculation of project emissions
Calculation method	N/A
Comments	

Data / Parameter	ERF_y Note that this parameter and ERC_y are used to calculate D_y , and thus, D_y will not be added as a separate monitoring table
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Data unit	tCO ₂ e
Description	Sum of GHG credits issued by all projects under methodologies which support the introduction of EV fleets (e.g., CDM AMS.III.C) within this project's same total region where the applicable fleet <i>i</i> categories are the same for both this EV charging system project and projects introducing EV fleets, in project year y-1
Source of data	VCS (and other voluntary and regulated credit registries if they develop similar EV charging system methodologies), with GHG credits issued from EV charging system projects within this same project's region (e.g. for complementary charging networks).
Description of measurement methods and procedures to be applied	Simple tallies of the total GHG credits issued for projects that introduce EV fleets within this project's region from project year 1 through year y-1 These GHG credits are those issued under EV fleet methodologies such as CDM AMS-III.C whose credit potentially double count with those issued through EV charging system projects where the applicable fleet of the EV charging system project include those that were introduced in the EV fleet project.
Frequency of monitoring/recording	Annual
Value applied	Will vary by year. At the time of validation, no other projects have been listed in the United States under other methodologies that credit emissions reductions from electric vehicles and charging, such as CDM AMS-III.C; thus, it can be concluded that ERF = 0.
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A

Purpose of data	Calculation of emission reductions
Calculation method	N/A
Comments	

Data / Parameter	ERC_y Note that this parameter and ERF_y are used to calculate D_y, and thus, D_y will not be added as a separate monitoring table
Data unit	tCO ₂ e
Description	Sum of GHG credits issued by all projects under this methodology (or others which support the introduction of EV charging systems) across this project's applicable fleet <i>i</i> categories within this total project region in project year y-1
Source of data	VCS (and other voluntary and regulated credit registries if they develop similar EV charging system methodologies), with GHG credits issued from EV charging system projects within this same project's region (e.g. for complementary charging networks).
Description of measurement methods and procedures to be applied	Simple tallies of the total GHG credits issued from EV charging system project year 1 through year y-1 within this project's region These GHG credits include those issued under this VCS charging system methodology (or similar ones developed by other certification groups) whose credits arise within the same region as this project but cover credits issued from complementary charging network systems (e.g. workplace chargers from a complementary project located in the same region as this project's residential chargers).
Frequency of monitoring/recording	Annual

Value applied	Will vary by year. At the time of validation, 7,673 VERs have been issued in the United States by transportation emission reduction projects related to electric vehicles and charging under this methodology. ⁶ It can thus be concluded that at the time of validation, ERC = 7,673.
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	Calculation of emission reductions
Calculation method	N/A
Comments	

5.3 Monitoring Plan

Please see BTR's Monitoring Plan below. Note that all required components from the VCS Project Description Template are addressed.

Monitoring Process and Schedule

All data associated with the EVs in each Project Instance are collected remotely and continuously via the EV telematics systems under the EV OEM's terms and conditions of service with the EVs. The data is stored on the EV OEM's internal data platform.

Prior to any Project Instance being included in the project, BTR's Commercial Team will ensure there are contractual agreements in place with the EV OEM establishing ownership of project Verified Carbon Units (VCUs) for the EVs included in such Project Instance. BTR's Commercial Team is also responsible for ensuring that there are contractual agreements in place for any third-party data used to establish parameters (e.g. time-of-use, locational grid emissions).

⁶ Barbara K. Haya, Aline Abayo, Ivy S. So, Micah Elias. (2023, December). Voluntary Registry Offsets Database v10, Berkeley Carbon Trading Project, University of California, Berkeley. Retrieved from: <https://gspp.berkeley.edu/faculty-and-impact/centers/cepp/projects/berkeley-carbon-trading-project/offsets-database>

The EV OEMs subsequently transmit the data to BTR via BTR's proprietary Application Programming Interface (API). The data includes, but is not limited to:

- The Vehicle Identification Number (VIN)
- The Plug-In Date
- The Plug-Out Date
- Start Charge Date and Time
- End Charge Date and Time
- Latitude and Longitude of Charging Event
- Energy Consumed during the Charging Event ("ECTOD")

The data is stored in BTR's secure cloud infrastructure, which is managed and supervised by BTR's Technology Team. BTR's data security processes ensure a level of data security equal to or in excess of those required by the EV OEMs' information security and data privacy policies, and BTR maintains data security certifications such as Trusted Information Security Assessment Exchange (TISAX). BTR's processes and data sharing protocols with EV OEMs has been refined and stress-tested through participation in the California and Washington state clean fuel standard compliance programs.

Once the data has been received and stored, BTR's Technology Team analyzes the data with its ELANTIS protocol which is designed to spot, log, alert and filter the data for program specific requirements and errors. This analysis includes checking the data to determine:

- The location of the charging event
 - Any charging that occurs (i) in a state with a CFP; (ii) at any and all charging stations or other project inventory registered and disclosed by any other project; and (iii) at any charging station listed in the US Department of Energy's Alternative Fuels Data Center list of electric vehicle charging station locations or other similar national databases, whether such chargers are part of another project or not, are filtered out.
- The rate of charge
 - Vehicle rate of charge less than or equal to 40 kW will be considered to have occurred at an L1/L2 charger. A rate of charger greater than 40 kW will be considered to have occurred at a DCFC. Charges occurring at a DCFC are filtered out.

- If the VIN is part of the project inventory of another project registered under VM0038, in which case it is filtered out.
- If the remaining VINs are in a valid format and/or if there are duplicate VINs
 - Invalid or duplicate VINs are filtered out
- If there are duplicate charging events associated with any VIN
 - Duplicate events are filtered out
- If the energy consumed during the charging event is inconceivable given the charging duration or vehicle capabilities
 - Such events are filtered out

BTR notes that these same processes allow for simultaneous internal audit and QA/QC on the data.

The resulting set of EVs and associated data comprise the Project Inventory. The VINs associated with the Project Inventory will be assigned a unique identifier derived from a hash of the VIN. These identifiers will be shared with the VVB and Verra so that other project proponents are able to reference them to avoid double-counting.

For each EV in the Project Inventory, BTR's Technology Team will associate the volume of charging (ECTOD), the location of charging and the date and time of charging.

Based on the location, date and time of charging, BTR's Technology Team will associate data obtained from WattTime's Average Emissions dataset or, if unavailable for any specific location, date or time, the EPA's eGrid dataset, which will provide the average grid emissions in kgCO₂/kWh of the local or regional grid associated with the charging event (EFkwTOD).

BTR's Program Management Team is responsible for sourcing all external data, such as the public charging station list, updated default values for the methodology, and the WattTime time of use emissions factor data.

BTR's Program Management Team processes the data collected by BTR's Technology Team for program compliance according to the provisions of the Methodology. This data consists of:

- The Project Inventory of EVs and associated data. The Project Inventory list is continuously updated as new project instances are added. As noted above, for privacy reasons, a unique identifier will be provided by the EV OEM to BTR for each EV, which will exclude any identifying information. BTR's Program

Management Team will provide an updated list to the VVB of all EVs included within this grouped project during each verification.

- List of EVs sold by the EV OEMs that are part of the grouped project managed by BTR. This list will be continuously updated. For privacy reasons, a unique identifier will be provided by the EV OEM to BTR for each EV that will not include any identifying information such as owner name, address, or the full VIN. An updated list of EVs that come into the project boundary will be provided to the VVB during each verification.
- The charging events associated with the Project Inventory, including the duration, location and amount of charging.
- The grid carbon intensity associated with the location of each charging event. As noted above, BTR proposes to utilize data obtained from WattTime's average emissions dataset or, if not available for a particular charging event, EPA's eGrid dataset which will provide the average kgCO₂/kWh of the grid at the time of the charging event.
- Baseline emissions data, including those prescribed under the Methodology.

BTR's Program Management Team is responsible for performing quality assurance and compiling reports required for project validation and verification.

Finalized reports are reviewed collaboratively by BTR's Commercial and Program Management Teams and checked for accuracy. Approval from BTR senior management is explicitly obtained before any report is submitted to the VVB.

All operations-related tasks are documented in version-controlled procedures which can be provided to the verifier upon request. BTR goes through annual third-party audits of all its operating and reporting processes as a requirement of maintaining TISAX certification.

As noted in Section 1.1, Summary Description, BTR intends to communicate back to the EV OEM – and ultimately to each EV - the carbon intensity of each charging event. BTR and the EV OEMs will also communicate the optimal times for charging EVs with the goal of encouraging a shift in charging to that time, thereby maximizing the emissions reductions associated with charging each EV in the Project Inventory.

Organizational Structure

BTR's Technology, Program Management and Commercial Teams are together responsible for carrying out the monitoring activities, as described above. All three teams are overseen and report into BTR's Chief Executive Officer.

BTR's Technology Team is headed by BTR's Chief Technology Officer, who has more than 15 years of experience leading product design and development of applications, services

and business in energy management and connected devices. His team consists of personnel experienced in design, software development, DevOps, and cybersecurity, and focus on building BTR's core product and data platforms.

BTR's Program Management Team oversees reporting and operations for 18 OEMs and charging stations networks participating in the California, Washington and Oregon Low Carbon and Clean Fuels Standard programs. The team works closely with BTR's Technology and Commercial Teams to develop informative software solutions for clients and expand the benefits their data can have on the environment.

BTR's Commercial Team is led by BTR's Chief Executive Officer, who has over 10 years of experience working with EV OEMs to collect and report EV telematics data as the foundation for measuring and monetizing emissions reductions from vehicle charging. The team manages all BTR's business development, commercial contracting, credit generation and monetization.

Describe the procedures for internal auditing and QA/QC.

BTR's procedures for internal auditing and QA/QC comprise three separate steps.

First, EV telematics data transmitted to BTR by EV OEMs participating in any program managed by BTR (e.g. CA LCFS, WA CFS, VCS) is analyzed by BTR's proprietary ELANTIS protocol, which is designed to spot, log, alert and filter the data for program specific requirements and errors.

Second, BTR's Program Management Team processes the filtered data to calculate the volume of emissions reductions, according to the provisions of the Methodology. The team is also responsible for performing quality assurance and compiling reports required for project validation and verification. All operations-related tasks are documented in version-controlled procedures.

Third, finalized reports are reviewed collaboratively by BTR's Commercial and Program Management Teams. Approval from BTR senior management is explicitly obtained before any report is submitted to the VVB.

It should be further noted that BTR goes through annual third-party audits of all its operating and reporting processes as a requirement of maintaining TISAX certification.

Non-Conformance Events

As noted above, BTR's ELANTIS protocol is designed to ensure conformance with the validated monitoring plan. BTR notes that because it generates credits in compliance low carbon and clean fuels programs, where there are monetary and other penalties for non-conformance and/or invalid data, the ELANTIS protocol is designed to minimize those circumstances.

BTR will conduct quarterly reviews of monitoring data and GHG emission reduction calculations to ensure compliance with the validated project monitoring plan and conformity to its QA/QC processes. Any periods of non-conformance with the plan or processes will be excluded from the emission reduction calculations.

As noted above, BTR receives EV telematics data directly from the vehicles included in each Project Instance and therefore, no sampling approach is used.

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

Section	Information	Justification
1.8, 1.19	Ownership	Ownership is determined and transferred in two separate stages. First, the EV OEMs and terms and conditions related to the collection and use of telematics data from the EVs. These terms and conditions are generally public, but, in any case, are provided as part of the sale of the EV and/or as part of enrollment in specific programs related to the vehicle telematics. Second, the EV OEMs transfer ownership to BTR, Inc. through carbon rights-of-use agreements, which are typically embedded in larger service agreements that are confidential in nature.
1.19	Personally Identifiable Information	The telematics data collected by the EV OEMs and transmitted to BTR, Inc. may include personally identifiable information such as Vehicle Identification Number (VIN), location of charging (which may include location of residence), etc. The safeguarding of this information is provided for in the privacy policies of the EV OEMs terms and conditions of service, and explicitly covered under the confidentiality provisions in BTR's commercial agreements with the EV OEMs.
5.2	EFkwTOD _{j,j,t,y}	BTR, Inc. has a license agreement in place with WattTime for locational time-of-use average grid emissions. The data itself and the contractual provisions are covered under the confidentiality provisions of the agreement.

APPENDIX 2: BRIDGE TO RENEWABLES, INC. (BTR) OVERVIEW

BTR's mission is to help maximize the environmental benefits of EV adoption. Founded in 2015 and headquartered in Washington, DC, BTR provides an industry-leading platform – BTR's Bridge platform – that enables EV OEMs, charging station networks, and renewable electricity generators to work together to reduce GHG emissions and to participate in Low-Carbon or Clean Fuels programs (CFPs).

BTR's team is organized into three overlapping functions: a technology function, which is responsible for data collection and handling; a program management function, which is responsible for data filtering, analysis and reporting; and a commercial function which is responsible for client management and credit monetization.

BTR was an early innovator in establishing the use of embedded vehicle telematics as a source of measurable and verifiable EV charging data used for transportation fuel programs. BTR's Bridge platform collects and processes EV charging and renewable electricity generation data. BTR manages clean fuels program registration, reporting and credit monetization for our clients. BTR serves a dozen EV OEMs, one of the largest charging station networks in the US, and an array of renewable electricity generators to participate in programs such as California's Low Carbon Fuel Standard.

BTR's objectives are to make recurring registration and reporting processes both systematic and transparent. We achieve this through building robust integrations between vehicle telematics data and our Bridge platform to automate its collection, processing, filtering and reporting. As part of the filtering process for residential charging credits under existing Clean Fuels Programs, BTR is required to remove all charging events located within a certain distance from a registered charging station to avoid double-claiming of credits.

BTR incorporates stringent data handling, protection and storage protocols that often are required by both state regulation and state law.