



February 13th, 2025

California Air Resources Board (CARB)

1001 I Street, Sacramento, CA 95814

Submitted Electronically

RE: COMMENTS OF CENTER FOR RESOURCE SOLUTIONS (CRS) ON THE CLIMATE CORPORATE DATA ACCOUNTABILITY ACT (SB253).

Dear CARB Staff,

Center for Resource Solutions (CRS) appreciates the opportunity to provide input on the implementation of SB 253 and SB 261. Our comments focus on the importance of ensuring that market-based emissions accounting, particularly for Scope 2 emissions, is properly integrated into the regulations, and that reporting aligns with widely used GHG accounting standards while addressing California's specific needs.

BACKGROUND ON CRS AND GREEN-E®

CRS is a 501(c)(3) nonprofit organization that creates policy and market solutions to advance sustainable energy. CRS provides technical guidance to policymakers and regulators at different levels on renewable energy policy design, accounting, tracking and verification, market interactions, and consumer protection. CRS also administers the Green-e® programs. For over 25 years, Green-e® has been the leading independent certification for voluntary renewable electricity products in North America. In 2023, Green-e® certified retail sales of nearly 125 million megawatt-hours (MWh), serving over 1.3 million retail purchasers of Green-e® certified renewable energy, including nearly 300,000 businesses.¹

General Support for Required Disclosure of Greenhouse Gas Emissions

CRS generally supports the Climate Corporate Data Accountability Act requirements for disclosure of greenhouse gas emissions. Requiring businesses to publicly disclose their GHG emissions and climate-related financial risk and will give visibility to major annual sources of GHG emissions and climate risks. Below, we provide responses to selected questions in CARB's Information Solicitation that identify several opportunities to strengthen the Proposed Rules and offer recommendations.

¹ See the 2024 (2023 Data) Green-e® Verification Report here for more information: <https://resource-solutions.org/g2024-2/>

Question 3(a): Ensuring California-Specific Needs While Aligning with Evolving External Standards

CARB should require a market-based Scope 2 total for GHG accounting. Scope 2 emissions are the “emissions from the generation of purchased electricity.”² In California and the United States more broadly, electricity is differentiated, transacted, and allocated to consumers’ load contractually. Transactions of electricity generation occur outside the grid, which prevents electricity from being physically directed to specific load/customers and unavoidably mixes all generation together for physical delivery of electricity. This contractual system for transacting specified power and allocating generation to load was deliberately and collectively chosen³ to enable markets for electricity and to facilitate the power of choice on supply of electricity on the grid. Market-based accounting accurately reflects how electricity generation and associated emissions are bought, sold, and consumed in California.

SB253 relies on the Greenhouse Gas Protocol, which requires “dual reporting” of both market-based and location-based scope 2 emissions in markets where differentiated energy products in the form of contractual instruments (including direct contracts, certificates, or supplier-specific information) are available, including the United States.⁴ The market-based method calculates scope 2 emissions using the emissions rates of electricity generation that a company purchases, either from generators or from utilities and other retail suppliers using contractual agreements and instruments. It relies on market data including purchased generation and attributes, load serving entity retail product/portfolio mixes (based on its owned and procured generation and attributes), and regional “residual” (or publicly allocated) mixes of generation (based on regional market transactions of generation attributes). It represents the legally enforceable allocation of emissions from electricity generation to retail electricity customers and is consistent with all existing state policies and programs, including state Clean Energy Standard (CES), Renewable Portfolio Standard (RPS) Programs, and Power Source Disclosure (PSD) programs, resource planning processes, and rules for accounting for emissions associated with imported and delivered electricity (both direct and from regional markets).⁵ Market-based accounting results in the most accurate scope 2 emissions, and it is the most appropriate for climate disclosures required by SB253, as it reflects the companies’ choice and market activity regarding sources of electricity.⁶

² The GHG Protocol Corporate Accounting and Reporting Standard, Revised. World Resources Institute. Pg. 25. Available at: <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>.

³ The contractual system is the result of decades of market development that has been shaped by state and federal laws and regulatory decisions, legal and market based contractual practices, and programs and practices adopted by public and private sector participants in power markets.

⁴ Sotos, M. (2015). GHG Protocol Scope 2 Guidance: An Amendment to the GHG Protocol Corporate Standard. World Resources Institute. Pg. 59. https://ghgprotocol.org/sites/default/files/standards/Scope%20%20Guidance_Final_Sept26.pdf

⁵ CRS. 2023. The Legal Basis for Renewable Energy Certificates. v2.0. Available at: <https://resource-solutions.org/wpcontent/uploads/2015/07/The-Legal-Basis-for-RECs.pdf>

⁶ Sotos, M. (2015). GHG Protocol Scope 2 Guidance: An Amendment to the GHG Protocol Corporate Standard. World Resources Institute. Pg. 8: “A market-based method reflects emissions from electricity that companies have purposefully chosen (or their lack of choice).”

The market-based method can be differentiated from the “location-based” method, which assigns the average emissions rate of all electricity generated in the region (e.g., eGRID subregion) where a company’s operations are located to every MWh used. The location-based method does not reflect any purchasing choices of consumers, or any RPS compliance activity or other specific procurement undertaken by their utility or supplier.

California is actively advancing its hydrogen economy through initiatives like the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES),⁷ which aims to accelerate renewable hydrogen projects and the necessary infrastructure to support a transition to a zero-carbon economy. These efforts are bolstered by federal incentives, notably the Section 45V Clean Hydrogen Production Tax Credit, which provides a production-based federal income tax credit for qualifying hydrogen produced in the United States. To qualify for the 45V credit, hydrogen producers that use electricity in the production process must demonstrate that the electricity is generated from clean sources. This demonstration can be done using Energy Attribute Certificates (EACs), though the regulations establish specific requirements for their use. Requiring market-based accounting for Scope 2 emissions aligns with these federal requirements by recognizing contractual instruments such as renewable energy certificates (RECs) for renewable electricity purchases. This approach not only supports California’s hydrogen initiatives but also ensures that hydrogen producers can fully leverage federal tax incentives, thereby promoting the growth of clean hydrogen production within the state.

Recommendation Regarding Scope 2 Emissions Accounting

1. Require a market-based method for scope 2 emissions calculations. CARB should not permit alternative scope 2 calculation methods to be used without a market-based figure, as those methods will not accurately reflect generation and emissions contractually allocated to electricity customers or customers’ property rights based on their purchasing decisions and those of their retail suppliers.

Question 3(b): Minimizing Duplication of Reporting Requirements

CARB should take steps to align its GHG reporting requirements under SB 253 and SB 261 with existing state and federal programs to prevent unnecessary duplication of reporting obligations while maintaining consistency across regulatory frameworks. Many entities operating in California and their suppliers already submit emissions data the PSD Program. Ensuring alignment across these frameworks will reduce administrative burdens while maintaining accuracy in emissions accounting.

⁷ More information available at: https://www.energy.gov/sites/default/files/2024-07/H2Hubs%20ARCHES_Award%20Fact%20Sheet.pdf



CRS has previously noted that CARB's current approach to accounting for emissions from electricity generation and imported electricity under the Mandatory Reporting Regulation (MRR) for the cap-and-trade program does not align with the Greenhouse Gas Protocol Scope 2 Guidance.⁸ This is due to the differences between source-based and consumption-based accounting.⁹ REC retirement, for example, is not required in order to report zero emissions from a renewable generation resource under the MRR. For Scope 2 reporting under SB 253, emissions of consumers must be calculated based on contractually allocated generation and instruments such as RECs or Power Purchase Agreements (PPAs). To ensure accuracy and consistency, CARB should require that emissions reporting under SB 253 follow market-based accounting principles rather than relying on the MRR.

However, CRS has also previously noted that the accounting rules for imported electricity in the MRR should be changed to require ownership of the associated RECs in order to report a specified renewable import and emissions under cap-and-trade. Such a change would appropriately represent imported renewable electricity delivered to serve load in California that may be claimed by California retail customers. In that case, imported electricity data from the MRR could be used by retail suppliers and consumers, e.g. for scope 2 accounting. Such an approach would improve the consistency of accounting for consumed electricity and emissions in California.

Unlike the MRR, California's PSD Program is intended to provide consumers of retail electricity suppliers with information about their electricity generation sources and associated emissions. However, there are key differences between the PSD program and the GHG Protocol Scope 2 Guidance, which SB 253 relies on. Most notably, unbundled RECs are not included in PSD, and firmed-and-shaped renewable electricity is not factored into the GHG calculations under PSD. As a result, PSD does not capture all eligible RPS-delivered renewable electricity that should be claimable by consumers under SB 253. Additionally, PSD does not account for purchases from entities not regulated under the program, such as direct transactions with generators.

Given these limitations, CARB should allow Scope 2 calculations consistent with the GHG Protocol Scope 2 Guidance, ensuring that entities can report emissions based on market-based purchases, such as RECs or PPAs. While PSD data can serve as a source of utility-specific information within that framework, CARB should acknowledge that it does not fully reflect all claimable renewable electricity. Clarifying these distinctions will ensure that businesses can accurately report their renewable energy procurement and emissions reductions under SB 253.

⁸ See CRS Comments on July 19, 2016 Proposed Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions. Available at: <https://resource-solutions.org/document/comments-to-the-california-air-resources-board-carb-on-45-day-proposed-amendments-to-the-regulation-for-the-mandatory-reporting-of-greenhouse-gas-emissions-mrr/>

⁹ For more information, see CRS's 2022 *Guide to Electricity Sector Greenhouse Gas Emissions Totals*, available here: <https://resource-solutions.org/document/110322/>.



California's RPS compliance framework was designed to track compliance with state-mandated renewable energy targets, rather than to provide a foundation for corporate GHG reporting. However, the data collected under the RPS program is valuable for market-based Scope 2 emissions reporting and should be updated to ensure that utilities' customers can access portfolio-specific emissions data. To better align RPS compliance data with SB 253 reporting requirements, CARB should ensure that RPS procurement data is available at the utility portfolio level so that retail customers can report emissions based on their supplier's actual electricity purchases. Recognizing RPS-compliant renewable electricity purchases within the market-based Scope 2 framework would allow businesses to appropriately claim and report renewable electricity delivered to them through the RPS program, ensuring that reported emissions reductions accurately reflect actual their share of the RPS. This approach could also help address a shortcoming of the PSD program, as not all claimable RPS renewable electricity is currently included in PSD, thereby improving the consistency and transparency of emissions reporting.

To facilitate the implementation of SB 253, CARB should also engage with the Western Renewable Energy Generation Information System (WREGIS) to support its expansion to all-generation tracking. All-generation tracking improves Scope 2 and Scope 3 reporting by providing a complete allocation of electricity generation in the West, based upon which electricity suppliers can do power source and emissions disclosures and electricity consumers can do scope 2 accounting, using supplier-specific data, voluntary procurement and retirement data, and residual mix data. Expanding WREGIS to track all generation sources would enhance corporate emissions disclosures under SB 253 and PSD regulations by reducing uncertainty around energy attribute ownership and preventing double counting in both compliance and voluntary markets. This would also facilitate alignment between California emissions reporting and broader GHG accounting frameworks.

Additionally, consistent with the GHG Protocol Scope 2 Guidance, CARB should encourage entities to disclose whether allowances have been retired on behalf of their voluntary procurements through the Voluntary Renewable Electricity Program (VREP) as additional information about the features and policy context of their energy purchases within Scope 2. As the GHG Protocol Scope 2 and Scope 3 standards continue to evolve, further guidance is expected on impact claims and emissions reductions associated with voluntary renewable electricity purchases. The existing GHG Protocol Scope 2 Guidance already addresses allowance set-asides¹⁰, providing a framework for accounting for emissions reductions. CARB should ensure that its regulations align with these established guidelines and any future updates, allowing entities reporting under SB 253 to accurately reflect renewable electricity procurement and associated emissions reductions in compliance filings.

¹⁰ World Resources Institute. *GHG Protocol Scope 2 Guidance: An Amendment to the GHG Protocol Corporate Standard*. 2015. Available at: https://ghgprotocol.org/scope_2_guidance.



To minimize unnecessary reporting burdens, CARB should provide clear guidance on how entities can use existing emissions data from federal, state, and voluntary programs to meet SB 253 requirements. Specifically, CARB should allow entities to leverage climate-related disclosures in financial reports, to the extent that they are done consistently with CARB rules and GHG Protocol standards. CARB should also enable companies to use RPS compliance data where applicable and ensure alignment with emissions reporting under PSD so that businesses are not subject to conflicting methodologies or receiving conflicting information used to calculate and report electricity-related emissions.

By aligning SB 253 with existing state and federal GHG reporting programs and leveraging WREGIS all-generation tracking and VREP participation, CARB can streamline compliance, reduce duplication, and ensure that emissions reporting remains accurate, transparent, and aligned with best practices in corporate climate disclosure.

Recommendations for Reducing Duplication in Reporting

1. Require Scope 2 emissions reporting under SB 253 to follow established market-based accounting principles, consistent with the GHG Protocol Scope 2 Guidance, rather than the MRR for the cap-and-trade program.
2. Clarify that the current PSD Program does not recognize all purchased electricity, including RPS renewable energy, that may be claimed and reported for market-based Scope 2 emissions reporting under SB 253,
3. CARB should consider updates to the PSD program so that entities can more easily use the program's market-based data for SB 253 compliance.
4. CARB should work to create consistency in consumer-facing emissions calculations by, for example, considering proposed changes to the MRR for reporting specified imports that would enable that information to be used by customers for SB 253 reporting
5. Ensure that RPS compliance data is available to utility customers in a portfolio-specific manner to reflect actual procurement and support accurate market-based Scope 2 reporting.
6. Work with WREGIS to expand all-generation tracking to improve transparency in electricity procurement, prevent double counting, and facilitate alignment with state and federal reporting requirements.
7. Facilitate supplemental disclosure by entities that have had allowances retired on their behalf through the VREP under SB 253 to ensure recognition of voluntary renewable electricity purchases.

Question 3(c): Ensuring Consistency in Reporting Methods

CARB should require entities to use market-based accounting as the standard method for Scope 2 emissions reporting under SB 253 to ensure accuracy, transparency, comparability, and alignment with established GHG accounting frameworks. This method reflects actual electricity procurement through supplier-specific emissions rates (based on supplier contractual arrangements and market activities), PPAs, and RECs, providing an accurate representation of corporate Scope 2 emissions in California.

Recommendations for Reporting Consistency

1. Require the market-based method for Scope 2 emissions reporting.

Question 4: Identifying Costs of Voluntary Reporting and Factors Affecting Compliance

While there is limited public data on the costs of voluntary emissions reporting, several factors influence compliance costs. Verification costs can vary based on complexity and risk, but programs like Green-e® help reduce uncertainties associated with Scope 2 data, which can lower overall verification expenses. Additionally, as noted under Question 3(b), CARB should help address inconsistencies in the PSD program and cap-and-trade to align with Scope 2 market-based accounting and support expanded all-generation tracking in WREGIS to improve data accuracy. Leveraging these improved data sets will help reduce reporting and compliance costs for entities by ensuring more consistent and transparent emissions accounting.

Recommendations for Reducing Reporting and Compliance Costs

1. Support the use of third-party verification programs like Green-e® to lower risks associated with Scope 2 data and reduce verification costs.
2. Address inconsistencies in the PSD program and the MMR to ensure those programs align with Scope 2 market-based accounting and prevent conflicting reporting requirements.
3. Expand all-generation tracking in WREGIS to improve data transparency and reduce compliance costs by providing a more standardized and accurate approach to emissions reporting.
4. Enhance the use of state-run data resources to streamline reporting requirements and minimize administrative burdens for reporting entities.

Question 5 and 6: Direct Reporting vs. Third-Party Organizations

CARB should leverage independent third-party organizations to support emissions reporting and verification, ensuring transparency, data integrity, and consistency with established GHG accounting standards. Independent reporting bodies can help streamline the reporting process, reduce administrative burdens, and improve data accuracy without adding unnecessary complexity to the regulatory framework.



The Climate Registry (TCR) was originally established as the California Climate Action Registry to help California entities report their emissions. TCR also has ongoing experience managing California's emissions inventory for CalEPA. TCR already provides infrastructure for standardized emissions tracking and could play a critical role in ensuring consistency across reporting entities. CARB should engage with TCR to assess how its existing framework can be adapted to meet SB 253 requirements while maintaining compatibility with other state and federal reporting programs.

CARB should also consider organizations such as CDP and other independent entities that prioritize governance transparency, public accountability, and adherence to GHG Protocol standards. Any third-party organization involved in reporting should be independent, mission-driven, and operate with clear data transparency standards. Reporting entities should not be required to use proprietary models or systems that limit public oversight or obscure emissions calculations, particularly for Scope 2 and Scope 3 reporting, as these categories often involve complex supply chain emissions, market-based electricity accounting, and indirect emissions from upstream and downstream activities. The use of proprietary methodologies can create barriers to verification, reduce comparability between reporting entities, and hinder regulatory agencies, investors, and the public from fully understanding the accuracy and credibility of reported data. Instead, reporting frameworks should emphasize open methodologies aligned with internationally recognized standards to ensure consistency, transparency, and accessibility of emissions data. This approach would allow for better scrutiny, facilitate more accurate benchmarking across industries, and support informed decision-making for stakeholders aiming to track progress toward climate commitments

While third-party verification should not be mandated in all cases, organizations providing verification services should adhere to clear governance principles, avoid conflicts of interest, and ensure that emissions reporting remains verifiable and credible. A narrow rule for verification could be developed to allow for simplified processes where verification is not required while maintaining rigorous standards for data accuracy in cases where third-party validation is necessary.

Recommendations for Reporting and Verification

1. Utilize TCR as a reporting body, given its experience managing California's emissions inventory and ensuring consistency in statewide emissions tracking.
2. Engage with CDP and other independent organizations that emphasize governance transparency, public accountability, and adherence to GHG Protocol standards.
3. Require reporting entities to use organizations with independent governance structures that avoid conflicts of interest and ensure public access to emissions data.
4. Prohibit the use of proprietary models or "black box" data systems that restrict transparency, particularly for Scope 2 and Scope 3 reporting.



5. Establish a narrow rule for third-party verification to balance the need for rigorous emissions data accuracy with the goal of minimizing unnecessary administrative burdens.

Question 7: Standardizing Scope 1, 2, and 3 Reporting

CARB should ensure that emissions reporting aligns with well-established market-based GHG accounting frameworks of the GHG Protocol to maintain consistency across regulatory and voluntary reporting programs. Standardization will help prevent discrepancies between state-level requirements and corporate reporting obligations under federal and international frameworks.

- Scope 1: Market-based accounting should be used to ensure direct emissions reporting aligns with industry best practices. EACs for clean fuels, such as biomethane (RNG) and hydrogen, play a critical role in tracking environmental attributes and ensuring accurate Scope 1 reporting. The forthcoming Clean Energy Accounting Project (CEAP)¹¹ guidance provides a framework for using contractual instruments, ensuring transparency and preventing double counting of emissions benefits.
- Scope 2: CARB should require market-based accounting for Scope 2 reporting, including the mandatory retirement of RECs to substantiate emissions associated with use of renewable electricity. This approach ensures that emissions are accurately allocated based on contractual electricity procurement.
- Scope 3: All EACs¹² should be incorporated into Scope 3 reporting methodologies to reflect emissions reductions associated with voluntary renewable energy purchases.

Recommendations for Scope 1, 2, and 3 Standardization

1. Align Scope 1, 2, and 3 reporting with GHG Protocol standards to ensure compatibility with voluntary and regulatory reporting frameworks.
2. Require market-based accounting for Scope 2, with mandatory REC retirement to substantiate renewable electricity claims.
3. Ensure Scope 3 reporting includes EACs to recognize voluntary renewable energy procurement.

¹¹ CEAP Market-based Accounting for Clean Fuels will be available in coming weeks at: <https://resource-solutions.org/programs/ceap/>. In the interim, please feel free to reach out to CRS with any questions.

¹² For more information on Scope 3 accounting, see Greenhouse Gas Protocol, *Corporate Value Chain (Scope 3) Accounting and Reporting Standard: Supplement to the GHG Protocol Corporate Accounting and Reporting Standard* https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf and Russell, Stephen. *Estimating and reporting the comparative emissions impact of products*, World Resources Institute Working Paper, January 2019. https://ghgprotocol.org/sites/default/files/2023-03/18_WP_Comparative-Emissions_final.pdf. Also, The EPA's Renewable Electricity Procurement on Behalf of Others: A Corporate Reporting Guide describes how one type of EAC, a REC can be applied to Scope 3 reporting. Available at: https://www.epa.gov/system/files/documents/2022-05/renewable_electricity_procurement.pdf



Question 8: Third-Party Verification for Scope 3 Emissions

Ensuring the accuracy and reliability of Scope 3 emissions data is critical due to the complexity of supply chain emissions. CARB should establish clear criteria for verification while leveraging existing assurance frameworks to reduce reporting burdens.

Green-e® provides assurance for renewable electricity and renewable fuels and can serve as a key resource in verifying renewable energy claims within Scope 3 reporting. However, Green-e® is not a verification entity¹³, and CARB should recognize that third-party verification of Scope 3 emissions requires specialized expertise in supply chain emissions assessments.

CARB should work with organizations experienced in verifying Scope 3 emissions to develop guidance on best practices for third-party assurance. This should include requirements for independent governance, transparency, and public accountability to ensure reported data meets rigorous verification standards.

Recommendations for Scope 3 Verification

1. Consider Green-e® certification as a tool for ensuring the credibility of Scope 3 reporting related to renewable electricity and fuels.
2. Identify third-party verifiers with expertise in auditing complex supply chains and indirect emissions data.
3. Establish clear verification criteria to ensure transparency and consistency in Scope 3 reporting methodologies.

Question 9: Voluntary Emissions Reporting and SB 253 Implementation

CARB should align its implementation of SB 253 with voluntary reporting best practices to ensure consistency across state and corporate emissions disclosures. Many businesses already report Scope 1 and 2 emissions under voluntary frameworks. Aligning SB 253 with these frameworks will help reduce duplication and improve reporting efficiency.

CARB should provide flexibility in reporting timeframes to align with business reporting cycles, such as allowing entities to report emissions based on a fiscal year rather than a calendar year. While standardizing reporting periods can improve consistency, requiring a fixed calendar year timeline may

¹³ Verification entities for SB 253 are independent third parties that audit and provide assurance on full GHG emissions inventories (Scope 1, 2, and 3) to ensure compliance with recognized standards such as the GHG Protocol and ISO 14064. They assess emissions data, methodologies, and reporting accuracy, providing assurance levels required for regulatory compliance. In contrast, Green-e® certification verifies renewable energy claims by ensuring that RECs and renewable fuels are properly issued, retired, and not double-counted. While Green-e® supports market-based Scope 2 reporting, it does not serve as a full GHG verification entity for SB 253 compliance.



create unnecessary administrative burdens and increase compliance costs for businesses that operate on different reporting schedules.

Separately, CARB should also recognize that renewable energy procurement and accounting typically follow an annual reporting structure. In the voluntary market, renewable energy is purchased on an annual basis, with buyers retiring RECs at the end of a calendar year to match consumption. Green-e® certification follows a similar structure, verifying that RECs are retired within a specific timeframe to substantiate renewable electricity claims. CARB should ensure that its reporting requirements align with these established voluntary market practices, maintaining consistency in how entities account for renewable electricity use and emissions reductions.

Additionally, the software systems used for reporting should come from independent organizations with strong governance structures. CARB should avoid requiring the use of proprietary models or "black box" data systems that lack transparency, particularly for Scope 2 and Scope 3 emissions reporting.

Recommendations for Voluntary Emissions Reporting

1. Align SB 253 reporting methods with voluntary best practices to ensure consistency with corporate climate disclosures.
2. Allow entities flexibility in choosing a reporting period, such as fiscal year versus calendar year, to reduce administrative burdens and improve alignment with business reporting cycles.
3. Ensure that reporting requirements for renewable energy procurement align with voluntary market practices, including annual REC retirement and Green-e® certification timelines.
4. Require reporting software systems to be independent, governed by transparent standards, and free from proprietary "black box" data models.

We thank you for this opportunity to provide comments on SB253. Please feel free to reach out to us with any questions or comments.

Sincerely,
Lucas Grimes,
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