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Submitted via CARB Public Comment Web Portal

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Re: Public Comments to March 23, 2026 Climate Disclosure Workshop

Dear Dr. Vergis and CARB Staff:

Environmental Defense Fund (“EDF”) respectfully submits the following comments to the California Air Resources Board (“CARB”) in response to its March 23, 2026 request for public input on the California Greenhouse Gas Reporting (“GHG”) Program implementing Senate Bill (“SB”) 253.¹ Founded in 1967, EDF is a nonprofit organization with more than 2.5 million members nationwide, including approximately half a million in California. EDF has offices across the country, including in California, and a staff of scientists, economists, policy experts, and other professionals. EDF works to strengthen people’s ability to thrive in a changing climate and has long sought to improve disclosure and understanding of climate-related risks.

EDF thanks CARB staff for their diligent work on this vital disclosure program. When large companies disclose more and better climate risk data, including GHG emissions, investors (including workers and retirees with savings in the market), consumers, the broader public, and the reporting companies themselves will all benefit. Many companies already disclose Scopes 1, 2, and 3 GHG emissions, and a multitude of resources exist to support companies in advancing their GHG disclosure practices – including from EDF.² In a landscape of widespread but uneven corporate GHG emissions reporting, CARB’s program will bring improved consistency and reliability.

¹ *Climate Disclosure Meetings and Workshops*, CARB, <https://ww2.arb.ca.gov/our-work/programs/corporate-ghg-reporting/climate-disclosure-meetings-and-workshops> (last visited Apr. 6, 2026).

² *See, e.g.*, EDF, *Measure Emissions*, Net Zero Action Accelerator, <https://netzeroaction.org/pathways/measure-emissions/> (last visited Apr. 6, 2026); EDF, *Map and Prioritize Value Chain Emissions*, Net Zero Action Accelerator, <https://netzeroaction.org/pathways/map-and-prioritize-value-chain-emissions/> (last visited Apr. 6, 2026).

Overall, the approaches to various aspects of GHG reporting that staff presented on March 23 reflect both rigor and pragmatism and align with the widely used GHG Protocol. EDF's initial responses to certain of staff's requests for feedback follow. EDF intends to supplement these initial comments with additional material by CARB's informal June 1 deadline.

I. Request for Feedback: February 2026 Board Hearing Outcomes (Slide 6)

1. Are there topics from the initial regulation adopted at the February 2026 Board hearing that need to be revisited, including reporting deadlines post 2026, applicability definitions, and/or exemptions?

For the reasons detailed in our comments on the initial rule proposal regarding insurer GHG emissions reporting,³ EDF encourages CARB to promptly undertake and provide updates on the Department of Insurance consultations directed by the February 2026 Board resolution. If CARB determines that current required insurer reports do not meet all SB 253 criteria, EDF suggests removing the exclusion of insurance companies in future SB 253 reporting regulations. EDF supports all other elements of the initial rule, including the other exclusions, incorporation of Revenue and Taxation Code definitions, and alignment of the SB 253 reporting deadline with the verification deadline for CARB's Mandatory Reporting Regulation.

II. Request for Feedback: GHG Accounting (Slide 23)

By accepting good faith efforts this year and building a more structured approach for future years, CARB is providing a workable on-ramp while driving progress towards more consistent, comparable disclosures. CARB's proposals on selection of organizational boundaries, GHG accounting, and emissions factors afford companies flexibility and align with the widely used GHG Protocol as directed by SB 253.

As an overarching principle, EDF encourages CARB to maximize alignment of its SB 253 implementation – particularly any mandatory rules – with other widely used reporting frameworks within the bounds set by the statute. This includes the GHG Protocol,⁴ which SB 253 explicitly incorporates,⁵ as well as “other national and international reporting

³ See Letter from EDF to CARB (Feb. 9, 2026), https://scs-public.s3-us-gov-west-1.amazonaws.com/env_production/oid377/did200184/pid_213090/assets/merged/z3opiojctre_document.pdf?v=21876.

⁴ See The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard: Revised Edition (2004), p. 63, <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf> (listing required and optional information fields for inclusion in a report following the GHG Protocol) [hereinafter “GHGP Corporate Standard”]; The Greenhouse Gas Protocol, Required Greenhouse Gases in Inventories: Accounting and Reporting Standard Amendment (2013), https://ghgprotocol.org/sites/default/files/2022-12/Required%20gases%20and%20GWP%20values_o.pdf [hereinafter “GHGP 2013 Amendment”].

⁵ CA Health & Safety Code § 38532(c)(2)(A)(ii) (“A reporting entity shall, beginning in 2026, measure and report its emissions of greenhouse gases in conformance with the Greenhouse Gas Protocol standards and guidance, including the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard and the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard ...”).

requirements,”⁶ like the International Sustainability Standards Board disclosure standards that consolidated multiple previous voluntary frameworks and are in use in an increasing number of jurisdictions.⁷ The interoperability fostered by such alignment enhances both feasibility for reporters and functionality for end-users.

As another overarching principle, flexibility in selection of methods should be paired with transparency to strengthen the decision-usefulness of emissions data. While flexibility is valuable, allowing companies to adopt improved methodologies as technology advances, frequent or unstructured changes in reporting methods can undermine comparability and obscure emissions trends. To maintain the integrity and comparability of emissions disclosures, CARB should require reporting entities to clearly disclose their chosen reporting methods, along with any changes made year-over-year, the justification for those changes, and an assessment of the effect the change has relative to the previous methodology that was employed. Specifically, to enable meaningful comparison when an entity makes a significant change in methods, CARB should consider requiring it to recalculate base year emissions and to report emissions according to both its old method and its new method for at least one transition year.⁸

Organizational Boundaries

1. Are there other approaches to organizational boundary setting that CARB should consider?

CARB’s proposal to allow companies to select between equity share, operational control, or financial control approaches to setting organizational boundaries appropriately aligns with the GHG Protocol. CARB should require related corporate entities – parents and subsidiaries – to use the same approach to organizational boundary setting.⁹ For recommendations on ensuring clear disclosures of parent/subsidiary information, please see EDF’s response to question 2b in CARB’s first request for input on the climate disclosure program.¹⁰

⁶ CA Health & Safety Code § 38532(c)(2)(D)(i) (directing CARB to ensure “[t]hat the emissions reporting is structured in a way that minimizes duplication of effort and allows a reporting entity to submit to the emissions reporting organization, if contracted for services, or the state board, reports prepared to meet other national and international reporting requirements, including any reports required by the federal government, as long as those reports satisfy all of the requirements of this section.”).

⁷ IFRS, IFRS Sustainability Standards Navigator, <https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/> (last visited Apr. 8, 2026); IFRS, Use of IFRS Sustainability Disclosure Standards by jurisdiction, <https://www.ifrs.org/ifrs-sustainability-disclosure-standards-around-the-world/use-by-jurisdiction/> (last visited Apr. 8, 2026).

⁸ See GHG Protocol, *Chapter 5: Tracking Emissions Over Time*, A Corporate Accounting and Reporting Standard: Revised Edition (2004), <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf> (providing explanation on what types of changes are significant enough to warrant a base year recalculation and potentially other contextual disclosures); see also *Corporate Standard Frequently Asked Questions*, GHG Protocol, <https://ghgprotocol.org/corporate-standard-frequently-asked-questions> (last visited Apr. 7, 2026) (addressing base year recalculations in questions 17-19).

⁹ See *Determine Organizational Boundaries*, U.S. EPA, <https://www.epa.gov/climateleadership/determine-organizational-boundaries> (last visited Apr. 7, 2026).

¹⁰ Letter from EDF to CARB at 6-7 (Mar. 21, 2025), <https://ww2.arb.ca.gov/form/public-comments/submissions/22566>.

2. How should entities explain their choice of organizational boundary?

As noted above, an entity should clearly disclose its chosen organizational boundary approach, explain the reason for a change in approaches, and if the change is significant, CARB should consider requiring the entity to recalculate its base year and report using both the old and the new approach for at least one transition year.

Accounting Methods

1. What additional information for Scope 1 and 2 reporting should CARB consider in developing final reporting templates?

In response to CARB's October 10, 2025 draft templates, EDF provided feedback on topics including market-based versus location-based Scope 2 emissions, contractual instruments for renewable energy, materiality definitions, biogenic emissions, individual GHGs, global warming potential values, mitigation outcomes, and market-based instruments.¹¹ Those recommendations are relevant here as well.

2. Should CARB consider allowing other accounting methods? If so, which ones and why?

CARB should not allow other accounting methods for Scope 3 beyond those already under consideration (spend-based, activity-based, supplier-specific, or hybrid). While reporters often take varying approaches and use hybrid methodologies within these categories of methods, these four broad methods already encompass the full range of allowable options currently represented in the GHG Protocol. These methods can be supplemented by additional, optional emissions disclosures in line with EDF feedback provided in response to CARB's October 10, 2025 draft templates.¹²

Emission Factors

1. What criteria should emission factors meet to be used in this program?

A key criterion for emissions factors is accuracy. For upstream oil and gas methane emissions, CARB should accept and encourage the use of basin-specific, measurement-based emissions factors where such data are available. A large body of scientific evidence, including Alvarez et al. 2018, Rutherford et al. 2021, and Omara et al. 2024, finds that real-world methane emissions from oil and gas production are often 1.5 to 2 times higher than conventional emissions-factor-based inventories developed using U.S. EPA methodologies.¹³ The agency should recognize the

¹¹ Letter from EDF to CARB (Oct. 27, 2025), <https://ww2.arb.ca.gov/form/public-comments/submissions/53821>.

¹² See *id.*

¹³ Ramón A. Alvarez et al., *Assessment of methane emissions from the U.S. oil and gas supply chain*, 361 SCIENCE 186 (2018), <https://www.science.org/doi/10.1126/science.aar7204>; Jeffrey S. Rutherford et al., *Closing the methane gap in US oil and natural gas production emissions inventories*, 12 NATURE COMM'NS 4715 (2021), <https://www.nature.com/articles/s41467-021-25017-4>; Mark Omara et al.,

limitations of traditional emissions factors for oil and gas methane and encourage companies to use basin-specific, independently verified, measurement-based factors where available. CARB should also support continued development of these basin-specific factors over time, as this is an important area for improving the accuracy and credibility of methane emissions reporting.

2. How should reporters document and explain when changing EFs from a prior year?

As noted above, entities should disclose and provide the reason for a change in reporting approach, including a change in emission factors, and take further steps to enable meaningful comparison – like base year recalculation or reporting using both new and old methods for a transition year – if the change is significant.¹⁴

III. Request for Feedback: Scope 3 Reporting Options (Slide 28)

Of the Scope 3 reporting options set forth in staff's presentation, Option 1 aligns best with other reporting frameworks and the goal of SB 253. Scope 3 emissions are key to understanding the full picture of a company's carbon footprint and transition risks, from upstream methane emissions to use of sold products and beyond. A "phase-in" approach is not needed or justified here, but if pursued, should be at most a short on-ramp designed explicitly to lead promptly the endpoint of Scope 3 reporting across sectors and categories.

Option 1: Broad Applicability

1. Should reporting entities be able to report as de minimis certain categories due to lack of relevance/materiality and/or feasibility?
2. What specific thresholds, definitions, or decision frameworks should CARB use to determine when a Scope 3 category is considered de minimis to be reported?

Option 1, which calls for Scope 3 reporting across all sectors and categories, while allowing reporting entities to make justified exclusions, is the best of the proposed options. CARB should not reinvent the wheel with new *de minimis* thresholds, definitions, or decision frameworks, but should rather integrate existing GHG Protocol principles in its instructions to entities on permissible exclusions. One of the GHG Protocol's accounting and reporting principles is completeness: "Account for and report on all GHG emission sources and activities within the chosen inventory boundary. Disclose and justify any specific exclusions."¹⁵ In the context of the investor- and consumer-informing purposes of SB 253, lack of relevance or materiality from the perspective of those end-users, or infeasibility of providing meaningfully informative data, could be justifications for exclusions. Beyond the scale of emissions, considerations of risk, influence,

Constructing a measurement-based spatially explicit inventory of US oil and gas methane emissions (2021), 16 EARTH SYS. SCI. DATA 3973 (2024), <https://essd.copernicus.org/articles/16/3973/2024/>.

¹⁴ See *Corporate Standard Frequently Asked Questions*, GHG Protocol, <https://ghgprotocol.org/corporate-standard-frequently-asked-questions> (last visited Apr. 7, 2026) (addressing whether new emission factors could necessitate base year recalculation in question 18).

¹⁵ See GHG Protocol, *A Corporate Accounting and Reporting Standard: Revised Edition 7 (2004)*, <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>

and stakeholder perception can affect the materiality of a Scope 3 emissions category – in other words, if a category is small quantitatively for a company but presents a unique risk or value to key stakeholders, it should likely be disclosed. In the Scope 3 Standard, GHG Protocol specifically cites size, influence, risk, stakeholders, outsourcing, and sector guidance as criteria for identifying relevant Scope 3 emissions.¹⁶

3. How should CARB weigh reporting flexibility against alignment with current mandatory and voluntary practices and other international standards?

The approach of requiring Scope 3 disclosures across sectors and categories with some flexibility for exclusions of insignificant or immaterial emissions seems approximately aligned with the GHG Protocol, as noted above, as well as with the ISSB standards. The ISSB standards require companies across sectors to consider all Scope 3 categories, determine which are relevant, and disclose emissions subject to materiality. In other words: “An entity is required to include the GHG emissions associated with each relevant category in its Scope 3 GHG emissions if this disclosure would provide primary users with material information.”¹⁷ This framing appropriately centers the decision to include or exclude data based on its materiality to the end user. Where possible, CARB should aim to align its approach to *de minimis* or immaterial exclusions with existing materiality definitions used by other international standards such as ISSB to ensure interoperability.

Option 2: Sectoral Phase-In

1. Are these sectors the appropriate starting point for a phased approach to Scope 3 reporting? What factors should CARB consider in confirming or adjusting this prioritization?

Requiring only entities from certain sectors to report Scope 3 emissions would not align well with the cross-sectoral reporting program set forth by SB 253. The sectors identified for this option may or may not align with those that have the highest Scope 3 emissions specifically (it is not clear whether the data provided pertains to all scopes or only certain ones), those that investors rate as having the highest transition risk or for which Scope 3 data is most relevant, or those that have the highest existing rates of Scope 3 reporting. Fundamentally, restricting reporting to any subset of sectors would be inconsistent with the design of and benefits meant to be delivered by SB 253, and would not be a sensible way to build readiness of all covered entities for Scope 3 reporting.

¹⁶ See GHG Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard 61 (2011), https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf.

¹⁷ See IFRS, Greenhouse Gas Emissions Disclosure Requirements Applying IFRS S2 Climate-Related Disclosures (2025), <https://www.ifrs.org/content/dam/ifrs/supporting-implementation/ifrs-s2/ghg-ifrs-s2-educational-material.pdf>.

Option 3: Category Phase-In

1. Are these the appropriate categories to prioritize for initial reporting based on data availability and relevance across sectors?

Option 3, requiring all entities to disclose only a certain set of Scope 3 categories, would not be as effective of an approach as Option 1. Frequency of reporting – the metric used for selecting these proposed priority categories – does not necessarily correlate with relevance. For example, use of sold products (category 11) is a key Scope 3 category for many sectors that is not on this proposed list and should be prioritized under such an approach.¹⁸ Additionally, some categories are highly relevant in some sectors and less so in others. For example, investments (category 15), which is fourth from last on this frequency-based ranking, is likely to be the most relevant category for many financial sector entities. As noted above, the GHG Protocol already includes principles for entities to determine whether a category may be excluded; EDF recommends that CARB follow a similar approach, as it has contemplated in Option 1, rather than excluding categories across the board *ex ante*, as outlined in Option 3.

If CARB were to pursue a category-based phase-in, EDF would recommend that CARB consider materiality of categories as a key criterion for selection. For example, a 2024 FTSE Russell analysis of the two most material Scope 3 reporting categories for each of 13 sectors found:¹⁹

- Purchased goods and services (category 1) was the most material category for 11 sectors;
- Capital goods (category 2) and fuel- and energy-related activities (category 3) were the most material category for one sector each;
- Use of sold products (category 11) was the second most material category for 9 sectors; and
- Downstream leased assets (category 9), franchises (category 14), processing of sold products (category 10), and upstream transport and distribution (category 4) were the second most material category for one sector each.

Each analyzed sector's top two most material categories covered between 72-89 percent of its overall Scope 3 emissions intensity.

¹⁸ See FTSE Russell, *Scope for Improvement: Solving the Scope 3 Conundrum 14* (2024) https://www.lseg.com/content/dam/ftse-russell/en_us/documents/research/solving-scope-3-conundrum.pdf (presenting a “[c]lassification of material GHG categories by sector”).

¹⁹ *Id.* The sectors analyzed were technology, telecommunications, health care, real estate, consumer discretionary, travel and leisure, consumer staples, industrials, basic resources, chemicals, energy, utilities, and waste and disposal services.

IV. Request for Feedback: Assurance (Slide 31)

1. Are there assurance standards or frameworks not currently included in staff's proposed list that should be recognized and why?

Staff's proposed list appropriately captures the core assurance standards currently used for GHG and sustainability disclosures across markets. Any additions should focus on interoperability with existing emissions reporting programs and alignment with international assurance frameworks under development.

2. What cost ranges are reporting entities currently experiencing for limited assurance engagements?

Regulatory impact analyses conducted by the U.S. Securities and Exchange Commission (SEC) and the European Union (EU) in connection with their development of climate- and sustainability-related disclosure standards provide datapoints on estimated assurance costs. However, these datapoints must be interpreted in light of the respective requirements and implementation contexts of these programs.

The SEC's economic analysis for its final climate risk disclosure rule in 2024 estimated compliance costs for its limited assurance requirements for Scope 1 and 2 emissions to be \$50,000 per entity.²⁰ The SEC considered information submitted by numerous commenters on the proposed rule, and noted that it had taken "a conservative approach (*i.e.*, erring on the side of overstating costs rather than understating them) to estimate approximate compliance costs for the final rules."²¹

The EU Corporate Sustainability Reporting Directive (CSRD) requires assurance of a significantly broader set of sustainability disclosures—including governance, risk management, and value-chain information—than the GHG-focused reporting in California. As a result, EU cost estimates should be interpreted as an upper-bound reference point rather than a direct proxy for current costs associated with assurance of GHG emissions reporting alone. European Commission and EFRAG cost analyses estimated that companies subject to CSRD are expected to incur first-year limited assurance costs of approximately €100,000,²² with higher costs for large or complex entities. These estimates reflect a comprehensive sustainability reporting regime covering a broad set of environmental, social, and governance disclosures.

Many SB 253 reporting entities are already subject to the CSRD or other regimes requiring assurance of GHG emissions disclosures; for those entities, incremental costs of complying with

²⁰ SEC, The Enhancement and Standardization of Climate-Related Disclosures for Investors, 89 Fed. Reg. 21,668, 21,875.

²¹ 89 Fed. Reg. at 21,874.

²² EFRAG, Cost-Benefit Analysis on the Draft Amended European Sustainability Reporting Standards (2025), <https://www.efrag.org/sites/default/files/media/document/2025-12/Cost-benefit%20Analysis%20on%20Draft%20Amended%20ESRS.pdf>

the California GHG emissions disclosure and assurance requirements will likely be substantially reduced. CARB should account for this in setting the baseline for economic analysis of its rules.

3. What factors are driving assurance costs, and how do costs vary across entity size, sector, and assurance level?

In estimating assurance costs for disclosures, other regulators like the SEC have identified a number of internal and external characteristics that can increase or decrease costs. Increased organizational complexity, including factors like the number of facilities or operating locations, geographic dispersion of operations, and number of business units or subsidiaries, can increase assurance costs. However, larger or more complex organizations may also have more sophisticated internal controls or data that can reduce assurance costs, such as established methodologies and emission factors, high-quality recordkeeping and audit trails, more automated data systems, and internal expertise in relevant areas. Companies developing new reporting systems for the first time typically experience higher initial costs; for covered entities already reporting and obtaining assurance for GHG emissions in other jurisdictions, incremental costs to comply with CARB's program will likely be lower. Finally, as the SEC noted in its 2022 proposed rule, assurance costs may decline over time "to the extent that the market for assurance services matures with respect to institutional knowledge, procedural efficiency, and overall competition."²³

V. Request for Feedback: Economic Analysis (Slide 38)

CARB's economic analysis should estimate not only the potential compliance costs but also the substantial economic benefits of this disclosure program.

Factors influencing the cost of compliance with climate-related disclosure standards include company size, reporting complexity, and verification requirements. Reporting tends to be more expensive for larger companies, especially those with extensive supply chains, though such entities may also have more sophisticated data, monitoring, and compliance functions to facilitate reporting – and in many cases are already reporting climate risk data under another framework, making for lower incremental costs. The breadth and detail of disclosure required also affects costs, with GHG emissions reporting alone being less resource-intensive than the more comprehensive sustainability disclosures required by, for example, the EU Corporate Sustainability Reporting Directive.

While climate-related disclosure standards come with compliance costs, they also generate financial benefits for both covered entities and the end-users of the disclosed data, as well as the broader economy. EDF agrees with staff's Initial Statement of Reasons for the regulation adopted in February that this disclosure program will "provide accurate, comparable, and

²³ SEC, The Enhancement and Standardization of Climate-Related Disclosures for Investors, 87 Fed. Reg. 21,334, 21442 (Apr. 11, 2022).

decision-useful climate information to investors, lenders, insurers, and the public in California” and “ultimately result in beneficial reductions in GHG emissions.”²⁴

Investors – including workers and retirees with savings invested in the market – benefit from the improved, more cost-effective risk assessments and more accurate pricing that standardized disclosures enable. Consumers, too, are able to make more informed business decisions. For regulated entities, a well-structured reporting framework reduces administrative burdens by streamlining compliance processes and minimizing ad hoc data requests from investors and regulators, as well as providing opportunities for benchmarking against competitors, demonstrating value to investors, and identifying ways to reduce emissions. Overall, the availability of more consistent, higher quality climate risk information improves economic efficiency and resilience.

For a detailed presentation of evidence establishing the benefits of climate risk disclosure standards, please see the amicus brief that EDF submitted in the Ninth Circuit Court of Appeals on October 23, 2025,²⁵ which is attached to this submission. For additional discussion of relevant cost-benefit considerations, please see comments filed by the Institute for Policy Integrity on CARB’s first request for input on the disclosure program.²⁶

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EDF thanks CARB for its efforts to implement this vital disclosure program and its consideration of public input. As noted above, EDF intends to submit additional materials by the informal June 1 deadline. Please do not hesitate to contact us to discuss further.

Respectfully submitted,

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²⁴ CARB, Public Hearing to Consider the Proposed California Corporate Greenhouse Gas Reporting and Climate-Related Financial Risk Disclosure Initial Regulation, Staff Report: Initial Statement of Reasons at 16 (Dec. 9, 2025), <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2025/sb253-261/isor.pdf>.

²⁵ Br. of Amicus Curiae Env’t Def. Fund in Support of Defendants-Appellees, *Chamber of Commerce of the United States v. Sanchez*, No. 25-5327 (9th Cir. Oct. 23, 2025), <https://library.edf.org/AssetLink/v52b68n2eit7go7lwm5w77ij3xr71nd2.pdf>.

²⁶ See Letter from Institute for Policy Integrity at NYU School of Law to CARB (March 14, 2025), <https://ww2.arb.ca.gov/form/public-comments/submissions/21606>.