March 19, 2025

California Air Resources Board (CARB)
1001 I Street, Sacramento, CA 95814
Submitted Electronically

RE: Comments on California Climate-Disclosure Information Solicitation

Dear CARB Staff,

We appreciate the opportunity to provide input on the implementation of SB 253 and SB 261. As scholars, our approach to this information solicitation is to focus on academic results from the fields of accounting and finance that are directly relevant to the questions raised by the Board. Below, we only provide responses to comments when results from academic studies conducted by ourselves or colleagues allow us to make a clear recommendation. We include a reference list at the end of this letter.

Background on the authors

Thomas Bourveau is an Associate Professor at the Graduate School of Business at Columbia University. His research lies at the intersection of accounting, law, and economics. His research notably examines the role of voluntary disclosure and verification of financial and non-financial (e.g., carbon emission) information in both regulated and unregulated markets, with a broad focus on capital, product and labor markets.

Brandon Gipper is an Associate Professor at the Graduate School of Business at Stanford University. His research examines issues related to the trustworthiness of firm reporting, including how various corporate governance tools enhance or interact with reporting quality. In recent work, he has examined the use of assurance in sustainability reporting and its impact on emissions reporting quality.

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General: Applicability

1. SB 253 and 261 both require an entity that "does business in California" to provide specified information to CARB. This terminology is not defined in the statutes.

a. Should CARB adopt the interpretation of "doing business in California" found in the Revenue and Tax Code section 23101?

b. Should federal and state government entities that generate revenue be included in the definition of a "business entity" that "does business in California?"

c. Should SB 253 and 261 cover entities that are owned in part or wholly owned by a foreign government?

d. Should entities that sell energy, or other goods and services, into California through a separate market, like the energy imbalance market or extended day ahead market, be covered?

2. What are your recommendations on a cost-effective manner to identify all businesses covered by the laws (i.e., that exceed the annual revenue thresholds in the statutes and do business in California)?

a. For private companies, what databases or datasets should CARB rely on to identify reporting entities? What is the frequency by which these data are updated and how is it verified?

b. In what way(s) should CARB track parent/subsidiary relationships to assure companies doing business in California that report under a parent are clearly identified and included in any reporting requirements?

General: Standards in Regulation

3. CARB is tasked with implementing both SB 253 and 261 in ways that would rely on protocols or standards published by external and potentially non-governmental entities.

a. How do we ensure that CARB's regulations address California-specific needs and are also kept current and stay in alignment with standards incorporated into the statute as these external standards and protocols evolve?

> Response: We recommend adopting–and revisiting when necessary, e.g., if new commonly used external standards or protocols were to become dominant in practice–the most commonly used external standards. To ensure CARB's regulations remain California-specific while staying current with evolving external standards, a structured vetting process is key. From academic accounting literature, IFRS adoption suggests that while common standards enhance comparability and reduce jurisdictional tailoring, they provide clarity and consistency for many stakeholders (e.g., De George et al., 2016). A CARB-specific equivalent to a "California Carbon Accounting Standards Board" could assess updates to incorporate standards, determining their relevance and necessary modifications (if any) for California. This approach balances alignment with external frameworks while preserving the ability to

address state-specific environmental and policy needs. Regular review cycles and stakeholder input would further ensure regulatory responsiveness and effectiveness.

b. How could CARB ensure reporting under the laws minimizes a duplication of effort for entities that are required to report GHG emissions or financial risk under other mandatory programs and under SB 253 or 261 reporting requirements?

c. To the extent the standards and protocols incorporated into the statute provide flexibility in reporting methods, should reporting entities be required to pick a specific reporting method and consistently use it year-to-year?

Response: We recommend that entities all conform to one specific reporting method and consistently use it year-to-year. Standardization enhances comparability, as seen in financial reporting, where uniform frameworks can improve clarity and decision-making; this is a foundational component of the conceptual frameworks from the financial reporting regimes both under U.S. GAAP and IFRS. In sustainability reporting, anecdotal evidence from investor surveys suggests a preference for a single reporting framework, reducing complexity and increasing transparency (e.g., McKinsey, 2019). We agree with the consensus among surveyed investors and think that the same logic applies more broadly to California-based stakeholders. A regulatory intervention is particularly suited to impose standardization across reporting entities (Leuz and Wysocki, 2016). A standardized approach ensures consistency, facilitates oversight, and strengthens stakeholder confidence. Allowing multiple methods undermines comparability, making assessments across entities difficult.

General: Data Reporting

4. To inform CARB's regulatory processes, are there any public datasets that identify the costs for voluntary reporting already being submitted by companies? What factors affect the cost or anticipated cost for entities to comply with either legislation? What data should CARB rely on when assessing the fiscal impacts of either regulation?

5. Should the state require reporting directly to CARB or contract out to an "emissions" and/or "climate" reporting organization?

Response: We recommend that CARB requires reporting to a third-party entity. Specifically, we recommend that CARB contracts with an entity that is highly visible and known to market participants. The objective of a disclosure mandate is to empower market participants. One condition of success is that market participants access the information as widely as possible. Academic research has evaluated the impact of disclosure mandates pertaining to non-financial information. In the context of disclosure about workforce safety, Christensen et al. (2017) find that moving existing information from a low-visibility agency website to a high-visibility venue (i) allows investors to consume the information and (ii) leads to real improvement in workers' safety, the social objective of the regulation. Bourveau et al. (2025) examine compliance to a disclosure mandate about carbon emissions that notably targets private firms in France. The regulation requires that firms file emissions reports with the ADEME, a reasonably unknown environmental public agency. They observe (i) low compliance with the disclosure mandate and (ii) low quality of information for the firms that comply with the regulation.

Overall, a high-visibility venue reduces the information acquisition and processing costs by stakeholder participants, thereby increasing the chances that the disclosure mandate leads to the preferred outcomes of California-based stakeholders.

6. If contracting out for reporting services, are there non-profits or private companies that already provide these services?

Response: We recommend that CARB should seriously consider contracting with CDP, formerly known as Carbon Disclosure Project, given its widespread use by both capital market and non-capital market participants for decision-making. Academic research has established that most large companies file their carbon data with CDP and that such information allows investors to price firms' carbon risk (Masumara et al. 2014; Bolton and Kacperczyk, 2021).

CDP has a US-based not-for-profit entity, CDP North America. CDP's established framework will promote consistency, credibility, and broad stakeholder acceptance. Of course, CARB should also retain this data internally for redundancy and regulatory oversight. A partnership with CDP should include provisions for "open access"–such as free availability and bulk downloads–to ensure California-based stakeholders and regulated entities can efficiently engage with and utilize the reported data.

SB 253: Climate Corporate Data Accountability Act

7. Entities must measure and report their emissions of greenhouse gases in conformance with the GHG Protocol, which allows for flexibility in some areas (i.e. boundary setting, apportioning emissions in multiple ownerships, GHGs subject to reporting, reporting by sector vs business unit, or others). Are there specific aspects of scopes 1, 2, or 3 reporting that CARB should consider standardizing?

8. SB 253 requires that reporting entities obtain "assurance providers." An assurance provider is required to be third-party, independent, and have significant experience in measuring, analyzing, reporting, or attesting in accordance with professional standards and applicable legal and regulatory requirements.

a. For entities required to report under SB 253, what options exist for third-party verification or assurance for scope 3 emissions?

Response: It is important to note that the market for assurance over carbon information has progressively developed voluntarily before the adoption of audit mandates.[1] Academic research documents the rise of voluntary third-party verification pertaining to voluntary carbon emissions

[1] The development of voluntary audits also took place in the context of financial information before the implementation of an audit mandate by the 1934 Securities and Exchange Act (Bourveau et al. 2025).

reporting in U.S. markets. Using a sample of S&P 500 firms during the 2010-2020 decade, Gipper et al. (2024a) show that market shares for assurors in the space are split between traditional audit firms and specialized engineering / consulting (i.e., non-audit) firms. From the research and anecdotal observation, traditional audit firms that are active in this market include (but are not restricted to) BDO USA, Deloitte & Touche LLP, Ernst & Young LLP, Grant Thornton LLP, KPMG LLP, PricewaterhouseCoopers LLP. Non-audit firm assurors that have high market shares for environmental-based assurance work include Apex, DNV, ERM CVS, and LRQA.

b. For purposes of implementing SB 253, what standards should be used to define limited assurance and reasonable level of assurance? Should the existing definition for "reasonable assurance" in MRR be utilized, and if not why?

<u>Response</u>: We recommend that standards for limited or reasonable assurance largely align with framework-level definitions in Generally Accepted Auditing Standards established by the AICPA or PCAOB. We think that this could provide California-based stakeholders with confidence that sufficient assurance work has been completed to support opinions regarding the consistency of reported emissions with the referenced standard because it ties directly with financial statement audits performed in U.S. capital markets. However, we also think that CARB could align SB 253 assurance definitions with existing assurance provider practices in voluntary contexts, where "reasonable assurance" is linked to higher reporting quality (Gipper et al., 2024b). Moreover, academic evidence in both financial and emissions reporting contexts show that any assurance—limited or reasonable—improves measurement reliability (Badertscher et al., 2023; Gipper et al., 2024b).

9. How should voluntary emissions reporting inform CARB's approach to implementing SB 253 requirements? For those parties currently reporting scopes 1 and 2 emissions on a voluntary basis:

c. What frequency (annual or other) and time period (1 year or more) are currently used for reporting?

<u>Response</u>: Academic research shows that when firms begin reporting emissions on a voluntary basis, almost all report annual emissions every year thereafter (Gipper et al., 2024a).

We recommend that any requirements for reporting match this frequency and reporting period. Further, we recommend CARB to encourage or require that firms match reporting dates with any externally released financial reports. Capital market stakeholders process information more effectively when non-financial and financial data are released together, reducing processing costs and enhancing comparability and decision-making. Sustainability reporting released off cycle seems to attract little attention in stock markets (e.g., Haley et al., 2023). Because most corporate carbon emissions reporting follows this annual cycle, ensuring consistency with broader disclosure practices is vital for stakeholder information processing and for firms to build consistent reporting infrastructure.

d. When is data available from the prior year to support reporting?

e. What software systems are commonly used for voluntary reporting?

SB 261: Climate Related Financial Risk Disclosure

10. For SB 261, if the data needed to develop each biennial report are the prior year's data, what is the appropriate time frame within a reporting year to ensure data is available, reporting is complete, and the necessary assurance review is completed?

> Response: We reiterate our recommendation in response to question 9.c. Concurrent timing with other reports, such as financial statements, can benefit stakeholders to process the information together and make informed decisions. In financial reporting, there are concerns regarding the timing and release of unaudited information to capital markets (e.g., Marshall et al., 2019). However, we believe that over time firms are able to increase the alignment of comprehensive reporting and assurance with timelier release dates due to process and systems investments.

11. Should CARB require a standardized reporting year (i.e., 2027, 2029, 2031, etc.), or allow for reporting any time in a two-year period (2026-2027, 2028-2029, etc.)?

> Response: We recommend that CARB require a standardized reporting year to all the firms subject to the reporting mandate. Imposing a standardized reporting year will provide at least two benefits. First, it will enhance comparability by making sure that firms report their carbon emissions for periods during which they faced the same macro-economic factors (e.g., cost of energy). Second, it will prevent firms from strategically selecting an initial reporting period with higher carbon emissions, which makes future carbon emission reduction relatively easier to achieve. Such behavior has been documented in the context of publicly-listed firms making public commitments to reduce their carbon emissions (Bolton and Kacperczyk, 2025).

12. SB 261 requires entities to prepare a climate-related financial risk report biennially. What, if any, disclosures should be required by an entity that qualifies as a reporting entity (because it exceeds the revenue threshold) for the first time during the two years before a reporting year?

13. Many entities that are potentially subject to reporting requirements under SB 261 are already providing other types of climate financial risk disclosures.

f. What other types of existing climate financial risk disclosures are entities already preparing?

> Response: Academic research shows and anecdotal observation indicates that public companies around the world, including in the U.S., have been reporting climate financial risk disclosure using the Task Force on Climate-related Financial Disclosures (TCFD) framework or the Sustainability Accounting Standard Board (SASB) framework (e.g., Gipper et al., 2024a). This information was typically disclosed in a sustainability report, a voluntary and unregulated document. With TCFD being codified into corporate / securities law in multiple countries and with the ISSB incorporating both the TCFD framework and the SASB ones into its sustainability standards, this information will switch to regulated legal filings (e.g., annual reports) for firms in countries that endorse the ISSB standards.

Current accounting standards under both U.S. GAAP and IFRS also allow preparers to account for climate risk in financial statements. A growing number of firms have been disclosing climate impacts on key accounting items such as asset impairments and contingent liabilities, although this effect is concentrated among European companies and not U.S. ones (Muller et al. 2024).

g. For covered entities that already report climate related financial risk, what approaches do entities use?

h. In what areas, if any, is current reporting typically different than the guidance provided by the Final Report of Recommendations of the Task Force on Climate-related Financial Disclosures?

i. If not consistent with the Final Report of Recommendations of the Task Force on Climate-related Financial Disclosures, are there other laws, regulations, or listing requirements issued by any regulated exchange, national government, or other governmental entity that is guiding the development of these reports?

References

Badertscher, B., J. Kim, W. Kinney Jr, and E. Owens. (2023). Assurance level choice, CPA fees, and financial reporting benefits: Inferences from US private firms. *Journal of Accounting and Economics* (link).

Bolton, P. and M. Kacperczyk. (2021). Do investors care about carbon risk? *Journal of Financial Economics* (link).

Bolton, P. and M. Kacperczyk. (2025). Firm commitments. *Management Science* (link).

Bourveau, T., M. Breuer, and R. Stoumbos (2025). Public company auditing around the Securities Exchange Act: Historical lessons for ESG assurance. *The Accounting Review* (link).

Bourveau, T., A. Garel and A. Romec (2025). Mandatory carbon disclosure: Evidence from France. Working Paper at *SSRN* (link).

Christensen, H., E. Floyd, L. Liu, and M. Maffett. (2017). The real effects of mandated information on social responsibility in financial reports: Evidence from mine-safety records. *Journal of Accounting and Economics* (link).

De George, E., X. Li, and L. Shivakumar. (2016) A review of the IFRS adoption literature. *Review of Accounting Studies* (link).

Gipper, B., S. Ross, and S. Shi (2024a). ESG assurance in the United States. *Review of Accounting Studies* (link).

Gipper, B., F. Sequeira, and S. Shi. (2024b). Carbon accounting quality: Measurement and the role of assurance. Working Paper at *SSRN* (link).

Haley, S., M. Shaffer, and R. Sloan. (2024). Do sustainability reports contain financially material information? Working Paper at *SSRN* (link).

Leuz, C. and P. Wysocki (2016). The Economics of Disclosure and Financial Reporting Regulation: Evidence and Suggestions for Future Research. *Journal of Accounting Research* (link).

Marshall, N., J. Schroeder, and T. Yohn. (2019) An incomplete audit at the earnings announcement: Implications for financial reporting quality and the market's response to earnings. *Contemporary Accounting Research* (link).

Matsumara, E., R. Prakash, and S. Vera-Munoz. (2014) Firm-value effects of carbon emissions and carbon disclosures. *The Accounting Review* (link).

McKinsey (2019). More than Values: the Value-based Sustainability Reporting that Investors Want. (link).

Muller, M., G. Ormazabal, T. Sellhorn, and V. Wagner (2024). Climate disclosure in financial statements. Working Paper at *SSRN* (link).