

May 29, 2026

Lauren Sanchez
Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814
Submitted electronically

**Re: Comments of the Low Impact Hydropower Institute to the California Air Resources Board
March 23, 2026, Climate Disclosure Workshop**

Dear Chair Sanchez and California Air Resources Board Staff,

The Low Impact Hydropower Institute (LIHI) appreciates the opportunity to provide written comments to the California Air Resources Board (CARB) in response to the request for public comments on its March 23, 2026, Climate Disclosure Workshop. LIHI supports CARB's efforts to advance transparent, science-based greenhouse gas (GHG) emission accounting and climate disclosure reporting under the California Corporate Greenhouse Gas Reporting Program authorized by Senate Bill (SB) 253, as amended by SB 219. LIHI also supports CARB's use of the Greenhouse Gas Protocol (GHG Protocol) as the foundational accounting framework for reporting Scope 1, Scope 2, and Scope 3 GHG emissions. The GHG Protocol remains the most widely used and internationally recognized framework for GHG emission accounting and provides an important baseline for ensuring consistency across reporting entities. LIHI's comments offer two recommendations for CARB's consideration:

- Scope 2 reporting should follow the GHG Protocol's 2015 Scope 2 Guidance as CARB begins implementing SB 253. If CARB later seeks to incorporate a different framework for Scope 2 reporting, including any changes that emerge from the ongoing extensive revisions to the GHG Protocol Corporate Standard, CARB should solicit stakeholder feedback before final adoption of any changes.
- Scope 3 reporting should consider the GHG Protocol's recently published Land Sector and Removals Standard to incorporate emissions from water reservoirs, including those used to generate hydropower (i.e. Category 3).

The remainder of the comments provide background on LIHI and greater detail on each of the recommendations listed above.

Background on the Low Impact Hydropower Institute

LIHI is a national 501(c)(3) organization that was established in 1999 with a mission to recognize and support hydropower that prioritizes environmental, recreational, historical, and cultural resource protection.¹ LIHI works at the intersection of the energy sector and

¹ Low Impact Hydropower Institute. About us. Available at: <https://lowimpacthydro.org/about-us-2/>

environmental and community interests—serving as the bridge between hydropower operators, energy markets, regulators, and the public. For over 25 years, LIHI has provided the only independent, science-based certification for low-impact hydropower in the United States. LIHI has evaluated and certified over 300 hydropower facilities in 24 states and 101 rivers based on eight Low Impact Hydropower criteria² and has prioritized public participation throughout the process.

LIHI has worked extensively on issues related to renewable energy markets, environmental standards, electricity accounting frameworks, and GHG emissions from water reservoirs, including those used to generate hydropower. What is measured is managed: rigorous GHG emission reporting requirements will play a crucial role in generating data that can direct meaningful action to address the main drivers of climate change. However, consistency and comparability of data are important as is durability of reporting frameworks. To that end, LIHI appreciates the opportunity to provide perspectives on the implementation of GHG reporting requirements pursuant to SB 253.

Recommendations

1. Scope 2 reporting should follow the GHG Protocol’s 2015 Scope 2 Guidance as CARB begins implementing SB 253.

While LIHI supports CARB’s reliance on the GHG Protocol framework, CARB should expressly rely on the currently operative 2015 Scope 2 Guidance and associated accounting rules for purposes of implementation of SB 253. The GHG Protocol’s 2015 Scope 2 guidance remains the only finalized and widely adopted international standard for Scope 2 accounting and this version was in effect at the time that SB 253 was enacted.

The GHG Protocol’s Scope 2 accounting framework is currently undergoing a significant revision process that is expected to be completed in 2027 or later. The proposed updates to the Scope 2 accounting framework include unresolved and highly consequential policy issues regarding market-based accounting. Several proposed revisions under consideration could fundamentally alter how renewable electricity procurement is recognized under the market-based method, including through potential deliverability and temporal matching requirements. For hydropower specifically, long-term and geographically diverse offtake agreements are crucial to remain economically viable and continue investing in environmental performance improvements; in this context, the proposed revisions, particularly around deliverability, could have unintended effects on procurement from this technology. Given that the proposed Scope 2 revisions remain under active consideration and have not been finalized yet, CARB should avoid incorporating evolving or draft guidance into reporting requirements at this stage.

If CARB later seeks to incorporate a different framework for Scope 2 reporting, including any changes that emerge from the ongoing extensive revisions to the GHG Protocol’s Scope 2 accounting framework, CARB should solicit stakeholder feedback before final adoption of any

² Low Impact Hydropower Institute. Certification Program - Criteria & Goals. Available at: <https://lowimpacthydro.org/certification-program/>

changes. Such an opportunity will be essential to ensure that stakeholders can evaluate the practical, technical, and environmental implications of any revised accounting methodologies. It will also give stakeholders an opportunity to assess the implications of changes on existing and future clean energy procurement.

2. Scope 3 reporting should consider the GHG Protocol’s recently published Land Sector and Removals Standard to incorporate emissions from water reservoirs, including those used to generate hydropower (i.e. Category 3).

As CARB contemplates future sectoral frameworks for Scope 3 reporting, it should account for emerging guidance on the assessment and reporting of water reservoir GHGs, including those associated with hydropower facilities that would fall within the Category 3 of an organization’s value-chain emissions around fuel and energy related activities.³ Given that hydropower supplies anywhere between 12-15% of California’s energy needs,⁴ and that hydropower may play an even bigger role when considering reporting entities’ procurement from this technology across the United States and beyond, it would be important to capture this technology in future Scope 3 reporting frameworks.

Hydropower facilities, like all energy systems, can emit GHGs over their entire lifecycle.⁵ Human-made reservoirs can emit GHGs, and for hydropower facilities with a reservoir—regardless of whether hydropower generation is the primary purpose of the reservoir—the creation and unique characteristics of the reservoir along with its ongoing operation play a key role in influencing the overall rate of GHG emissions from individual facilities.⁶ Existing scientific literature demonstrates that reservoir emissions can vary widely based on factors such as the age, location, size, and morphology of the water reservoir, operational patterns [e.g., run-of-river, storage/peaking], surrounding watershed characteristics, land use and patterns of nutrient discharge into the reservoir, water quality and stratification in the reservoir, and external environmental factors.⁷ As a result, water reservoir emissions are highly site-specific and methodologically complex to quantify accurately due to the spatial and temporal variability in GHG emissions. With that said, several advancements in tools and methodologies are underway to help improve the estimation of GHGs at water reservoirs.⁸

³ California Air Resources Board. SB 253 Public Workshop: California Corporate Greenhouse Gas Reporting Program, March 23, 2026. Slide 27. Available at: <https://ww2.arb.ca.gov/sites/default/files/2026-03/SB%20253%20March%202026%20Workshop%20Slides%20Final.pdf>

⁴ California Energy Commission. 2024 Total System Electric Generation. Available at: <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2024-total-system-electric-generation>

⁵ Raadal, H.L., Gagnon, L., Modahl, I.S. and Hanssen, O.J., 2011. Life cycle greenhouse gas (GHG) emissions from the generation of wind and hydro power. *Renewable and Sustainable Energy Reviews*, 15(7), pp.3417-3422. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S1364032111001924>

⁶ Abril, G., Guérin, F., Richard, S., Delmas, R., Galy-Lacaux, C., Gosse, P., Tremblay, A., Varfalvy, L., Dos Santos, M.A. and Matvienko, B., 2005. Carbon dioxide and methane emissions and the carbon budget of a 10-year old tropical reservoir (Petit Saut, French Guiana). *Global biogeochemical cycles*, 19(4). Available at: <https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2005GB002457>; Jager, H.I., Griffiths, N.A., Hansen, C.H., King, A.W., Matson, P.G., Singh, D. and Pilla, R.M., 2022. Getting lost tracking the carbon footprint of hydropower. *Renewable and Sustainable Energy Reviews*, 162, p.112408. Available at: <https://www.sciencedirect.com/science/article/pii/S1364032122003161>

⁷ Deemer, B.R., Harrison, J.A., Li, S., Beaulieu, J.J., DelSontro, T., Barros, N., Bezerra-Neto, J.F., Powers, S.M., Dos Santos, M.A. and Vonk, J.A., 2016. Greenhouse gas emissions from reservoir water surfaces: a new global synthesis. *BioScience*, 66(11), pp.949-964. Available at: <https://pubmed.ncbi.nlm.nih.gov/32801383/>

⁸ Karambelkar, S., Fischer, M. and Ames, S., 2025. Hydropower Reservoir Greenhouse Gas Emissions: State of the Science and Roadmap for Further Research to Improve Emission Accounting and Mitigation. *Sustainability*, 17(13), p.5794. Available at: <https://www.mdpi.com/2071->

Recognizing that water reservoirs, including those with hydropower generation, can emit GHGs, the GHG Protocol's recently released Land Sector and Removals Standard (LSRS) includes reporting requirements for water reservoirs and hydropower-associated emissions.⁹ The LSRS notes that "[c]ompanies acquiring or purchasing electricity generated from hydropower shall account for emissions from the water reservoir as LUC [land use change] emissions."¹⁰ The LSRS provides guidance on which atmospheric gases companies should assess and how. CARB can use the LSRS guidance as a starting point to develop a Scope 3 reporting framework to estimate GHGs (notably methane) from water reservoirs associated with hydropower. Given that most water reservoirs in the United States serve multiple purposes such as water supply and flood control, additional considerations would need to be included in the Scope 3 reporting framework to appropriately.¹¹

Conclusion

LIHI applauds CARB's efforts to create a robust climate disclosure reporting program pursuant to SB 253. This program will be instrumental in advancing our understanding of the drivers of climate change and direct strategic action to address GHG emissions. LIHI appreciates CARB staff's stakeholder engagement in designing this program and offers its recommendation to help ensure that the disclosure requirements remain consistent with existing global frameworks.

LIHI appreciates CARB's leadership in addressing this important topic. LIHI is eager and available to provide further assistance as CARB finalizes the reporting frameworks and sectoral guidance.

Sincerely,

/s/Surabhi Karambelkar
Surabhi Karambelkar
Policy Director

/s/Shannon Ames
Shannon Ames
Executive Director

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⁹ Greenhouse Gas Protocol. Land Sector and Removals Standard Version 1.0: Agriculture and CO2 removal technologies [hereinafter GHG Procol, LSRS]. Available at: <https://ghgprotocol.org/sites/default/files/2026-01/Land-Sector-and-Removals-Standard.pdf>

¹⁰ GHG Protocol, LSRS. At p. 42.

¹¹ See examples of GHG emission allocation methods here, https://cdn.prod.website-files.com/64f9d0036cb97160cc26feba/64f9d0036cb97160cc270fe1_g-res_technical_document_v2.1.pdf