

STATE OF CALIFORNIA

BEFORE THE CALIFORNIA ENERGY COMMISSION

In the Matter of:

AB 1110 Implementation Rulemaking

Docket No. 16-OIR-05

**Near Zero's Comments on the Draft
Regulatory Amendments to the Power
Source Disclosure Program**

October 28, 2019

Thank you for the opportunity to offer comments on the proposed changes to the Commission's Power Source Disclosure (PSD) Program regulations. Near Zero is a non-profit research organization focused on the design and implementation of climate policies, especially those that support the goal of deep decarbonization.

We appreciate the effort the Commission has put into updating the PSD Program to account for the greenhouse gas (GHG) emissions associated with electricity that serves California customers' loads. We believe the proposed regulations reflect important progress in improving the quality and accuracy of the PSD Program and commend the Commission for its efforts. Below we provide a set of comments that offer some specific constructive suggestions to further strengthen the Commission's proposal as well as to identify a set of issues we suggest the Commission may wish to monitor for consideration in future rulemakings.

1. The proposed PSD regulations would strengthen the quality of GHG emissions accounting for electricity that serves California customers' loads, particularly in the treatment of firmed-and-shaped and unbundled REC contracts (General comment).

The proposed regulations would take important steps to improve the quality of GHG emissions accounting, consistent with AB 1110. In particular, the Commission proposes to assign the GHG emissions intensity associated with actual power deliveries that serve retail loads for firmed-and-shaped and unbundled REC contracts in Section 1393(c)(1). This approach will help more accurately report the GHG emissions associated with the electricity that physically serves California retail loads.

Although we believe the proposed regulations would improve the basis for identifying GHG emissions associated with electricity serving California customers' loads, we note that the proposed methodology is calculated only on an annual basis. We appreciate that an annual accounting structure offers a straightforward approach that facilitates regulatory oversight and minimizes compliance burdens on load-serving entities, but stress that matching clean energy with load on a more real-time basis, such as hourly accounting, will likely be needed to support deep decarbonization of the electricity sector. The proposed PSD regulations would improve the quality of GHG accounting but would not provide a direct incentive to balance loads at this level of temporal granularity.

As a result, we encourage the Commission to monitor load-serving entities' progress toward real-time clean energy load-balancing and consider future updates to the PSD Program as circumstances warrant. Further updates will likely be necessary to enable the PSD Program to directly support SB 100's long-term goal of serving California's retail loads with zero-carbon electricity by 2045.

2. The Commission should explicitly extend its GHG accounting principles for specified purchases to purchases from large hydropower generators (Section 1393(c)(1)).

Section 1393(c)(1) of the proposed regulations requires load-serving entities to calculate the GHG emissions of "specified purchases [of electricity], including eligible firmed-and-shaped products" based on the GHG emissions of "delivered electricity." According to the staff ISOR, this requirement would apply to all electricity procurements, including but not limited to those from RPS-eligible resources.¹ However, the ISOR discussion focuses on RPS-eligible resources and the text of the proposed rule is not explicit regarding whether large hydropower generators are included in Section 1393(c)(1). We recommend making large hydropower's inclusion explicit, rather than implicit.

Explicit inclusion of large hydropower resources is warranted because these resources are an important part of California's electricity mix and some hydropower imports may raise accounting issues that are essentially identical to those raised by some RPS-eligible firmed-and-shaped renewable energy contracts. Our understanding is that some California load-serving entities may have contracts with large hydropower facilities that include clauses accommodating a certain amount of unspecified or replacement power deliveries, such that these contracts resemble the structure of "[RPS-]eligible firmed-and-shaped" contracts—except for the fact that large hydropower generators are not RPS-eligible. Thus, it would be consistent

¹ CEC ISOR, Docket No. 16-OIR-05 (Sept. 2019) at 15-16.

with the Commission’s proposed treatment of eligible firm-and-shaped products to require load-serving entities to report the GHG emissions associated with actual power deliveries from hydropower products, which may in some cases include some non-hydropower deliveries.

Given the importance of large hydropower resources to serving California’s load and their associated contributions to GHG emission reductions, we recommend explicitly extending the reach of Section 1393(c)(1) to include these resources. This approach would ensure that hydropower is treated on an equal basis with RPS-eligible specified deliveries and could be accomplished by adding the following language in Section 1391(c)(1), which draws on the existing definition of “large hydroelectric” in Section 1391:

GHG emissions of specified purchases, including but not limited to large hydroelectric and eligible firm-and-shaped products, shall be based on the delivered electricity.

Again, our understanding is that the proposal already intends to include large hydropower resources in this provision; our recommendation is to make this explicit to avoid any potential ambiguity affecting the largest source of specified low-GHG imports.

3. The Commission should monitor any new research addressing the default unspecified GHG emissions factor that applies to unspecified power because this factor was calculated from 10-year-old market conditions and may be inaccurate (Section 1393(c)(3)).

One important question for any GHG accounting system is how to assign emissions to unspecified power—that is, electricity that cannot be traced to specific generation sources. The proposed regulations would assign unspecified power the default emissions factor developed by the California Air Resources Board (CARB) in its Mandatory Reporting Regulation. This approach has the advantage of ensuring consistency with the methods taken by CARB in its cap-and-trade program and GHG inventory, which is a commendable policy goal.

Nevertheless, CARB’s default emissions factor has been criticized as outdated and potentially inaccurate. This factor is based on a calculation of WECC-wide emissions from certain generating sources over the period 2006-2008, a period that reflects a very different time in the history of western electricity markets.² Reflecting these concerns, the Independent Emissions Market Advisory Committee, which was created to provide independent advice to CARB and

² Joe Kaatz & Scott Anders, The role of unspecified power in developing locally relevant greenhouse gas emissions factors in California’s electric sector, *Electricity Journal* 29: 1-11 (2016).

the Legislature, recommended in 2018 that CARB update its default emissions factor.³ CARB has not provided an update and maintained in a recent rulemaking that no update is needed.⁴

We respectfully urge the Commission to monitor any new research that becomes available on the GHG emissions associated with unspecified power deliveries to California. If it appears that CARB's current default emissions factor does not accurately capture the GHG emissions associated with unspecified power, its adoption in the PSD Program could distort the true GHG emissions profile of electricity serving California customers' load.

4. The proposed methods for calculating the GHG emissions profile of load-serving entities that procure more electricity than they have retail sales create potential perverse incentives and potential accounting inaccuracies (Section 1393(a)(6), Equation 3).

The Commission observes that some load-serving entities procure more specified net purchases of electricity than they have retail sales, as calculated on an annual basis—a condition we will call “over-procured” here for convenience. As a result, the PSD Program requires a method for decrementing specified net purchases such that the sum of total adjusted net purchases equals the entity's retail sales.

To accomplish this goal, the Commission proposes to calculate the GHG emissions intensity of load-serving entities' retail sales by reducing the number of megawatt-hours of specified resources reported for PSD purposes in Section 1393(a)(6). A load-serving entity that is over-procured would reduce the number of megawatt-hours of specified natural gas purchases it reports under the PSD Program. If these adjustments are not sufficient to reduce procurement down to the level of its retail sales, the load-serving entity would further reduce its reported purchases from coal and other fossil resources, then large hydropower and nuclear resources, as needed, in that order.

The proposed approach would match the number of megawatt-hours of procured specified contracts to each load-serving entity's retail sales, but it introduces a number of complexities, some of which Anaheim Public Utilities raised in an earlier comment.⁵ The proposed methods raise the possibility that some load-serving entities that are over-procured will report

³ 2018 IEMAC Annual Report (Oct. 2018) at 38, https://calepa.ca.gov/wp-content/uploads/sites/6/2018/10/Final_2018_IEMAC_Annual_Report_10-22-2018.pdf. Please note that Dr. Cullenward is a member of the IEMAC but does not speak on behalf of the IEMAC in this comment letter.

⁴ CARB, 2018 Mandatory Greenhouse Gas Reporting Regulation Update, ISOR (Sept. 2018) at 16, <https://ww2.arb.ca.gov/rulemaking/2018/mandatory-reporting-greenhouse-gas-emissions-2018>.

⁵ Comments from Anaheim Public Utilities, CEC Docket No. 16-OIR-05, TN #230259 (Oct. 17, 2019).

significantly lower GHG intensity than would actually be associated with the net portfolio of resources they deliver to retail customers because the Commission’s proposed approach would allow such entities to preferentially reduce their GHG-emitting resources first; others that have significant coal procurements but relatively few gas procurements at this time, like Anaheim, might report higher GHG intensity than they would without the Commission’s proposed treatment in Section 1393(a)(6).

Not only might the Commission’s proposed approach lead to inaccurate GHG emissions accounting, but it might also encourage load-serving entities to procure unshaped RPS-eligible resources—that is, to procure additional gross megawatt-hours without regard to real-time retail demand, rather than appropriately timed clean energy supplies—because all such procurement will tend to significantly reduce the entity’s reported GHG emissions under the Commission’s proposal in Section 1393(a)(6).

We agree with Anaheim that the Commission may wish to consider an alternative approach to calculating the GHG emissions associated with retail sales and suggest a different option here. Rather than preferentially reducing one category of resource after another until specified net purchases are equal to retail sales, the Commission might instead discount the total amount of every resource type by the ratio of retail sales to total specified procurement. That is, if a load-serving entity procures 25% more specified energy than it has retail sales (i.e., 125%), then the reported proportion of each resource type could be discounted by 80% (i.e., 100%/125%).

Our suggested alternative approach could be implemented by replacing the text of the proposed Section 1393(a)(6) in its entirety with the following text:

If the total procurement of specified net purchases of an electricity portfolio exceeds retail sales, each net purchase of electricity shall be proportionately reduced so that the sum of all adjusted net purchases equals the retail sales of an electricity portfolio, as expressed in Equation 3.

In turn, this alternative approach could be implemented by striking the term “NP_{NR}” from Equation 3 and replacing it with the term “NP”.

$$\text{Equation 3: } ANP_i = NP_i - (NP - RS) \times \left(\frac{NP_i}{NP_{NR} NP} \right)$$

Where the terms have the same meaning as in the current proposal:

ANP_i = Adjusted net purchase i, measured in MWh

NP_i = Net purchase i, measured in MWh

NP = Sum of all net purchases, measured in MWh

RS = Total retail sales of an electricity portfolio, measured in MWh

NP_{NR} = Any net purchase of a fuel type that is not an eligible renewable, large hydro, or nuclear resource, measured in MWh.

For further clarity, this alternative Equation 3 can be simplified and rewritten as:

$$\text{Equation 3: } ANP_i = NP_i \times \left(\frac{RS}{NP} \right)$$

This alternative approach would achieve the Commission's goal of matching total procured specified net purchases with retail sale volumes. It would also create two additional advantages.

First, this alternative would not shift the proportional share of resources each load-serving entity reports, only the quantity of each resource that counts toward the total GHG intensity calculation. This would avoid the potential for over-procured load-serving entities to book unrealistic reductions in reported GHG emission intensities as well as avoid outcomes where load-serving entities with coal procurements report GHG emission intensities that overrepresent the emissions associated with their coal imports.

Second, as load-serving entities strive to report emissions intensities approaching zero, this alternative calculation would create a modest incentive for load-serving entities to procure low-GHG energy that is coincident with retail demand, such that more of its specified RPS-eligible resources would contribute toward reducing reported GHG outcomes. Under any annual accounting structure, including the proposed rules and our suggested alternative, load-serving entities can dilute their reported GHG emissions intensity by over-procuring specified low-GHG resources relative to retail load. An accounting structure that preferentially rewards over-procurement of low-GHG resources, like the Commission's proposal, could exacerbate the incentives load-serving entities face under an annual accounting regime to rely on over-procurement to reduce reported GHG intensity. In contrast, a proportional discounting method, such as the one we present here, would partially mitigate those incentives by reducing the extent to which over-procurement affects the reported GHG intensity. By reducing the incentive to over-procure low- and zero-GHG resources, our alternative would support the longer-term alignment of the PSD Program with more temporally granular approaches, such as

the hourly Clean Net Short approach used in the California Public Utilities Commission's Integrated Resource Planning process.

5. The Commission should clarify how it will limit grandfathering of eligible firm-and-shaped products under contracts executed prior to January 1, 2019 (Section 1393(d)(1)).

The Commission proposes to exempt certain legacy firm-and-shaped contracts from its approach to GHG emissions accounting, which, under Section 1393(c)(1), would otherwise require load-serving entities to report the GHG emissions associated with the power that is physically delivered to California. Under the Commission's proposal in Section 1393(d)(1), contracts for eligible firm-and-shaped resources signed prior to January 1, 2019 would be exempt from this requirement; instead, their off-takers would report the GHG emissions associated with the contracted-for eligible renewable energy resource substantiated by RECs, even if another source of electricity ends up providing the power physically serving retail loads.

Grandfathering provisions should be carefully tailored to avoid any potential loopholes that could enable legacy contracts to be extended beyond the initial accommodation period. We urge the Commission to ensure that it finalizes a tight and clear definition that limits legacy contracts, consistent with the policy preferences it articulates in the ISOR. The ISOR contemplates that whenever "the duration of a contract has been extended or renewed for an additional term or the terms have been amended or otherwise modified," then a legacy contract will no longer be exempted from the provisions of Section 1393(c)(1)—that is, any extension, renewal, amendment, or modification will end the contract's exemption.⁶

If the Commission decides to include any grandfathering in the first place—despite the fact that, as the Commission observes, CARB's Mandatory Reporting Regulations have required since 2011 that firm-and-shaped resources be treated similarly to how they would be treated under the Commission's current proposal for the PSD program—then we agree that the limits contemplated in the ISOR are both reasonable and important. However, the proposed regulatory text does not necessarily reflect these concepts as well as it might. We would encourage the Commission to strengthen the text of Section 1393(d)(1)(B) as follows:

Retail suppliers with specified purchases of eligible firm-and-shaped products under a purchase agreement or ownership agreement that has been amended, modified, renewed, or extended in any way, including by automatically renewing or extending terms as

⁶ CEC ISOR, Docket No. 16-OIR-05 (Sept. 2019) at 23.

contemplated in the original agreement, on or after January 1, 2019, shall report GHG emissions according to the source of the delivered electricity for inclusion in the GHG emissions intensity calculation of the electricity portfolio pursuant to subdivision (c)(1).

These additional clarifications are warranted because many long-term purchase or ownership agreements contain provisions that enable the parties to automatically extend or renew contract terms beyond the minimum duration committed to in the contract. While these types of provisions provide important commercial benefits to contracting parties, it cannot be said that these parties have a vested right to extend or renew grandfathering terms. The fact that any possible extensions or renewals contemplated in the grandfathered agreement would end the grandfathering exemption is fair as a matter of public policy: parties need not elect these extensions or renewals, and parties have no right to expect that regulatory conditions will remain fixed through any optional extension of the contract terms. The only thing that private parties have committed to is the minimum duration of their purchase or ownership agreements, and therefore the only timeframes and conditions under which their legacy agreements are legitimately grandfathered are those same timeframes and conditions.

We are confident the Commission would be able to review and assess these issues under the reporting requirements already proposed in Section 1393(d)(1)(A) but believe that stronger language in paragraph (B) is warranted to create clear market expectations that are consistent with the existing reasoning in the ISOR.

6. The Commission should monitor the role of electricity exports and consider how a changing net import-export balance may affect the goals and implementation of its PSD Program in the future (General comment).

Finally, we suggest that the Commission may want to monitor how changes to electricity exports and net electricity trades with neighboring states could recommend alternative approaches to GHG accounting associated with retail loads in the future.

Currently, electricity exports play a relatively small role in California's electricity system, but particularly as the state deploys additional RPS-eligible resources, there may be significant economic and environmental value to exporting surplus clean electricity to neighboring states. These potential benefits are among the motivations behind the California Independent System Operator's consideration of an Extended Day-Ahead Market (EDAM) that would involve the

participation of non-CAISO balancing area authorities on the western grid that participate in the current, real-time Energy Imbalance Market.⁷

While the complexities of the CAISO EDAM market design process and its associated GHG accounting provisions are outside the scope of this rulemaking process, it is plausible that California may end up exporting significant quantities of electricity in the future—and particularly from low-carbon renewable resources. The Commission may wish to monitor trends and consider how to account for any such outcomes in its PSD Program, as well as how to ensure consistency with the GHG accounting discussions that will be part of the CAISO EDAM process.

State GHG accounting structures, including the Commission’s PSD Program, do not currently account for the GHG emission reductions clean electricity exports facilitate in neighboring states when they displace the need for fossil generation to serve those states’ customers’ retail loads. This choice allows other states to book their own GHG reductions in response to consumption of California’s low-carbon exports, rather than giving credit to California entities for these outcomes; and that flexibility might be important in a broader regional discussion about GHG accounting. However, it is conceivable that the potential for exporting significant quantities of clean electricity will create incentives for California load-serving entities to procure additional specified resources that are sold, in part, in regional electricity markets.

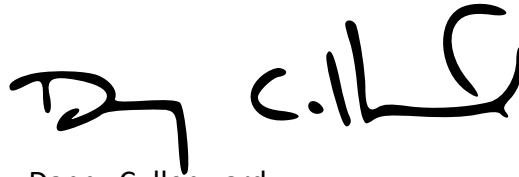
As a result, it will be important to consider how these incentives and market structures may affect the Commission’s selected methods for calculating the GHG emissions intensity of each load-serving entity on the basis of its final retail sales—for example, as contemplated in either the Commission’s proposal for Section 1393(a)(6) or in our suggested alternative.

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⁷ CAISO, Extending the Day-Ahead Market to EIM Entities, Issue Paper (Oct. 10, 2019), <http://www.caiso.com/Documents/IssuePaper-ExtendedDayAheadMarket.pdf>.

We appreciate the opportunity to provide these comments and hope they will help further strengthen the Commission's final regulations.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "D. Cullenward". The signature is stylized and written in a cursive-like font.

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⁸ Mr. Von Wald is signing in his individual capacity and not on behalf of Stanford University, where he is a PhD student in the Energy Resources Engineering Department. We also thank Stanford Law School JD candidate Amanda Zerbe for her help drafting this letter and developing its analysis.