October 25, 2018

Jordan Scavo
Renewable Energy Office
Renewable Energy Division
California Energy Commission

Re: AB 1110 Implementation Proposal for Power Source Disclosure Program, Third Version

Dear Mr. Scavo,

Thank you for the opportunity to comment on the CEC's AB 1110 Implementation Proposal for the Power Source Disclosure Program.[1] We sincerely appreciate the hard work that has gone into the staff paper as well as the CEC's commitment to ensuring consistency in accounting practices across California's energy and climate regulatory programs.

In our view, the proposal would make important improvements to the way California tracks electricity, greenhouse gas emissions (GHGs), and renewable energy credits (RECs). In particular, we appreciate the interest in distinguishing between electricity, GHGs, and RECs to reflect the GHG emissions profile of electricity that serves California load—although we would encourage the Commission to include as much temporal granularity in the GHG emissions accounting as is practicable, both in the current proposal and in any future updates.

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[1] CEC, Assembly Bill 1110 Implementation Proposal for Power Source Disclosure, Third Version, Report No. CEC-300-2018-001-REV3 (Oct. 2018).

We write today to encourage the CEC to proceed with the proposed changes and also to highlight two issues that may warrant additional consideration in this or future proceedings: (1) updating the default GHG emissions factor for unspecified electricity and (2) accounting for GHG emissions from CAISO Energy Imbalance Market imports.

1. The default GHG emissions factor for unspecified electricity is based on outdated data and may not accurately represent the emissions associated with unspecified power deliveries to California.

The Air Resources Board (ARB) developed a default emissions factor to identify the GHG emissions associated with unspecified electricity imports, currently set at 0.428 tCO_2e per MWh.[2] This factor is based on a three-year average of WECC-wide GHG emissions from generators running at assumed rates over the period 2006 to 2008.[3] As a recent report from the Independent Emissions Market Advisory Committee (IEMAC) noted, however, ARB's approach to estimating unspecified emissions raises three potentially important issues.[4]

First, the data behind ARB's unspecified emissions factor are over ten years old. It is possible that updating the data (without changing ARB's methods)

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[2] Cal. Code Regs., title 17, § 95111(b).

[3] 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); *see also* ARB, Public Hearing to Consider the Proposed Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, Staff Report: Initial Statement of Reasons (Sept. 4, 2018) (hereinafter "ARB MRR ISOR") at 16 (reviewing the history of and method for calculating the default emissions factor).

[4] 2018 Annual Report of the Independent Emissions Market Advisory Committee, Chapter 4 (Oct. 22, 2018), *available at* https://calepa.ca.gov/climate/. The IEMAC was created by the 2017 cap-and-trade extension bill, AB 398, and is charged with providing advice to ARB and the Legislature on the environmental and economic performance of California's climate policies, including the cap-and-trade program. Cal. Health & Safety Code § 38591.2. One of us (Dr. Cullenward) is a member of the IEMAC, but neither he nor Near Zero speaks for the IEMAC.

would lead to a significantly different unspecified emissions factor.[5]

Second, the choice of the default emissions factor affects the economic incentive for electricity imports to occur as either specified or unspecified transactions.[6] A resource with GHG emissions below the default factor will generally prefer to identify as a specified resource and therefore receive preferential treatment under the cap-and-trade or Power Source Disclosure programs. Conversely, a resource with GHG emissions above the default factor will generally prefer delivery to California as unspecified power. The IEMAC recommends that the unspecified emissions factor be chosen with this "supply-response" in mind.[7]

Because the default emissions factor is much lower than emissions from coal-fired power plants, there is an incentive for coal-fired resources to find transactional arrangements that result in coal-fired electricity being delivered to California as unspecified power. If indeed this is occurring, it would be worthwhile to consider setting the default unspecified emissions factor at a level more closely resembling coal-fired electricity. In that case, all non-conventional-coal resources would have an incentive to identify as specified imports, improving the accuracy of state energy and greenhouse gas accounting while also ensuring that our climate policies are effective.

Third, the IEMAC observes that average and marginal GHG emissions from unspecified electricity may differ due to changing market conditions on the western grid.[8] Marginal GHG emissions from unspecified electricity could vary significantly by the time of day or season. Marginal GHG emissions may also vary due to the incentive for resources to identify as specified or unspecified power. For example, if a large number of out-of-

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5 ARB has asserted that no update the default unspecified emissions factor is necessary because the marginal generation resource in the WECC today is, in ARB's view, the same as in 2006-2008 (the time period used to set the default unspecified emissions factor in the MRR). ARB MRR ISOR, *supra* note 3, at 16.

6 IEMAC 2018 Annual Report, *supra* note 4, at 32.

7 *Id.*

8 *Id.* at 32-33.

state zero-GHG resources are classified as specified imports to California, their inclusion in a WECC-wide average emissions factor may lead to a significant difference between average and marginal GHG emissions associated with unspecified imports. In that case, the actual profile of unspecified emissions would be more carbon intensive than the average as a result of the large number of out-of-state zero-GHG resources identifying as specified imports to California.

We are mindful that ARB currently sets the unspecified emissions factor in its Mandatory Reporting Regulation (MRR), and therefore that the CEC is not responsible for this calculation. We believe that consistency across agencies is important, and therefore see merit in the proposal to use ARB's unspecified emissions factor in the PSD program. The ideal solution would be for all agencies to agree on a common accounting practice and to make sure that the calculation of emissions from unspecified electricity reflects the best available analytical methods and data. Nevertheless, the Energy Commission may wish to independently monitor potential issues related to unspecified GHG emissions accounting.

2. Accounting for GHG emissions from the CAISO Energy Imbalance Market raises additional complexities that should be monitored going forward.

The CEC proposes assigning the unspecified emissions factor to all imports from the CAISO Energy Imbalance Market (EIM).[9] This approach is consistent with ARB's judgment about the "true" GHG emissions profile associated with EIM imports, which, due to resource shuffling (or "secondary dispatch" as it is often called in the EIM discussion), is likely greater than the emissions associated with the specific resources the EIM deems delivered to serve California load. At the same time, however, the proposed PSD accounting raises conceptual issues that may merit additional discussion in this or future proceedings.

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[9] CEC AB 1110 Implementation Proposal, *supra* note 1, at 34.

In an open rulemaking to amend the MRR regulations, ARB is proposing to modify the treatment of GHG emissions associated with EIM imports.[10] As you know, the EIM deems certain out-of-state resources delivered to serve California load. This practice is based on a voluntary GHG Bid Adder process, where out-of-state resources include in their EIM market bids an extra cost based on the product of their source-specific GHG emissions rate (tCO_2e /MWh) and the secondary carbon market price in California's cap-and-trade program ($\$/tCO_2e$). Only those resources that opt in may be deemed dispatched to serve California load, and only those whose bids are sufficiently competitive are selected.

Applying California's carbon price to the EIM dispatch order means that low-GHG resources will preferentially be selected for dispatch to serve California load. However, there are concerns that high-GHG resources will "backfill" the lost supply to non-California load that is due to the preferential selection of low-GHG resources to serve California load. In that case, emissions would leak out of California's GHG accounting system as a result of resource shuffling.[11]

While we agree that the EIM is likely to exhibit resource shuffling, we have concerns about the accuracy of ARB's GHG accounting in the context of the proposed MRR regulations.[12] As discussed above, the unspecified emissions factor does not appear to be the best possible mechanism for estimating the "true" GHG emissions associated with EIM imports.

Furthermore, we note that there may be a conceptual discrepancy between an accounting approach that seeks to measure the GHG emissions associated with power deliveries to California (*e.g.*, the PSD program) and an approach that seeks to capture the net GHG impacts from resource shuffling and other indirect implications associated with electricity markets

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[10] *See generally* ARB MRR ISOR, *supra* note 3.

[11] IEMAC 2018 Report, *supra* note 4, at 30-31; *id*. at 33-35.

[12] *See also id*. at 33-35 (raising similar questions).

(*e.g.*, as is required under AB 32).[13] We take concerns about resource shuffling and leakage very seriously, but note that it is possible to separate the accounting for GHG emissions from policies or measures that mitigate the indirect effects of resource shuffling.[14]

Again, we believe that consistency across agencies is a critical goal and appreciate the CEC's inclination toward this outcome in the PSD proposal. At the same time, however, we recommend that the CEC monitor the public comments raised in response to the MRR proposal. Depending on how ARB decides to account for the impacts of resource shuffling in the EIM, it may be possible for the CEC to use resource-specific GHG accounting for EIM imports, based on CAISO's determination of deemed delivered resources to identify the resource type and GHG emissions of EIM imports.

As you may know, ARB has proposed to transition away from what it calls a "bridge solution" to addressing EIM leakage and adopt a permanent approach beginning in Q2 2019.[15] In the bridge solution, the calculated leakage from resource shuffling in the EIM is retired from various pools of allowances in the cap-and-trade program. Beginning in Q2 2019, however, "EIM Purchasers" would be assigned additional annual compliance obligations reflecting the difference between (1) the emissions associated with the resources CAISO deems delivered to serve California load and (2) the unspecified emissions factor, which ARB asserts as the "true" net GHG emissions profile of all EIM imports.

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[13] Cal. Health & Safety Code § 38562(b)(8) (requiring ARB to "minimize leakage" in the design of its climate policies, including the cap-and-trade program).

[14] *See* William W. Hogan, An efficient Western Energy Imbalance Market with conflicting carbon policies, *Electricity Journal* 30: 8-15 (2017). Professor Hogan's article concerns an earlier method CAISO developed to identify the net GHG emissions associated with California's EIM imports that is not in use today. Nevertheless, his article makes an important observation that leakage is a consequence of various electricity market designs and not necessarily a problem that these policies must correct—especially not when other policy measures, like adjustments to the cap-and-trade program, might better mitigate the environmental consequences.

[15] ARB MRR ISOR, *supra* note 3, at 6-8.

It appears to us that ARB's choice of method for mitigating the impacts of resource shuffling in the EIM has important implications for how EIM imports could be classified in the PSD and other accounting systems:

- **ARB's bridge solution.** If policy interventions to mitigate leakage are separated from the GHG accounting and reporting requirements, as is the case in ARB's bridge solution, then it may be possible to identify EIM imports as specified resource types with source-specific GHG emissions. This is possible because while there is leakage from resource shuffling, the consequences of resource shuffling are mitigated by ARB's separate decision to remove allowances from the cap-and-trade program design. Thus, while the deemed delivered resources imported from the EIM may have caused additional net GHG emissions due to resource shuffling, those consequences are fully mitigated and would therefore enable a regulator like the CEC to treat EIM imports as specified sources that receive source-specific resource categorizations and source-specific GHG emissions factors.

- **ARB's proposed permanent solution.** If instead ARB's policy intervention to mitigate leakage is combined with a GHG emissions reporting requirement, as would be the case for ARB's proposed permanent solution beginning in Q2 2019, then it may not be possible to treat EIM imports as specified resources. Under this approach, the EIM Purchaser would face an additional compliance obligation in the cap-and-trade program to reflect the leakage ARB calculates from resource shuffling. Because this approach treats the "true" GHG emissions profile and category of all EIM imports as unspecified, it precludes any method of recognizing EIM imports for their source-specific attributes, even though the EIM dispatch algorithm uses these source-specific attributes to select the resources that are deemed delivered to serve California load. In this case, it would be difficult for California load-serving entities to access out-of-state power through wholesale markets while earning credit for the renewable or low-GHG emissions profile of these out-of-state resources. In turn, this accounting treatment could

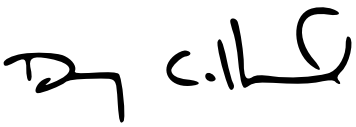
cause importers to prefer bilateral contracts over participation in regional electricity markets.[16]

In light of the interest in facilitating access to low-cost, low-GHG resources across the west, we suggest that the interaction between leakage mitigation and GHG reporting methods be considered by both ARB and CEC in their respective regulatory processes.

We appreciate that the two issues we raise here involve complicated conceptual and administrative challenges, including in the consistent coordination across state agencies, and hope that our comments will help the Commission further strengthen its programs. If we can be helpful in analyzing these issues further, please don't hesitate to reach out.

Again, we believe the current proposal represents an important step forward for improving the accuracy and integrity of electricity accounting and we commend the Commission for the hard work it reflects. We urge the Commission to proceed with its proposal and appreciate the opportunity to provide public comment.

Sincerely,



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[16] *See also* IEMAC 2018 Report, *supra* note 4, at 34 (echoing this concern).