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Assembly Bill 1110 Implementation Proposal for Power Source Disclosure

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ABSTRACT

A Power Source Disclosure requires retail electricity suppliers to disclose information annually through a Power Content Label to their end-use customers about the fuel mix of the electricity products they were sold the previous calendar year. Passed in 2016, Assembly Bill 1110 (Ting, Chapter 656, Statutes of 2016) directs the California Energy Commission to update the Power Source Disclosure Program to require electricity retail suppliers to disclose to its customers unbundled renewable energy credits and greenhouse gas emission intensities associated with the electricity portfolios offered to their customers.

The Energy Commission plans to initiate a rulemaking to amend the Power Source Disclosure program regulations in accordance with AB 1110. The *Assembly Bill 1110 Implementation Proposal for Power Source Disclosure Staff Draft Paper* details a proposed approach to modifying the Power Source Disclosure Program to implement AB 1110.

Keywords: Power Source Disclosure, PSD, power content label, PCL, greenhouse gas, GHG, emissions, emissions intensity factor, power mix, fuel mix, renewable energy credit, REC

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Figure 1: Proposed Power Content Label 21

Acronyms and Abbreviations

ACS	Asset-controlling supplier
CARB	California Air Resources Board
CH4	Methane
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
EIA	Energy Information Agency
EIM	Electricity Imbalance Market
GHG	Greenhouse gas
MRR	Mandatory Reporting Regulation
MWh	Megawatt-hour
N_2O	Nitrous oxide
POU	Publicly owned utility
PSD	Power Source Disclosure Program
REC	Renewable energy credit
RPS	Renewables Portfolio Standard

EXECUTIVE SUMMARY

The Power Source Disclosure Program is a consumer information program that requires the reporting and disclosure of the electricity sources used to serve retail customers during the previous calendar year. Passed in 2016, Assembly Bill 1110 (Ting, Chapter 656, Statutes of 2016) modifies PSD by also requiring the reporting and disclosure of the greenhouse gas (GHG) emissions intensity associated with the electricity serving retail customers.

The California Energy Commission will initiate a rulemaking to amend the PSD regulations in accordance with AB 1110. As part of the Energy Commission's pre-rulemaking, Energy Commission staff, in consultation with the Air Resources Board (CARB), developed the *Assembly Bill 1110 Implementation Proposal for Power Source Disclosure Staff Draft Paper,* which details a proposed approach to modifying PSD to implement AB 1110 and is aimed at soliciting stakeholder feedback.

To maintain consistency with CARB's key GHG emissions reporting and compliance programs, staff proposes a method to construct a retail supplier's GHG emissions intensity factor largely based on data reported through and methods used by the Mandatory Greenhouse Gas Reporting Regulation. In addition, the staff draft paper includes proposed operational definitions for key terms, proposed guidance for classifying renewable energy resources and for disclosing unbundled renewable energy credits (REC), a proposed adjustment mechanism for qualifying publicly owned utilities (POU) to generate emissions credits for qualifying GHG-free electricity, proposed new reporting requirements, and an updated Power Content Label and reporting template.

Energy Commission staff will hold a workshop in July 2017 to solicit feedback from stakeholders on this staff draft paper. Staff plans to incorporate this stakeholder feedback into draft regulatory language, which staff anticipates providing for stakeholder feedback in fall 2017. Following this public engagement, staff aims to initiate the formal rulemaking in early 2018.

Introduction

The Power Source Disclosure Program

The Power Source Disclosure (PSD) is a consumer information program. Retail suppliers of electricity are required to disclose information annually to their end-use customers about their power mix, which is the mix of resource types comprising the electricity portfolio sold to them during the previous calendar year. To complete this requirement, retail suppliers report to the California Energy Commission their gross electricity procurements, resales of electricity, and the net electricity sources used to serve retail load for the previous calendar year. The Energy Commission uses this information to generate California's total power mix, which is provided to retail suppliers. Retail suppliers then disclose the power mix associated with its electricity portfolios, as well as California's overall power mix on a Power Content Label to allow consumers to compare it to their own electricity portfolio.

Assembly Bill 1110

Passed in 2016, Assembly Bill 1110 (Ting, Chapter 656, Statutes of 2016) modifies the PSD program by further requiring retail suppliers to disclose the GHG emissions intensity (the rate of emissions per unit of electricity) associated with the electricity portfolios used to serve retail load. Retail suppliers are required to begin disclosing the GHG intensity factor associated with their electricity products on the Power Content Label in 2020 for the 2019 reporting year. AB 1110 also requires the Energy Commission to determine a format for disclosing unbundled RECs as a percentage of annual retail sales.

To implement these modifications, the Energy Commission must:

- Adopt guidelines for the reporting and disclosure of unbundled RECs and the GHG emissions intensity associated with retail sales based on the requirements of AB 1110.
- Adopt a method in consultation with CARB, for calculating GHG emissions intensity factors for each purchase of electricity by a retail supplier to serve its customers.
- Establish guidelines for adjustments to a GHG emissions intensity factor for a reporting year for any local publicly owned utility (POU) demonstrating generation of quantities of electricity in previous years in excess of its total retail sales and wholesale sales from specified sources that do not emit any GHGs.

AB 1110 Implementation Process

To implement the changes introduced by AB 1110, the Energy Commission will initiate a formal rulemaking process in early 2018, which commences with the publication of a

notice of proposed action and proposed regulations. The Energy Commission will have one year from the point in which staff initiate the formal rulemaking to adopt proposed regulations at an Energy Commission business meeting and submit the regulations to the Office of Administrative Law for review.[1]

In advance of this process, staff is conducting pre-rulemaking activities with the public to identify and develop proposed changes to the regulations. Energy Commission staff held a workshop on February 21, 2017, to initiate pre-rulemaking and solicit input on several scoping questions under consideration for the AB 1110 implementation. After evaluating stakeholder feedback, staff developed this proposal for implementing AB 1110. Staff anticipates presenting this proposal to stakeholders for consideration at a workshop in July 2017. Staff plans to incorporate stakeholder feedback on the staff discussion paper into the development of draft proposed regulatory language, which staff anticipates providing for stakeholder feedback in fall 2017. Following this public engagement, staff aims to initiate the formal rulemaking in early 2018.

Guiding Principles

PSD is a consumer transparency program. With the passage of AB 1110, the PSD Program is intended to provide a snapshot of the electricity resource type and GHG emissions characteristics of the electricity portfolios sold to retail customers. Several statutory principles guide the development of this implementation proposal:

- Present information disclosed to customers on the Power Content Label in a manner that is accurate, reliable, consistent, and simple to understand.
- Rely on the most recent verified GHG emissions data in developing GHG emissions intensity factors for specified and unspecified sources of power, while ensuring that these factors are made available to retail suppliers with sufficient notice to permit timely reporting under PSD.
- Ensure there is not double-counting of GHG emissions or environmental attributes.
- Minimize the reporting burden on retail suppliers.

Another consideration guiding staff implementation of AB 1110 is appropriate alignment with other state energy and GHG emissions programs. As intended by the bill's author,[2] the Energy Commission aims to develop a GHG emissions intensity method that is consistent, as much as possible, with ARB-administered programs,

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1 More information about the California state government rulemaking process can be found at http://www.oal.ca.gov/rulemaking_process/regular_rulemaking_process/.

2 Ting, Phil, California State Assembly Member, Nineteenth District, "Legislative Intent—Assembly Bill No. 1110," August 28, 2016, *California State Assembly Daily Journal*, http://docketpublic.energy.ca.gov/PublicDocuments/16-OIR-05/TN215755_20170203T095647_Jordan_Scavo_Comments_Assemblymember_Ting's_Letter_to_the_Daily.pdf.

including the Mandatory GHG Reporting Regulation (MRR) and the Cap-and-Trade Program.

MRR lays out the reporting requirements applicable to all stationary sources of GHG emissions and fuel suppliers with GHG emissions equal to or in excess of 10,000 metric tons carbon dioxide equivalent per year, as well as to all electricity importers. This regulation allows the state to monitor and enforce compliance with California's GHG emissions reduction programs, including the Cap-and-Trade Program. MRR requires entities to report annual emissions and associated information for in-state electricity generation and electricity imports annually.[3]

The Cap-and-Trade Regulation creates a market-based program designed to reduce GHG emissions covering 85 percent of the state's economy. Cap-and-Trade sets a firm cap on GHG emissions, and this cap declines every year to ensure that the state meets the GHG emissions reduction targets of Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006) and Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016). Cap and trade requires that all covered entities retire GHG allowances (and allows for retirement of a limited number of offset credits) equal to the entities' GHG emissions during a compliance period, typically three years. It also allows for a trading market for regulated entities and voluntary participants to buy and sell GHG emissions allowances. Under cap and trade, market forces create incentives to reduce GHG emissions below allowable levels through investments in clean technologies.

MRR data also serve as the basis for CARB's GHG Emission Inventory, an accounting of the state's estimated annual anthropogenic GHG emissions, including emissions from imported electricity resources, that is used to track progress toward California's GHG reduction goals. CARB developed the GHG Emission Inventory to conform to international GHG emissions accounting guidelines produced by the International Panel on Climate Change (IPCC).[4] The GHG Emission Inventory is a public GHG emissions accounting system that provides an annual snapshot of the GHG emissions characteristics of California resources, which is similar to the purpose of AB 1110.

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3 The greenhouse gases represented in MRR emissions reporting include CO_2, methane (CH_4), and nitrous oxide (N_2O) from geothermal generators and generators that combust fossil fuels and biogenic fuels. There is a one-year lag between the most recent available MRR data and PSD's current reporting year.

4 "California Greenhouse Gas Emissions for 2000-2014-Trends of Emissions and Other Indicators," *California GHG Emission Inventory, 2016 Edition*, ARB, https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2014/ghg_inventory_trends_00-14_20160617.pdf.

Program Definitions

Electricity Portfolio and Electricity Offering

Energy Commission staff proposes that the terms electricity portfolio and electricity offering be considered synonymous and mean a portfolio of electricity sources offered to some or all retail customers in a retail supplier's service area over a calendar year.

Electricity Resources Serving Private Contracts

Some retail suppliers have private contracts with individuals or organizations for providing electricity. The electricity resources procured to fulfill these private contracts are not available to the retail supplier's general customer base. These electricity portfolios are still subject to the reporting requirements under PSD. However, reporting and disclosing every private contract separately may be cumbersome. Therefore, staff proposes that a retail supplier's general or default electricity portfolio shall include the aggregated generation sources and associated GHG emissions from private contracts, rather than reporting separately for each private contract.

Annual Sales

In the past, the PSD Program has informally interpreted annual sales to mean retail sales as the term is defined in the *RPS Enforcement Regulations for POUs*. While the statutes governing PSD provide no definition of annual sales, and no guidance on whether line losses should be included in the power mix, it does state that line losses must be reflected in the GHG emissions intensity factor.

Staff proposes that annual sales should be defined as sales of electricity by a retail supplier to end-use customers and their tenants, measured in megawatt hours (MWh). This definition reflects staff's informal usage under current PSD guidance and would be consistent with the definition of annual sales used in the *RPS Enforcement Regulations for POUs*.[5] This definition of annual sales does not include energy consumption by a retail supplier, electricity used by a retail supplier for water pumping, or electricity produced for onsite consumption (self-generation) that was not sold to the customer by the retail supplier.

Staff proposes that annual sales should include transmission and distribution line losses associated with delivering electricity to retail customers, but should not include electricity used for municipal load (street lighting, for example). Municipal load would be pro-rata factored out of each line item of procured electricity on Schedule 1 of a retail supplier's annual report.

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5 *Enforcement Procedures for the Renewables Portfolio Standard for Local Publicly Owned Utilities*, http://www.energy.ca.gov/2016publications/CEC-300-2016-002/CEC-300-2016-002-CMF.pdf.

Greenhouse Gases

Targeted Gases

Energy Commission staff proposes to limit the calculation of the GHG emissions intensity factor associated with retail suppliers' electricity portfolios to include only the greenhouse gases typically associated with electricity generation emissions: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). These are the tracked GHGs under MRR, the EPA's Greenhouse Gas Reporting Program, and the Intergovernmental Panel on Climate Change's (IPCC) GHG inventory guidelines.[6]

Excluded Emissions

Although the terms are sometimes conflated, not all renewable resources are GHG-free. Under MRR, geothermal generators and generators that use biogenic fuels are required to report their GHG emissions.

The Cap-and-Trade Program exempts certain GHG emissions from the determination of a participating entity's compliance obligation. In particular, biogenic CO_2, meaning CO_2 emitted from electricity generators that use biogenic fuels such as biomass and all in-state and new out-of-state sources of biomethane, as well as fugitive emissions from geothermal generators (CO_2, CH_4, N_2O) are exempted from compliance obligations. In addition, biogenic CO_2 is reported but not counted in CARB's GHG Emission Inventory. Furthermore, the IPCC GHG inventory guidelines conclude that biogenic CO_2 should not be included in energy sector GHG emissions accounting, as energy-related biogenic CO_2 is already accounted for in the agriculture, forestry, and other land-use sectors.[7]

Fugitive GHG emissions from geothermal generators vary depending on the local geologic conditions and facility system design. Because of this degree of variability, fugitive GHG emissions from geothermal generators are not used to determine a compliance obligation under cap and trade. However, these emissions are reported under MRR and counted in the GHG Emission Inventory.

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6 See CARB's *Regulation for the Mandatory Reporting of Greenhouse Gas Emissions*, https://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr-2014-unofficial-02042015.pdf; EPA's *Greenhouse Gas Reporting Program, Subpart C*, https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=be77ce6e756f0befaa0dd95743e3342e&tpl=/ecfrbrowse/Title40/40cfr98_main_02.tpl; *2006 IPCC Guidelines for National Greenhouse Gas Inventories: Volume 2, http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html.*

7 "Frequently Asked Questions," IPCC Task Force on National Greenhouse Gas Inventories, http://www.ipcc-nggip.iges.or.jp/faq/faq.html.

Staff proposes that retail suppliers should report and disclose fugitive GHG emissions from geothermal generators in their Power Content Labels, but not CO_2 emitted from electricity generators burning biogenic fuels. CH_4 and N_2O from biogenic fuels, however, would be included in a generator's emissions intensity. This treatment would be consistent with electricity sector GHG accounting practices used by CARB's GHG Emission Inventory and IPCC guidance.

This approach would affect the GHG emissions intensity calculations but would not affect a utility's power mix, as biomass, eligible biomethane, and geothermal electricity generators would still be categorized as eligible renewable energy resources.

Data Sources and GHG Emissions Intensity Calculations

Data Sources and GHG Emissions Calculations

Energy Commission staff proposes to use the most recent publicly available MRR data to develop generator-specific emissions factors. MRR collects and disseminates the most robust generator-level GHG emissions data available for implementation of AB 1110.

Publicly available GHG emissions data reported under MRR are derived from a few reporting methods. Most in-state electricity generators directly report GHG emissions through MRR.[8] Out-of-state electricity generators do not directly report their GHG emissions to MRR; however, the MRR program calculates facility-specific GHG emission factors so electricity importers can report the quantity of imported electricity and report GHG emissions associated with their electricity imports. MRR data, therefore, would provide generator-specific annual GHG emissions (expressed in metric tons of CO_2 equivalent or CO_2e) or GHG emissions intensity factors (expressed in metric tons of CO_2e/MWh). This should cover most generators for PSD.

For any generators not covered by MRR, staff would calculate GHG emissions by multiplying the heat content of fuel consumed for electricity production[9] by stationary fuel emission factors[10] published by the Energy Information Agency (EIA). When calculating GHG emissions for such generators, staff proposes to convert emissions of CO_2, CH_4, and N_2O to the associated CO_2-equivalent (CO_2e) using global warming potentials conversion factors in a manner consistent with MRR.[11]

Staff proposes to calculate generator-specific GHG emissions intensity factors by dividing total GHG emissions of CO_2e by the annual net generation reported to EIA.[12] Staff further proposes to adopt the out-of-state generator-specific GHG emissions

8 Small generators with an annual capacity less than 1 MW or that emit fewer than 10,000 MT of CO_2e a year are not required to report under MRR.

9 "Annual Electric Utility Data," Energy Information Agency, Form EIA-923, https://www.eia.gov/electricity/data/eia923/.

10 "Carbon Dioxide Emission Coefficients," Energy Information Agency, https://www.eia.gov/environment/emissions/co2_vol_mass.php ; EIA's factors are supported stationary fuel combustion emissions factors published by the Environmental Protection Agency. See "Emission Factors for Greenhouse Gas Inventories," Environmental Protection Agency, https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf.

11 Direct Global Warming Potential, IPCC, https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html.

12 Annual net generation data is published by EIA on Form 923.

intensity factors that CARB staff calculates and publishes as part of the MRR reporting tools for electric power entities.[13]

Cogeneration Facilities

Cogeneration plants produce GHG emissions in creating both useful heat as well as electricity. However, MRR collects total generator emissions, which includes emissions for heat used in industrial processes.

For cogeneration facilities, staff proposes to reflect only the portion of GHG emissions associated with electricity generation. To determine this portion, staff proposes to divide the heat content of the fuel consumed for electricity generation by the heat content of the total fuel consumed by the cogeneration facility and multiply that by the total GHG emissions.[14]

Timing

Staff proposes to provide the most recently available GHG emissions intensity factors for retail suppliers to use in PSD reporting, which means the Energy Commission proposes to publish a list of generator-specific emissions intensity factors annually. The timing of GHG emissions data availability from MRR will result in generator-specific emissions intensity factors being based on data from an earlier year than the reporting year under PSD.

For example, a retail supplier reporting under PSD in 2020 would be reporting on the electricity portfolios available to retail customers in 2019 and would use GHG emissions intensity factors derived from emissions that occurred in 2018 for in-state generators or 2017 for out-of-state generators. However, CARB staff analysis of MRR data indicates that generators' year-to-year emissions intensity factors do not vary significantly.

13 See Workbook 1: EPE Importers and Exporters, https://www.ccdsupport.com/confluence/display/calhelp/Reporting+Form+Instructions#EPE.

14 These data can be found on EIA's Form 923.

Specified Sources of Power

REC Reporting for the Power Mix

The current PSD regulation instructs retail suppliers to report eligible renewable energy generation according to the year it was generated. It does not, however, offer specific guidance on how the procurement and retirement of the associated RECs would affect the eligible renewable energy generation in the power mix for each electricity portfolio. Some stakeholders have requested eligible renewable energy generation to be reported in the year the associated REC is retired. While this approach would more closely follow how RECs are reported under the Renewables Portfolio Standard (RPS), a mismatch between how eligible renewable electricity is accounted for in PSD and RPS would remain due to differences in reporting time frames. PSD requires retail suppliers to report annually on the electricity portfolios they sold to retail customers the previous year. The RPS is constructed with multiyear compliance periods that allow retail suppliers to reconcile annual REC retirements at the end of the period and among compliance periods, as RECs have a 36-month period in which they can be retired. These programmatic differences prevent eligible renewable energy resource reporting under PSD to align with that through the RPS program.

Furthermore, reporting eligible renewable energy generation in the year the associated REC is retired would produce incongruity between annual electricity procurements and annual retail sales, as renewable electricity generation would be reported according to the REC retirement year, while nonrenewable generation would still be reported according to the year in which it was generated.

Finally, the purpose of the original PSD Program and AB 1110 is to provide transparency to customers about the electricity they consume. Reporting eligible renewable electricity according to the actual generation of electricity (and the associated RECs) more closely aligns with the purpose of the PSD Program.

As such, staff proposes that electricity from eligible renewable energy sources should be reported according to the year in which it was generated. Staff further proposes that a retail supplier's electrical transactions may be categorized only as an eligible renewable resource in the power mix if the REC and associated energy were transacted together (either directly or through firming-and-shaping.)

RECs and GHG Emissions Intensity Factors

Under CARB's GHG emissions programs, RECs do not convey an emissions profile from the generator from which the RECs were derived. The MRR program tracks GHG emissions from renewable electricity generators according to actual generation, not the disposition of RECs. And under California's Cap-and-Trade Regulation, RECs are not

used to confer credit of zero-emissions generation, as doing so would lead to leakage and double-counting.

While RECs are compliance instruments under California's RPS, the RPS is fundamentally different from PSD in purpose, compliance mechanism, and metrics. To appropriately reflect the GHG emissions intensity associated with each retail supplier's electricity portfolio, staff proposes to treat RECs in its GHG emissions accounting in a manner consistent with treatment under CARB's MRR and Emission Inventory programs.

GHG Emissions of Firmed-and-Shaped Electricity Products

As discussed above, RECs convey no GHG emissions value under CARB's GHG emissions programs. As such, the MRR stipulates GHG emissions associated with the generation of electricity imported into California is determined by the emissions profile of the generator. In the case of firmed-and-shaped electricity products,[15] the emissions profile of the substitute power actually delivered into California is used to calculate the GHG emissions of the electricity product, rather than the emissions profile of the generator from which the RECs were derived.

To give retail suppliers credit for the cost associated with procuring firmed-and-shaped resources, the Cap-and-Trade Program provides the RPS adjustment, which provides an optional adjustment to an entity's compliance obligation in limited circumstances based on the retirement of RECs associated with eligible firmed-and-shaped electricity products.[16] However, the RPS adjustment is meant to credit only the added cost of procuring firmed-and-shaped products that retail suppliers bear to comply with RPS. It is not recognition of avoided emissions or the emission characteristics of the RECs used in firmed-and-shaped electricity products. The RPS adjustment does not change the GHG emissions associated with the firmed-and-shaped electricity product.

For determining a retail supplier's GHG emissions intensity (but not its power mix), staff proposes to categorize firmed-and-shaped transactions based on the emissions profile of the substitute electricity. This approach aligns with that taken by CARB across its GHG emissions programs. For cases in which the source of the substituted electricity is

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15 *Firmed-and-shaped electricity products* is a broad term that can represent several types of electricity contracts. In the context of this document, the term generally means matching substitute electricity with RECs from a generator that is not interconnected to a California balancing authority, meaning the transacted electricity was not directly derived into California from the eligible renewable generator. For a more in-depth discussion of firmed-and-shaped transaction, see the California Public Utilities Commission's decision on the subject *Decision Implementing Portfolio Content Categories for the Renewables Portfolio Standard Program*, Public Utilities Commission, December 15, 2011, http://docs.cpuc.ca.gov/WORD_PDF/FINAL_DECISION/156060.PDF.

16 The RPS adjustment reduces an LSE's total emissions according to the quantity of eligible retired RECs (in MWh) multiplied by the default emissions factor for unspecified power.

unknown, the substituted electricity would be assigned the GHG emissions intensity of unspecified power (discussed below).

In addition, staff proposes not to provide any adjustments based on the retirement of RECs transacted through firmed-and-shaped electricity products. A main purpose of the PSD Program is to bring additional transparency regarding the GHG emissions intensity associated with electricity portfolios sold to retail customers in California. As such, staff concludes that any adjustments to GHG emissions for the retirement of RECs from firmed-and-shaped electricity products would prevent a more accurate accounting of the GHG emissions associated with a retail supplier's electricity portfolios used to serve retail customers.

Firmed-and-Shaped Electricity Products in the Power Mix

As discussed above, firmed-and-shaped electricity products would be categorized in the power mix according to the resource type of the transacted RECs.

Null Power

Under the current PSD regulations, null power (electricity from renewable generators that has been disassociated from its RECs) is categorized as unspecified power for the power mix on the Power Content Label.

However, CARB's GHG emissions programs track emissions based on actual generation, so null power carries the GHG emissions profile of the associated generator regardless of the disposition of the associated RECs.

Staff proposes that null power should remain categorized as unspecified power for the power mix of an electricity portfolio. For the calculation of the GHG emissions intensity factor of an electricity portfolio, staff proposes to treat null power in a manner consistent with CARB practices. This means that null power would be assigned the emissions intensity factor of the specific generator from which it was derived.

Unbundled RECs

AB 1110 requires the Energy Commission to determine the format for disclosing the portion of annual sales from unbundled RECs.[17] The current PSD regulation provides no formal guidance regarding how to report and reflect unbundled RECs on the Power Content Label. The past practice of some LSEs has been to report unbundled REC purchases as electricity purchases in their PSD filings and to reflect unbundled RECs in the power mix for each electricity portfolio on the Power Content Label. This has led to concerns that the Power Content Label does not reflect the actual generating sources

17 See Section 398.4 (h) (7) of the Public Utilities Code, https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PUC&division=1.&title=&part=1.&chapter=2.3.&article=14.

comprising an electricity portfolio, as unbundled REC purchases have no underlying electricity.

Since unbundled RECs do not represent an electricity source nor convey an emissions profile under California's GHG emissions programs, Energy Commission staff proposes that unbundled RECs should not be included in the power mix or GHG emissions intensity calculations. Under this proposal, a retail supplier would report its unbundled RECs separately in its PSD filing and reflect the percentage of retail sales associated with unbundled RECs on the Power Content Label as a footnote.

Staff further proposes that retail suppliers would report their unbundled RECs on the basis of the retirement of these RECs. This proposal differs from staff's proposed treatment of RECs associated with directly delivered or firmed-and-shaped electricity transactions, as described above. This is because unbundled RECs can be bought and sold more than once before ultimately being retired, which could result in double-counting. RECs from directly delivered or firmed-and-shaped electricity transactions, on the other hand, cannot be resold without reverting to an unbundled REC, so the issue of double-counting would not apply.

Electricity Imbalance Market Transactions

Staff proposes that transactions made through the Energy Imbalance Market (EIM)[18] should be reported in a manner that is consistent with MRR.

The current MRR allows EIM transactions to be reported as specified sources. Any future regulatory changes regarding the treatment of EIM reporting under MRR will be monitored by staff. Reflecting future changes in PSD will likely have to be addressed under a new proceeding.

Transmission Losses From Imported Electricity

Under MRR, electricity imports in which the retail supplier has not accounted for transmission line losses are applied a transmission loss correction factor of 1.02 to the quantities of electricity imported into a California balancing authority. This adjustment ensures a more complete accounting of the GHG emissions associated with generation serving California load.

Staff proposes to adopt MRR's treatment of transmission losses from imported electricity. This means that each quantity of specified imports would be increased by 2 percent unless the retail supplier can provide documentation that these transmission

18 An *Energy Imbalance Market* is a real-time wholesale energy market that allows participating balancing authority areas to buy and sell the final few megawatts of power to satisfy demand during the hour it's needed. (See https://www.caiso.com/informed/Pages/EIMOverview/Default.aspx.)

losses have been accounted for. The transmission loss correction factor imports would be used to calculate the power mix and GHG emissions intensity factor of a retail supplier's electricity portfolio.

Unspecified Sources of Power

Default Emissions Factor for Unspecified Power

Energy Commission staff proposes that emissions from unspecified power should be treated in a manner consistent with MRR. The current MRR assigns unspecified power a default emissions factor of 0.428 MT CO_2e/MWh.[19]

In-State Unspecified Power

CARB's default emissions factor for unspecified power applies only to imports of unspecified power. However, Energy Commission staff is not aware of a simple and reliable method of distinguishing between in-state and imported sources of unspecified power purchased through open market transactions. Therefore, Energy Commission staff proposes that CARB's default emissions factor would be used for all sources of unspecified power.

Asset-Controlling Suppliers

Asset-controlling suppliers (ACS), such as Powerex and Bonneville Power Administration, have system mixes composed of primarily large hydroelectric plants with a small portion of other generation sources. A purchase from an ACS system mix cannot be attributed to a single generation facility, meaning such transactions are classified as unspecified power under the current PSD program. However, MRR contains provisions that allow an ACS to be assigned a GHG emissions factor that reflects the ACS's system mix for the reporting year. There is a multi-year lag in ACS emissions factor data and MRR reporting data. (For example, 2019 data reported in 2020 would use an emissions factor based on the ACS's 2016 generation and emissions.) The assigned emissions factors for ACSs are considerably lower than those for unspecified power.

Staff proposes that transactions from ACSs, which represent a system of mixed resources, would be assigned the ACS-specific GHG emissions factor as determined under MRR. For the power mix, purchases from ACSs should continue to be reported as a separate line item of unspecified power.

Transmission Losses From Unspecified Power

Under MRR, electricity imports in which the retail supplier has not accounted for transmission line losses are applied a transmission loss correction factor of 1.02 to the quantities of electricity imported into a California balancing authority. This adjustment

19 A new bill in the Legislature, Assembly Bill 79, would require CARB to update the method for determining emissions from unspecified power.

ensures a more complete accounting of the GHG emissions associated with generation serving California load.

Staff proposes to adopt MRR's treatment of transmission losses from unspecified sources of power. This means that the quantity of unspecified power would be increased by 2 percent unless the retail supplier can provide documentation that these transmission losses have been accounted for. The transmission loss correction factor would be used to calculate the power mix and GHG emissions intensity factor of a retail supplier's electricity portfolio.

Emissions Adjustment for Publicly Owned Utilities

AB 1110 requires the Energy Commission to develop guidelines for adjustments to a GHG intensity factor for a reporting year for any POU that demonstrates it generated GHG emission-free electricity in excess of its retail sales and wholesale sales of specific sources.

Qualifying Requirements

Energy Commission staff understands that this GHG emissions adjustment provision was intended to address the unique contractual circumstances of excess Hetch Hetchy hydroelectric generation owned by the San Francisco Public Utilities Commission.

Any POU that wishes to apply for this adjustment must demonstrate that it generated GHG-free electricity in excess of its retail sales and wholesale sales of specific sources. To verify a POU's eligibility for the adjustment, staff proposes requiring each applying POU to demonstrate qualifying generation amounts by submitting all associated contracts for the sale of the qualifying generation.

Adjustment Mechanism

Staff proposes to allow a qualifying POU to generate annually emissions credits equal to the quantity of eligible generation in excess of its retail sales and wholesale sales of specified sources for a given year multiplied by the default emissions factor for unspecified power. These emissions credits can be applied by the POU to reduce a POU's annual emissions by the amount applied for reducing or eliminating a POU's emissions intensity on the Power Content Label. Each emissions credit can be applied only once to a reporting year's Power Content Label.

Consistent with recent relevant modifications to the *RPS Enforcement Regulation for POUs* for alternative compliance mechanisms, staff proposes a 20-year life for each emissions credit generated to capture the annual fluctuation of hydroelectric output. This means that an eligible POU could bank emissions credits for up to 20 years after the year in which the credit was generated[20] for later use in reducing annual emissions as reflected on the Power Content Label. The generation of credits would begin during the first year of reporting GHG emissions under PSD.

For example, if a POU generated 1,000 MWh of qualifying GHG-free electricity in 2019 that was in excess of its 2019 retail sales and wholesale sales of specified sources, it

20 Credits would expire on an annual basis. The year following the reporting year (for example, 2020 for 2019 generation data) would be the first year in the 20-year banking period for a specific credit.

would be credited for 428 MT CO_2e (1,000 MWh x 0.428 MT CO_2e/MWh) of adjustment credits that could be used for the retail supplier's 2019 PSD report or any PSD report through 2030.

Proposed New Reporting Requirements

Energy Commission staff aims to minimize new reporting requirements. Under the AB 1110 implementation proposal outlined above, a retail supplier reporting under PSD would need to make the following changes to Schedule 1 of its annual filing to the Energy Commission:

- Report unbundled RECs in aggregate, rather than itemized (Cell D8 on *Proposed Schedule 1* attachment).
- Report quantity of generation self-consumed by the retail supplier, such as for municipal street lighting (Cell D9).
- Mark which line items are firmed-and-shaped imports (Column I).
- Input the GHG emissions intensity factor for each line item from the list of factors provided by the Energy Commission (Column P).

Proposed Power Content Label

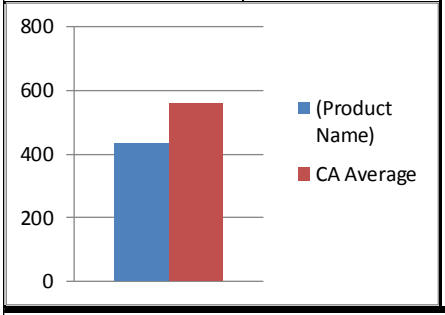
The proposed annual Power Content Label builds upon the existing label by adding GHG intensity of the product near the top and the percentage of the electricity portfolio covered by unbundled RECs in footnote 4. The comparative GHG emissions intensity chart auto-populates. Although retail suppliers would report GHG emissions denominated in metric tons CO_2e/MWh, the GHG emissions intensity of the electricity portfolio would be converted to pounds of CO_2e/MWh for disclosure to customers. (This conversion would be performed automatically on the PSD reporting form.) Staff would create variants of the proposed label so that a retail supplier could display multiple electricity portfolios on a single Power Content Label.

Figure 1: Proposed Power Content Label

(ENTITY NAME & PRODUCT NAME)

2019 POWER CONTENT LABEL

Greenhouse Gas Emissions Intensity (in lbs CO_2e/MWh)[1]	
(Product Name)	CA Average
431	**562**



Energy Resources	Power Mix	CA Total Mix
Eligible Renewable[2]	**31%**	**22%**
Biomass & biowaste	3%	3%
Geothermal	5%	4%
Eligible hydroelectric	0%	1%
Solar	0%	6%
Wind	23%	8%
Coal	**0%**	**6%**
Large Hydroelectric	**10%**	**5%**
Natural Gas	**40%**	**44%**
Nuclear	**0%**	**9%**
Other	**0%**	**0%**
Unspecified Sources of Power[3]	**20%**	**14%**
TOTAL[4]	**100%**	**100%**

[1] Greenhouse gas emissions intensity represents the CO_2 equivalent of greenhouse gases resulting from each megawatt hour of electricity generated for this product. For more detail, visit www.energy.ca.gov/pcl/

[2] Eligible renewable energy resources are based on eligibility under CA's Renewable Portfolio Standard. For more, see http://www.energy.ca.gov/renewables/documents/#rps

[3] Unspecified sources of power means electricity that is purchased through open market transactions and is not traceable to specific generation sources.

[4] This product has enough retired unbundled Renewable Energy Credits to account for 12% percent of the product's electricity. Unbundled RECs are used to meet renewable energy procurement requirements under CA's RPS. Unbundled RECs are not counted in this product's power mix or in its GHG emissions intensity. For more information, visit www.energy.ca.gov/pcl/

For specific information about this electricity product, contact:	**(Entity Name)**	(Entity Phone Number) (Entity Website)
For general information about the Power Content Label, consult:	**California Energy Commission**	1-844-217-4925 www.energy.ca.gov/pcl/

Source: California Energy Commission staff