

Los Angeles  Department of Water & Power

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September 15, 2014

Clerk of the Board  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

Dear Clerk of the Board:

Subject: Comments on the Proposed Amendments to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (released July 29, 2014)

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to provide comments on the proposed amendments to the California Air Resources Board (ARB) Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Mandatory Reporting Regulation or MRR).

LADWP, along with other electric utility stakeholders, met with ARB staff on August 27 to discuss concerns with some of the proposed amendments to the Electric Power Entity reporting requirements. Below are LADWP's comments for your consideration, presented in the order in which they appear in the proposed amended regulation. LADWP requests that these issues and concerns be addressed and resolved in 15-day changes to the proposed amendments.

Below is a brief summary of LADWP's concerns and recommendations, followed by detailed comments and discussion on each item.

- §95111(a)(12) - This proposed amendment would require electricity distribution utilities to "...report the annual MWh, by source, of all electricity sold in the CAISO market, and the emission factor for each source..." This requirement should be modified to allow utilities to report either by source or by system, to accommodate differences between utilities within and outside of the California Independent System Operator (CAISO) balancing authority. Without the ability to report by system, LADWP is concerned that the uncertainty involved in estimating an individual source of electricity from within a utility's system may adversely affect the verification statement for the entire Electric Power Entity report. Also, this reporting requirement should be limited to electricity where the reporting entity is the First Deliverer, as defined in the MRR, since there is no compliance obligation on electricity that is re-sold within California.
- §95111(b)(2) – The 1.0 transmission loss factor for imported electricity from specified sources should be retained, to avoid over-stating GHG emissions for transmission losses that are supported by a California balancing authority or paid back with electricity sourced from California.

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- §95111(b)(2) – The existing methodology that uses EPA GHG emission data to calculate emission factors for out-of-state electricity generating facilities should be retained, to ensure that “a tonne is a tonne” for both in-state and imported electricity, and avoid creating a competitive advantage or disadvantage for out-of-state electricity generating facilities.
- §95111(g)(1)(N) – It is not possible to obtain generation meter data for all specified imports to verify that the power was generated by the facility or unit at the time it was directly delivered. This requirement should be limited to imported renewable energy that is subject to the lesser of analysis under the RPS regulations.

**1) Reporting of Electricity Sold into the California Independent System Operator (CAISO) market [§95111(a)(12)]**

ARB Proposed Amendment

ARB is proposing to add the following new requirement to the Electric Power Entity report:

*95111(a)(12) Electrical Distribution Utility Sales into CAISO. All electricity distribution utilities except IOUs must report the annual MWh, by source, of all electricity sold in the CAISO market, and the emission factor for each source, beginning with calendar years 2013 and 2014, reported in 2015.*

This proposed amendment is related to the prohibition on the use of GHG emission allowances in section 95892(d)(5) of the Cap & Trade regulation. The intent is to ensure that Publicly Owned Utilities (POUs) purchase a sufficient number of GHG emission allowances to satisfy the compliance obligation associated with electricity sold into the CAISO wholesale electricity market.

Analysis and Concerns:

1. Alternative Reporting Methods to Allow for Differences among POUs: There is no one-size-fits-all method for determining electricity sold in the CAISO market that is suitable for all utilities. Differences among the utilities should be recognized and accommodated. A method appropriate for POUs within the CAISO balancing authority may not work for POUs outside of the CAISO balancing authority. For example, POUs within the CAISO use an hourly resource stacking method to determine net sales into the CAISO, so it is feasible for them to estimate emissions from individual generating resources. However, for POUs outside of the CAISO that sell power from their system rather than from a specific generating facility or unit, the only way to accurately estimate emissions associated with electricity sold into the CAISO would be to use an overall system average emission factor. The rule language should be modified to allow utilities to report either by source or by system.

2. Complexity of Estimating GHG Emissions for Wholesale Sales: Determining the megawatt hours (MWh) of electricity sold in the CAISO wholesale electricity market is fairly straightforward. However, estimating emissions associated with those sales is complex. Electricity generated by POUs can go to serve native load or wholesale sales. For POUs outside of the CAISO that have a diverse portfolio of generating resources, it can be difficult to estimate which generating resource(s) supplied electricity for the wholesale sale. If a POU is also a balancing authority (such as LADWP) that uses its internal generating resources to support transmission losses and balance the system, it can be extremely complicated.
3. Verification Concerns: For POUs outside of the CAISO, the ability to report by system is essential. Without this option, the complexity and uncertainty involved in estimating a source of electricity within their system that supported the wholesale sale may result in an Adverse Verification Statement for the entire Electric Power Entity report.
4. First Deliverer only: Since the purpose of this reporting requirement is to ensure that POUs purchase sufficient GHG emission allowances to cover the compliance obligation for electricity sold into the CAISO market, electricity that was generated by a different entity, purchased by the POU and then resold into the CAISO should be excluded under this reporting requirement. The First Deliverer of the electricity is responsible for the compliance obligation. There is no compliance obligation on electricity that is re-sold within California. Therefore, this reporting requirement should be limited to electricity where the POU is the First Deliverer, as defined in the MRR.

#### Recommendations

1. No single reporting method is suitable for all utilities; therefore the rule language should allow utilities to report either by source (for POUs within the CAISO) or system (for POUs outside the CAISO), whichever is appropriate.
2. For clarity, "Electricity Sold in to the CAISO Market" should be defined.
3. Throughout the MRR, GHG emissions are reported as an annual aggregate. To be consistent, this new requirement should be revised to report *aggregated annual MWh and GHG emissions* (as the sum of hourly data for electricity sold into the CAISO), rather than by emission factor (which may vary from hour to hour). Reporting by emission factor implies hourly data, which is not appropriate for an annual report.
4. Since there is no compliance obligation on electricity that is re-sold within California, this reporting requirement should be limited to electricity where the reporting entity is the First Deliverer, as defined in the MRR.

Recommended Revisions to the Proposed Rule Language

LADWP recommends the following revisions to the proposed reporting requirement:

**95111(a)(12)**

*“Electrical Distribution Utility Sales into CAISO. All Except for (a) IOUs and (b) POUs that consign all their allocated allowances to auction and attest that no auction proceeds will be used to meet compliance obligations associated with sales into the CAISO markets, electricity distribution utilities except IOUs must report the aggregated annual MWh and GHG emissions, by source or system as specified on the NERC E-tag, of all electricity sold in the CAISO market per the CAISO tariff, where the electricity distribution utility is the First Deliverer and the emission factor for each source, beginning with calendar years 2013 and 2014, reported in 2015.*

**Add definition of Electricity Sold in the CAISO Market**

*Electricity Sold in the CAISO Market means any transaction that is financially settled by the CAISO under the CAISO tariff, where the California Independent System Operator (CAISO) is the contracting counterparty, except for the exclusions specified in Section 11.29 of the CAISO tariff.*

**2) The 1.0 Transmission Loss Factor should be Retained to Avoid Over-Estimating GHG Emissions for Transmission Losses [§95111(b)(2)]**

ARB Proposed Amendment

ARB is proposing to delete the 1.0 transmission loss factor for electricity imported from specified sources, and apply the 1.02 transmission loss factor to all imported electricity.

*95111(b)(2) Calculating GHG Emissions from Specified Facilities or Units. For electricity from specified facilities or units, the electric power entity must calculate emissions using the following equation:*

$$CO_2e = MWh \times TL \times EF_{sp}$$

*Where:*

*CO<sub>2</sub>e = Annual CO<sub>2</sub> equivalent mass emissions from the specified electricity deliveries from each facility or unit claimed (MT of CO<sub>2</sub>e).*

*MWh = Megawatt-hours of specified electricity deliveries from each facility or unit claimed.*

*EF<sub>sp</sub> = Facility-specific or unit-specific emission factor published on the ARB Mandatory Reporting website and calculated using total emissions and transactions data as described below. The emission factor is based on data from the year prior to the reporting year.*

*EF<sub>sp</sub> = 0 MT of CO<sub>2</sub>e for facilities below the GHG emissions compliance threshold for delivered electricity pursuant to the cap-and-trade regulation during the first compliance period.*

*TL = Transmission loss correction factor.*

*TL = 1.02 when deliveries are not reported as measured at the busbar, to account for transmission losses between the busbar and measurement at first point of receipt in California.*

*TL = 1.0 when deliveries are reported as measured at the busbar.*

As a result, all electricity imports would be inflated by two percent, regardless of whether the transmission losses are supported using electricity from within or outside of California.

### Analysis and Concerns

Transmission losses are typically supported by the balancing authority through which the energy is flowing, and are compensated for using electricity produced by other generating resources. When a California Balancing Authority supports transmission losses for imported electricity, the balancing authority's internal generation is used to compensate for the transmission losses, and the GHG emissions associated with supporting the transmission losses are embedded in the balancing authority's internal generation data and accounted for as part of the in-state generating facility emissions reports. Therefore, it is appropriate to apply a transmission loss factor of 1.0 to imported electricity where transmission losses are supported by a California balancing authority.

If transmission losses are supported by a balancing authority outside of California, the owner of the electricity has to pay back the transmission losses, either financially or with electricity, to the transmission service provider. If the transmission losses are paid back with electricity sourced from within California, GHG emissions for that energy have already been accounted for under the California reporting requirements. Therefore, it is appropriate to apply a transmission loss factor of 1.0 to imported electricity when transmission losses are paid back using electricity sourced from within California.

The proposed amendment would over-estimate (double count) GHG emissions for transmission losses, and result in inaccurate reporting of GHG emissions and unnecessary Cap & Trade compliance costs for emissions that do not exist. For example, electricity imported from Intermountain Generating Station in Utah is supported by LADWP's balancing authority area and generating resources. Therefore, a transmission loss factor of 1.0 is appropriate for electricity imported from Intermountain, because the downstream line losses are compensated for using electricity produced by California generating resources or other imported electricity, both of which are subject to reporting under the Mandatory Reporting Regulation. Applying a transmission loss factor of 1.02 rather than 1.0 would increase reported emissions by approximately 200,000 metric tons per year.

### Recommendations

LADWP recommends retaining the 1.0 transmission loss factor and applying it to imported electricity where transmission losses are supported by a California Balancing Authority or paid back with electricity sourced from within California. This is necessary to avoid overstating GHG emissions for the support of transmission losses. Applying a 1.02 transmission loss factor across the board would artificially inflate California's GHG emissions and unfairly penalize California entities when a California balancing authority is supporting the transmission all the way from the generating facility into California.

Recommended Revisions to the Rule Language

95111(b)(2) *Calculating GHG Emissions from Specified Facilities or Units.* For electricity from specified facilities or units, the electric power entity must calculate emissions using the following equation:

$$CO_2e = MWh \times TL \times EF_{sp}$$

Where:

CO<sub>2</sub>e = Annual CO<sub>2</sub> equivalent mass emissions from the specified electricity deliveries from each facility or unit claimed (MT of CO<sub>2</sub>e).

MWh = Megawatt-hours of specified electricity deliveries from each facility or unit claimed.

EF<sub>sp</sub> = Facility-specific or unit-specific emission factor published on the ARB Mandatory Reporting website and calculated using total emissions and transactions data as described below. The emission factor is based on data from the year prior to the reporting year.

EF<sub>sp</sub> = 0 MT of CO<sub>2</sub>e for facilities below the GHG emissions compliance threshold for delivered electricity pursuant to the cap-and-trade regulation during the first compliance period.

TL = Transmission loss correction factor.

TL = 1.02 ~~when deliveries are not reported as measured at the busbar, to account for transmission losses~~ **supported by generation outside of** ~~between the busbar and measurement at first point of receipt in a California~~ **balancing authority.**

**TL = 1.0 when transmission losses are supported by a California balancing authority or paid back using electricity sourced from within California.** ~~deliveries are reported as measured at the busbar.~~

**3) Method for calculating Specified Source Emission Factors for out-of-state electricity generating facilities [§95111(b)(2)]**

ARB Proposed Amendment

ARB is proposing to change the source of GHG emission data used to calculate emission factors for electricity imported from specified sources as follows.

95111(b)(2) *The Executive Officer shall calculate facility-specific or unit-specific emission factors and publish them on the ARB Mandatory Reporting website using the following equation:*

$$EF_{sp} = E_{sp} / EG$$

Where:

$E_{sp}$  = CO<sub>2</sub> e emissions for a specified facility or unit for the report year (MT of CO<sub>2</sub> e).

EG = Net generation from a specified facility or unit for the report year shall be based on data reported to the Energy Information Administration (EIA) reported to ARB under this section (MWh).

(A) For specified facilities or units whose operators are subject to this article or whose owners or operators voluntarily report under this article,  $E_{sp}$  shall be equal to the sum of CO<sub>2</sub> e emissions reported pursuant to section 95112.

(B) For specified facilities or units whose operators are not subject to reporting under this article or whose owners or operators do not voluntarily report under this article, but are subject to the U.S. EPA GHG Mandatory Reporting Regulation,  $E_{sp}$  shall be based on GHG emissions reported to the Energy Information Administration (EIA) U.S. EPA pursuant to 40 CFR Part 98. Emissions from combustion of biomass-derived fuels will be based on EIA data, when not reported to U.S. EPA.

(C) For specified facilities or units whose operators are not subject to reporting under this article or whose owners or operators do not voluntarily report under this article, nor are subject to the U.S. EPA GHG Mandatory Reporting Regulation,  $E_{sp}$  is calculated using heat of combustion data reported to the Energy Information Administration (EIA) as shown below.

$$E_{sp} = 0.001 \times \Sigma(Q \times EF)$$

Where:

0.001 = conversion factor kg to MT

Q = Heat of combustion for each specified fuel type from the specified facility or unit for the report year (MMBtu). For cogeneration, Q is the quantity of fuel allocated to electricity generation consistent with EIA reporting. For geothermal electricity, Q is the steam data reported to EIA (MMBtu).

EF = CO<sub>2</sub>e emission factor for the specified fuel type as required by this article (kg CO<sub>2</sub>e /MMBtu). For geothermal electricity, EF is the estimated CO<sub>2</sub>e emission factor published by EIA.

(D) Facilities or units will be assigned an emission factor by the Executive Officer based on the type of fuel combusted or the technology used when an U.S. EPA GHG Report or EIA fuel consumption report is not available, including new facilities and facilities located outside the U.S.

### Analysis and Concerns

Under the existing rule language, GHG emissions for in-state and imported electricity are calculated using the same method specified in the U.S. Environmental Protection Agency (EPA) mandatory reporting rule, based on Continuous Emission Monitoring System (CEMS) data. The proposed amendment would change the emission calculation method for out-of-state electricity generating facilities to a fuel based method (using fuel data reported to the Energy Information Administration (EIA) and emission factors), while retaining EPA's emission calculation method for in-state generating facilities.

While ARB was developing its mandatory reporting rule in 2007, ARB staff evaluated the different emission calculation methods (CEMS and fuel based), and selected EPA's emission calculation method based on CEMS data as the method required for all in-state and out-of-state electricity generating units that are subject to federal regulation. This decision ensured that GHG emissions reported to ARB are consistent with GHG emissions reported to EPA, and that "a tonne is a tonne" for each reporting facility. That is why MRR 95111(b)(2) specifies use of GHG emissions reported to EPA pursuant to 40 CFR Part 98 to calculate emission factors for out-of-state generating facilities. Furthermore, CEMS data

reported to EPA must pass rigorous quality assurance and quality control (QA/QC) checks; fuel data reported to EIA is not subject to QA/QC requirements.

The proposed amendment would create inconsistency between in-state and imported electricity, because CEMS and fuel-based emission calculation methods do not produce the same result. Under the proposed amendments, a tonne of GHG emissions reported for imported electricity would *not* be equivalent to a tonne of GHG emissions reported by in-state generating facilities. This inconsistency would create a competitive advantage or disadvantage for out-of-state electricity generating facilities under the Cap & Trade program, and unexpected increases in compliance costs for imported electricity.

### Recommendations

LADWP recommends that ARB withdraw the proposed amendments and retain the existing method for calculating emission factors for specified out-of-state electricity generating facilities. This will ensure that the same emission calculation method (GHG emission data reported to EPA under 40 CFR Part 98, which is based on CEMS data) is used to report GHG emissions for both in-state and out-of-state electricity generating facilities.

Retaining the existing method will ensure rigorous and consistent accounting of GHG emissions for both in-state and imported electricity, and a level playing field under the cap & trade program for in-state and out-of-state electricity generating facilities. In addition, this will ensure consistency with previously reported GHG emission data and an apples-to-apples comparison for measuring changes in reported GHG emissions over the duration of the AB 32 program.

## **4) Meter Data for Verification of Specified Imports [§95111(g)(1)(N)]**

### ARB Proposed Amendment

ARB is proposing to modify an existing requirement to retain generation meter data for verification purposes, and require the meter data be used to calculate the lesser of the hourly meter or e-tag data for each hour.

*(g) Requirements for Claims of Specified Sources of Electricity, and for Eligible Renewable Energy Resources in the RPS Adjustment.*

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*(1) Registration Information for Specified Sources and Eligible Renewable Energy Resources in the RPS Adjustment. The following information is required:*

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*(N) For verification purposes, retain meter generation data from all specified sources to document that the power claimed by the reporting entity was generated by the facility or unit at the time the power was directly delivered. This is applicable to imports from specified sources for which ARB has calculated an emission factor of zero, and for imports from California Renewable Portfolio Standard (RPS) eligible resources, excluding: (1) grandfathered contracts under the California RPS program that "count in full" under Public Utilities Code Section 399.16(d); (2) dynamically tagged power deliveries; (3) untagged power deliveries; and (4) nuclear power. Accordingly, a lesser of analysis is required pursuant to the following equation:*



$$\text{Sum of Lesser of MWh} = \sum_{sp} \min(MG_{sp}, TG_{sp})$$

Where:

$\sum_{sp}$  = Sum of the Hourly Minimum of  $MG_{sp}$  and  $TG_{sp}$  (MWh).

$MG_{sp}$  = metered facility or unit net generation (MWh).

$TG_{sp}$  = tagged or transmitted energy at the transmission or sub-transmission level imported to California (MWh).

### Analysis and Concerns

ARB is endeavoring to incorporate the “lesser of” calculation from the California Renewable Portfolio Standard (RPS) regulations into the MRR. However, the proposed amendment is inconsistent with the RPS regulations. Under the RPS regulations, the “lesser of” analysis applies only to Portfolio Content Category 1 renewable energy, which is electricity procured from an eligible renewable energy resource under a contract executed after June 2010, that is directly delivered from the generating facility to California, where the energy is not imported on a dynamic E-tag.

ARB’s proposed amendment would apply the “lesser of” calculation to electricity imported from an eligible renewable energy resource *as well as* other zero emission generating facilities, in order to subdivide hourly E-tags (delivered energy) into “specified” and “unspecified” by selecting the lesser of the hourly meter or E-tag data as specified and the remainder as unspecified. Applying the “lesser of” calculation to non-intermittent zero emission sources such as large hydro is not justified. Large hydro facilities produce only 100% specified energy, there is no “unspecified” substitute energy involved, so there is no reason to apply the “lesser of” calculation method.

It is unclear whether the first sentence *“For verification purposes, retain meter generation data from all specified sources to document that the power claimed by the reporting entity was generated by the facility or unit at the time the power was directly delivered”* applies to all specified sources of imported electricity, or only to zero emission and renewable energy sources. If retention of meter data is intended to apply to all specified sources, compliance may not be feasible. A reporting entity may not have the contractual right to hourly meter data under legacy power purchase agreements. In addition, meter data is not available for Asset Controlling Supplier power, a type of specified source. The consequence would be a non-conformance and a Qualified Positive verification statement, even if the rest of the report satisfies all the rule requirements.

Recommendations

The rule language needs to be clarified, to eliminate confusion over whether the requirement to “*retain meter generation data from all specified sources to document that the power claimed by the reporting entity was generated by the facility or unit at the time the power was directly delivered*” applies to all specified sources.

Also, to minimize additional reporting and verification burden, this requirement should be limited to only electricity imported from Portfolio Content Category 1 renewable generating resources for which the “lesser of” analysis is required under the RPS regulations.

Recommended Revisions to the Proposed Rule Language

To narrow applicability of this provision to only those sources where the “lesser of” analysis is required under the RPS regulation, LADWP recommends simplifying the rule language as follows:

95111(g)(1)(N) “For verification purposes, retain meter generation data ~~from all specified sources to document that the power claimed by the reporting entity was generated by the facility or unit, at the time the power was directly delivered. This is applicable to imports from specified sources for which ARB has calculated an emission factor of zero, and for imports from California Renewable Portfolio Standard (RPS) eligible resources, excluding: (1) grandfathered contracts under the California RPS program that “count in full”~~ and perform a lesser of analysis for imported renewable electricity, that is directly delivered from a California Renewable Portfolio Standard (RPS) eligible resource into a California balancing authority, that is categorized as Portfolio Content Category 1 under Public Utilities Code Section 399.16(d) or California Code of Regulations Section 3202(a)(2)(A); (2) dynamically tagged power deliveries; (3) untagged power deliveries; and (4) nuclear power. Accordingly, a lesser of analysis is required pursuant to the following equation:

$$\text{Sum of Lesser of MWh} = \Sigma \text{HM}_{sp} \cdot \min(\text{MG}_{sp}, \text{TG}_{sp})$$

Where:

$\Sigma \text{HM}_{sp}$  = Sum of the Hourly Minimum of  $\text{MG}_{sp}$  and  $\text{TG}_{sp}$  (MWh).

$\text{MG}_{sp}$  = metered facility or unit net generation (MWh).

$\text{TG}_{sp}$  = tagged or transmitted energy at the transmission or sub-transmission level imported to California (MWh).

LADWP appreciates the opportunity to provide these comments, and looks forward to working with ARB staff to address these concerns.

Clerk of the Board  
Page 11  
September 15, 2014

If you have any questions, please contact me at (213) 367-0403 or Ms. Cindy Parsons  
(213) 367-0636.

Sincerely,



Mark J. Sedlacek  
Director of Environmental Affairs

CP:

c: Ms. Rajinder Sahota, ARB  
Mr. Craig Segall, ARB  
Ms. Mary Jane Coombs, ARB  
Ms. Brienne Aguila, ARB  
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