Cap-and-Trade Issues - Details

1) RPS Adjustment

a. The RPS Adjustment should be retained to avoid imposing Cap-and-Trade compliance costs on RPS compliant Bucket 2 imported renewable electricity. Directly and indirectly delivered renewable electricity should be treated equally.

b. Concerns about potential double counting can be addressed by one of the following solutions:
    a. Section 95852(b)(3)(D) of the Cap-and-Trade regulation requires that if RECs were created, the REC serial numbers must be reported and verified in order to claim a compliance obligation for directly delivered electricity based on a source specific emission factor. However ARB is not enforcing this requirement. Instead, ARB's guidance is that directly delivered null power (renewable electricity without the RECs) be reported as specified with a zero emission factor even if the RECs are not reported (treated as a non-conformance). The RECs carry the environmental attributes of the renewable electricity; therefore imported null power without RECs should be reported as unspecified with the default emission factor. If the RECs are bundled with replacement electricity and imported into California, the replacement electricity should qualify for the RPS Adjustment even if the null power was also imported by another entity as unspecified power.
    b. If ARB retains the interpretation that null power without RECs be reported as a specified import with a zero emission factor, the importer of the null power should be required to communicate any such imports to the owner of the RECs to avoid double counting. In addition, the importer of the null power should compensate the owner of the RECs for the value of the lost RPS Adjustment credit.

c. Add credit for the 2% default transmission loss factor to the RPS Adjustment so that directly delivered and indirectly delivered renewable energy is treated equally under the Cap-and-Trade Program. Currently, the RPS Adjustment does not fully offset GHG emissions reported for the replacement electricity because it does not include credit for the default 2% transmission loss factor that is applied to all unspecified imports. The RPS Adjustment is an adjustment to the compliance obligation for indirectly delivered renewable energy, so it should include credit for the default 2% transmission loss factor to avoid imposing any Cap-and-Trade compliance obligation on RPS compliant Bucket 2 imported renewable energy.

d. The deadline to retire RECs for the RPS Adjustment should be clarified from "within 45 days of the reporting deadline" to "no later than 45 days following the reporting deadline".

e. Some electric utilities offer voluntary green power programs for customers who want to go above and beyond the renewable power content required by the RPS. However, indirectly delivered renewable electricity imported for voluntary green power program customers does not qualify for the RPS Adjustment, because the RECs are not designated as retired in the CEC's accounting system for the purpose of compliance with the California RPS program. Green power program customers should not be penalized with a Cap-and-Trade compliance cost for buying additional renewable electricity in excess of the minimum required by the RPS.

2) **Inconsistent treatment of directly delivered renewable energy with RECs, null power without RECs, and ACS Power; adverse impact on statewide GHG emissions inventory**

There is a fundamental inconsistency in the reported GHG emissions profile for directly delivered renewable power (with RECs), null power (without RECs), and Asset Controlling Supplier (ACS) power that must be rectified.

Directly Delivered	Renewable Energy	ACS Power
Electricity purchased with the environmental attributes	Specified EF = 0 MT CO2e/MWh	Specified EF = ACS (0.0192 MT CO2e/MWh for BPA or 0.0216 MT CO2e/MWh for Powerex)
Electricity purchased without the environmental attributes	Specified EF = 0 MT CO2e/MWh	Unspecified EF = default (0.428 MT CO2e/MWh)

- It is unfair that the importer of null power that paid less to buy the energy without the environmental attributes gets to claim the same zero emission factor as an entity that paid a premium to buy renewable power with the environmental attributes (RECs).

- Since the start of CARB's mandatory GHG reporting program, all directly delivered ACS power has been reported as a specified import and assigned a low-GHG emission factor in the statewide GHG emissions inventory. The 2013 amendments to the MRR changed the criteria such that now directly delivered ACS power "that was not acquired as specified power" must be reported as unspecified with the 2000% higher default emission factor, even though by definition "Asset controlling suppliers are considered specified sources."

- On page 108 of the FSOR for the 2011 amendments to the mandatory reporting regulation, ARB states "*ARB believes that rigorous GHG emissions reporting must be technology neutral, in that the focus is direct, source-based emissions associated with electricity that is directly delivered.... for the emissions profile of electricity generated and procured, RECs play no role in GHG accounting.*" If ARB believes the GHG emission attributes stay with the power rather than going with the paperwork (the REC), ACS power should be treated as low-GHG regardless of whether the purchaser paid a premium ($3 more per MWh) to the seller to put a "specified" label on the power. The specified label on the paperwork does not change the inherent emissions profile of power generated by an ACS's fleet of generating resources. Prior to 2014, all directly delivered ACS power was reported as specified regardless of how the power was purchased.

- Starting January 1, 2014, directly delivered ACS power "that was not acquired as specified power" must be reported as unspecified. As a result, LADWP had to report 500,595 MWh of directly delivered ACS power sourced from the BPA and BC Hydro systems as unspecified with the default GHG emission factor in its 2014 EPE report. The artificial increase in reported GHG emissions due to applying the default emission factor rather than the low-GHG ACS specific emission factor is 204,270 metric tons with an estimated Cap-and-Trade compliance cost of $2.5 million based on $12.50 per ton. This will negatively affect the statewide GHG emissions inventory and California's progress towards achieving its GHG emission reduction goal.

- Proposed Solution: undo the 2013 amendment to MRR section 95111(a)(5)(B) and go back to reporting all directly delivered ACS power as specified.

3) **Qualified Exports**

- The Qualified Exports provision in section 95852(b)(5) of the Cap-and-Trade regulation was intended to provide credit for exported electricity in lieu of a "border adjustment".

- Emissions for exported electricity should be deducted from covered emissions for the following reasons:
    - To reflect GHG emissions for electricity consumed in California (as required by AB 32 sections 38505 and 38530).
    - Pending legislation (AB1110) proposes to use GHG emissions data reported to ARB to add GHG emissions to the Power Content Label for retail sales within California.

- The Qualified Exports provision provides no credit for exported electricity because it requires the lowest emissions factor from any portion of the **imports or exports** within each hour be used to calculate the credit. Since most SCPPA member utilities import zero-emission energy from Hoover Dam and renewable energy to comply with California's RPS Program, the lowest emission factor in every hour is zero, which results in zero credit for exported electricity. As a result, California consumers end up paying the Cap-and-Trade compliance cost for exported electricity that is consumed in other states.

- Proposed Solution: The simple solution is to deduct emissions from the "Exports" tabs of the Electric Power Entity report from covered emissions. Alternately, if ARB feels it necessary to calculate Qualified Exports on an hourly basis, the default emission factor or the lowest emission factor from any export should be used instead of the lowest emission factor from any import or export.

4) **Emergency Power Imports**

- All Balancing Authorities are responsible for maintaining reliability of the grid and may need to import electricity on an emergency basis to maintain grid reliability. Therefore, the exclusion from reporting and Cap-and-Trade compliance obligation for electricity imported into California for emergency assistance should apply to all Balancing Authorities equally.

- Proposed Solution: in the definition of Imported Electricity, replace the term "Independent System Operator" with "Balancing Authority".

Recommended Rule Amendments

RPS Adjustment should include credit for the 2% default transmission loss factor

Cap and Trade Regulation section 95852(b)(4)(C)

The quantity of emissions included in the RPS adjustment is calculated pursuant to MRR as the product of the default emission factor for unspecified sources, the transmission loss correction factor for unspecified sources ~~pursuant to MRR~~, and the reported electricity generated (MWh) that meets the requirements of this section, 95852(b)(4).

Mandatory Reporting Regulation section 95111(b)(5)

$CO_2e_{RPS\ adjust}$ = *Sum of CO2 equivalent mass emissions adjustment is calculated using the following equation for electricity generated by each eligible renewable energy resource located outside the state of California and registered with ARB by the reporting entity pursuant to section 95111(g)(1), but not directly delivered as defined pursuant to section 95102(a). Electricity included in the RPS adjustment must meet the requirements pursuant to section 95852(b)(4) of the cap-and-trade regulation (MT of CO_2e).*

$CO_2e_{RPS_adjust} = MWh_{RPS}$ x TL x EF_{unsp} ($MTCO_2e$ / MWh)

Where:

MWh_{RPS} = *Sum of MWh generated by each eligible renewable energy resource located outside of the state of California, registered with ARB pursuant to section 95111(g)(1), and meeting requirements pursuant to section 95852(b)(4) of the cap-and-trade regulation.*

TL = *Transmission loss correction factor for unspecified sources of 1.02 as defined in section 95111(b)(1).*

EF_{unsp} = *Default emission factor for unspecified sources as defined in section 95111(b)(1) (MT CO2e/MWh)*

Clarify deadline to retire RECs for the RPS Adjustment

Cap and Trade Regulation section 95852(b)(4)(B)

The RECs associated with the electricity claimed for the RPS adjustment must be placed in the retirement subaccount of the entity subject to the California RPS, and party to the contract in 95852(b)(4)(A), in the accounting system established by the CEC pursuant to PUC 399.25, and designated as retired for the purpose of compliance with the California RPS program ~~within~~ no later than 45 days following ~~of~~ the reporting deadline specified in section 95111(g) of MRR for the year for which the RPS adjustment is claimed.

Recommended Rule Amendments

ACS Power should be counted as specified for programmatic consistency (ACS power has been counted as specified since 2000 in the statewide GHG emissions inventory, and since 2008 under the MRR. The 2013 amendments to the MRR changed previously specified ACS power into unspecified power, adversely affecting California's progress towards achieving its GHG emission reduction goals.)

Previous MRR language in effect since 2011 (report all imported power sourced from an ACS's system as specified with the ACS specific low-GHG emission factor regardless of whether the power was purchased direct from the seller or via a wholesale power market)

Mandatory Reporting Regulation section 95111(a)(5)

Imported Electricity Supplied by Asset-Controlling Suppliers. The reporting entity must separately report imported electricity supplied by asset-controlling suppliers recognized by ARB. The asset-controlling supplier must be identified on the physical path of NERC e-Tags as the PSE at the first point of receipt, regardless of whether the reporting entity and asset-controlling supplier are adjacent in the market path. The reporting entity must:
(A) Report the asset-controlling supplier standardized PSE acronym or code, full name, and the ARB identification number;
(B) Report delivered electricity as specified and not as unspecified;
(C) Report delivered electricity from asset-controlling suppliers as measured at the first point of delivery in the state of California; and,
(D) Report GHG emissions calculated pursuant to section 95111(b), including transmission losses.

2013 Amendment effective January 1, 2014 (report only ACS power where the source is specified at the time the transaction is executed, or power purchased directly from BPA, as specified. ACS power purchased via a wholesale power market, where the source and identity of the seller is not revealed until the transaction has been completed, must now be reported as unspecified)

Mandatory Reporting Regulation section 95111(a)(5)

Imported Electricity Supplied by Asset-Controlling Suppliers. The reporting entity must separately report imported electricity supplied by asset-controlling suppliers recognized by ARB. The reporting entity must:
(A) Report the asset-controlling supplier standardized PSE acronym or code, full name, and the ARB identification number;
(B) Report asset-controlling supplier power that was not acquired as specified power, as unspecified power;
(C) Report delivered electricity from asset-controlling suppliers as measured at the first point of delivery in the state of California; and,
(D) Report GHG emissions calculated pursuant to section 95111(b), including transmission losses.
(E) Tagging ACS Power. To claim power from an asset-controlling supplier, the asset-controlling supplier must be identified on the physical path of the NERC e-Tag as the PSE at the first point of receipt, or in the case of asset controlling suppliers that are exclusive marketers, as the PSE immediately following the associated generation owner.

Qualified Export Adjustment should provide adequate credit for exported electricity

Preferred Proposal 1 - eliminate hourly calculation, simply deduct emissions for exported electricity reported pursuant to MRR 95111(a)(6) from the compliance obligation

Cap and Trade Regulation section 95852(b)(5)

QE adjustment. An adjustment to the compliance obligation equivalent to the GHG emissions for exported electricity reported pursuant to MRR 95111(a)(6). ~~pursuant to the calculation in 95852(b)(1) may be made for exported and imported electricity during the same hour by the same PSE. Emissions included in the QE adjustment for qualified exports claimed by a first deliverer must meet the following requirements:~~

~~(A) During any hour in which an electricity importer claims qualified exports and corresponding imports, the maximum amount of QE adjustment for the hour shall not exceed the product of:~~

~~1. The lower of either the quantity of exports or imports (MWh) for the hour; multiplied by~~

~~2. The lowest emission factor of any portion of the qualified exports or corresponding imports for the hour.~~

Cap and Trade Regulation section 95802(a)(307)

(307) "Qualified Export" Adjustment is an adjustment to the compliance obligation equivalent to the GHG emissions for exported electricity reported pursuant to MRR 95111(a)(6).~~means electricity that is exported in the same hour as imported electricity and documented by NERC E-tags. When imports are not documented on NERC E-tags, because a facility or unit located outside the state of California has a first point of interconnection with a California balancing authority area, the reporting entity may demonstrate hourly electricity delivery consistent with the record keeping requirements of the California balancing authority area, including records of revenue quality meter data, invoices, or settlements data. Only electricity exported within the same hour and by the same importer as the imported electricity is a qualified export. It is not necessary for the imported and exported electricity (as defined in the MRR) to enter or leave California at the same intertie. Qualified exports shall not result in a negative compliance obligation for any hour.~~

Mandatory Reporting Regulation section 95111(a)(6)

Exported Electricity. The electric power entity must report exported electricity in MWh and associated GHG emissions in MT of CO2e for unspecified sources disaggregated by each final point of delivery outside the state of California, and for each specified source disaggregated by each final point of delivery outside the state of California, as well as the following information:

(A) Exported electricity as measured at the last point of delivery located in the state of California, if known. If unknown, report as measured at the final point of delivery outside California.

(B) Do not report estimated transmission losses.

(C) Report whether the final point of delivery is located in a linked jurisdiction published on the ARB Mandatory Reporting website.

(D) Report GHG emissions calculated pursuant to section 95111(b).
~~(E) Separately report qualified exports as defined in section 95102(a).~~

Alternate Proposal 2 – retain hourly calculation, use default emission factor or the lowest emission factor of any portion of the qualified exports to calculate the Qualified Exports Adjustment

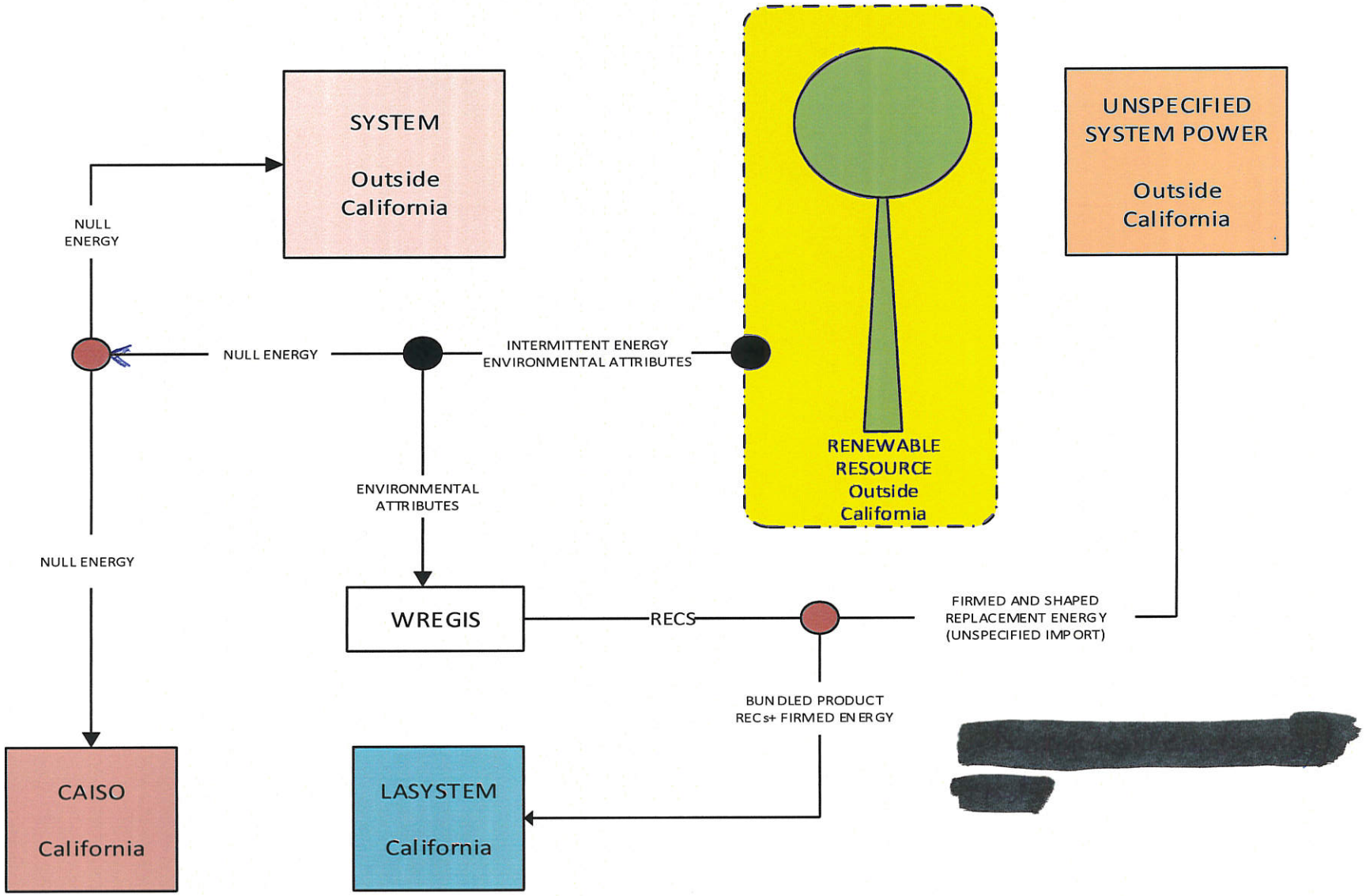
Cap and Trade Regulation section 95852(b)(5)

QE adjustment. An adjustment to the compliance obligation pursuant to the calculation in 95852(b)(1) may be made for exported and imported electricity during the same hour by the same PSE. Emissions included in the QE adjustment for qualified exports claimed by a first deliverer must meet the following requirements:
(A) During any hour in which an electricity importer claims qualified exports and corresponding imports, the maximum amount of QE adjustment for the hour shall not exceed the product of:
1. The lower of either the quantity of exports or imports (MWh) for the hour; multiplied by
2. The default emission factor for unspecified sources as defined in section 95111(b)(1) or the lowest emission factor of any portion of the qualified exports ~~or corresponding imports~~ for the hour. (MT CO2e/MWh)

Emergency Power Imports – exclusion should apply to all Balancing Authorities, not just the CAISO

Mandatory Reporting Regulation section 95102(a)(188)

"Imported Electricity" means electricity generated outside the state of California and delivered to serve load located inside the state of California. Imported electricity includes electricity delivered across balancing authority areas from a first point of receipt located outside the state of California, to the first point of delivery located inside the state of California, having a final point of delivery in California. Imported electricity includes electricity imported into California over a multi-jurisdictional retail provider's transmission and distribution system, or electricity imported into the state of California from a facility or unit physically located outside the state of California with the first point of interconnection into a California balancing authority's transmission and distribution system. Imported electricity includes electricity that is a result of cogeneration located outside the state of California. Imported electricity does not include electricity wheeled through California, defined pursuant to MRR section 95102(a). Imported electricity does not include electricity imported into the CAISO balancing authority area to serve retail customers that are located within the CAISO balancing authority area, but outside the state of California. Imported Electricity does not include electricity imported into California by ~~an Independent System Operator~~ a Balancing Authority to obtain or provide emergency assistance under applicable emergency preparedness and operations reliability standards of the North American Electric Reliability Corporation or Western Electricity Coordinating Council. Imported electricity shall include Energy Imbalance Market (EIM) dispatches designated by the CAISO's optimization model and reported by the CAISO to EIM Participating Resource Scheduling Coordinators as electricity imported to serve retail customers load that is located within the State of California.


SYSTEM
Outside
California
NULL
ENERGY
NULL ENERGY
INTERMITTENT ENERGY
ENVIRONMENTAL ATTRIBUTES
RENEWABLE
RESOURCE
Outside
California
UNSPECIFIED
SYSTEM POWER
Outside
California
ENVIRONMENTAL
ATTRIBUTES
NULL ENERGY
WREGIS
RECS
FIRMED AND SHAPED
REPLACEMENT ENERGY
(UNSPECIFIED IMPORT)
BUNDLED PRODUCT
RECs+ FIRMED ENERGY
CAISO
California
LASYSTEM
California

LADWP Electric Transportation Program

FY 2015-2020

DRAFT—For discussion purposes only

5 Year Goal: The equivalent of 137,000 Electric Vehicles in LA.

Strategy:

1. Increase EV adoption to 15% of vehicle purchases.
2. Count Public and Workplace Chargers as EV equivalents.
3. Consider non-light duty as EV equivalents (i.e. Medium & Heavy Duty)

Education and Outreach:

Goal: 15% of all new vehicle purchases in LA are plug-in by 2020.

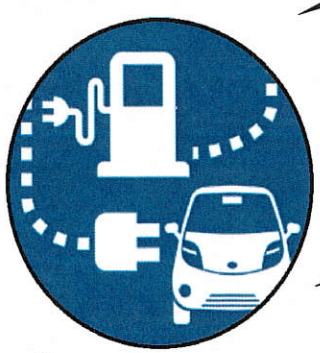
60K registered EVs in LA,

Programs: Drive, Social , HOA, etc.

LADWP & LA City Fleet:

LADWP 100%, City 50% New Cars

1600 vehicles.—No Program Cost



Residential Charging:

Charge-Up LA! Rebate: $500

Phase II: Smart Charger Rate

Med. & Heavy Duty Fleet:

Includes POLA, LAWA, Forklift, Rail, Busses. Incentive toward charging infrastructure (Proportional to Commercial). Goals: TBD

Commercial Charging:

Charge-Up LA! ,Workplace ,Public EVSE $4000 rebates, Phase II: Direct Install & Green Building Ordinance. Green Bldg Ordinance.

City EV Chargers:

1000 Curbside/Parking Lot Public
1500 City Fleet Chargers,
25 City DC Fast Chargers
500 City Workplace Chargers
3025 Total. Chargers

Program Results:

- LA's visible support for EV Technology through 10,000 City and Private Commercial Chargers for Pubic and Workplace and 1600 City Plug-in vehicles.
- Supports Residential Charging. (5000 chargers)
- Utility Goals including GHG emission reductions, integration of renewables, better utilization of assets, and customer savings.

11/23/2015

Treatment of Imported Electricity sourced from Asset Controlling Suppliers (BPA and Powerex) in Statewide Greenhouse Gas Emissions Inventory

Source	1990 Baseline (= 2020 Limit)	2000 thru 2010	2011-2012	2013	2014
BPA Power BPA Slice Powerex (BC Hydro)	Not a specified source (included in Unspecified Imports from Pacific Northwest). CO2 emission factor: BPA: g CO2/kWh = 214	Specified Import Primarily hydropower CO2 emission factor: BPA: g CO2/kWh = 0	Specified Import Primarily hydropower CO2 emission factor: BPA: g CO2/kWh = 85.4	Specified Import Primarily hydropower CO2 emission factor: BPA: g CO2/kWh = 24.9 Powerex: g CO2/kWh = 29.3	???
Unspecified Imports (Pacific Northwest)	CO2 emission factor = 214 of imported electricity	CO2 emission factor ranges from 196 to 427 g CO2 per kWh of imported electricity	CO2 emission factor = 427 g CO2 per kWh of imported electricity	CO2 emission factor = 427 g CO2 per kWh of imported electricity	CO2 emission factor = 427 g CO2 per kWh of imported electricity
Unspecified Imports (Pacific Southwest)	CO2 emission factor = 761 g CO2 per kWh of imported electricity	CO2 emission factor ranges from 841 to 427 g CO2 per kWh of imported electricity	CO2 emission factor = 427 g CO2 per kWh of imported electricity	CO2 emission factor = 427 g CO2 per kWh of imported electricity	CO2 emission factor = 427 g CO2 per kWh of imported electricity

Source: Documentation of California's Greenhouse Gas Inventory 8th Edition - Last updated on 04-24-2015

Treatment of Imported Electricity sourced from Asset Controlling Suppliers (BPA and Powerex) under ARB Mandatory Reporting Regulation

Source	2008 - 2010	2011 - 2012	2013	2014
BPA Power BPA Slice Powerex (BC Hydro)	Report 100% of electricity supplied by BPA as a Specified Import (MWh only)	Report 100% of electricity sourced from BPA system as specified. CO2 Emission Factor: BPA: MTCO2e/MWh = 0.0856	Report 100% of imported electricity sourced from BPA or BC Hydro system as specified. CO2 Emission Factor: BPA: MTCO2e/MWh = 0.0249 BCHydro: MTCO2e/MWh = 0.0293	Report imported electricity sourced from BPA or BC Hydro system with specified source contract documentation as specified. CO2 Emission Factor: BPA: MTCO2e/MWh = 0.0192 BCHydro: MTCO2e/MWh = 0.0216 Report imported electricity sourced from BPA or BC Hydro system without specified source contract documentation as unspecified with default emission factor (0.428 MT CO2e per MWh).
Unspecified Imports (Pacific Northwest)	Report by counterparty name (MWh only)	Report by first point of receipt with default emission factor for unspecified power (0.428 MT CO2e per MWh)	Report by first point of receipt with default emission factor for unspecified power (0.428 MT CO2e per MWh)	Report by first point of receipt with default emission factor for unspecified power (0.428 MT CO2e per MWh)
Unspecified Imports (Pacific Southwest)	Report by counterparty name (MWh only)	Report by first point of receipt with default emission factor for unspecified power (0.428 MT CO2e per MWh)	Report by first point of receipt with default emission factor for unspecified power (0.428 MT CO2e per MWh)	Report by first point of receipt with default emission factor for unspecified power (0.428 MT CO2e per MWh)