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Course 2.1: § 95111

#### **ELECTRIC POWER ENTITIES**

2.1.CS: Case Studies (w/o solutions)



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#### Course 2.1 Modules

○ 2.1.1: Introduction – EPE Entities & Structure

o 2.1.2: Imports, Exports, EIM, RPS, & Wheels

o 2.1.Ex: Exercises

○ 2.1.3: EPE Reporting Workbooks

o 2.1.4: Verifier Requirements Overview, & e-Tags

○ 2.1.CS: Case Studies

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## Covered Emissions - Case Study 1 (1 of 3)

- o A retail provider, P2P, executes the following transactions under contract:
  - A. 125,000 MWh from a eligible renewable energy wind power facility in Washington is sold by P2P and sunk into the local (WA) balancing authority area
  - B. 2,300 MWh from a eligible renewable energy solar photovoltaic facility in Nevada is brought into the CAISO day ahead market with P2P as the PSE on the physical transmission path of the e-Tag that crosses into and sinks in CA.
  - C. 40,000 MWh is imported from a eligible renewable biomass burning facility in Oregon. P2P is the PSE on the e-Tag on the physical transmission path that crosses into CA and sinks in CA. The CARB specified EF is 1 MT CO<sub>2</sub>e/MWh; 20% non-exempt CO<sub>2</sub>e\*
  - D. 162,000 MWh of bulk system power is purchased and imported by P2P into CA to meet its load
- Calculate the emissions associated with each of these electricity purchases to find the total covered emissions.
- 2. Discuss what happens if RECs are not retired for renewable transactions.



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#### Case Study 1 - Solution (2 of 3)

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#### Case Study 1 - Solution (3 of 3)

$$CO_2e_{\mathit{cov}\,\mathit{ered}} = CO_2e_{\mathit{inspecified}} + (CO_2e_{\mathit{specified}} - CO_2e_{\mathit{specified-not}\,\mathit{cov}\,\mathit{ered}}) - CO_2e_{\mathit{RPS}\_\mathit{adjustment}} - CO_2e_{\mathit{QE}\_\mathit{adjustment}} - CO_2e_{\mathit{inshed}}$$

CALIFORNIA AIR RESOURCES BOARD Covered Emissions – Case Study 2 (1 of 3)

- Calculate the total covered CO<sub>2</sub>e emissions for a retail provider with the following types of transactions under contract:
  - 500,000 MWh imported electricity from unspecified sources, aggregated at various transmission source points
  - 2. 150,000 MWh imported electricity from a specified facility with EF of 1 MT CO<sub>2</sub>e/MWh
  - 25,000 MWh purchased from an eligible renewable energy resource outside of CA. The power does not meet the MRR definition of directly delivered electricity. 15,000 RECs are retired.
  - 4. 15,000 MWh geothermal directly delivered from Nevada with EF of 0.073 MT CO2e/MWh.
  - 5. 20,000 MWh electricity from verified biomass fuels directly delivered from Oregon. Emission factor of 1.376 MT CO $_2$ e/MWh, 17% non-exempt\*
  - 250,000 MWh electricity purchased from PVWest (AZ) and imported to CA. E-Tag shows transmission source and sink points on e-Tag both located inside CA

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## Case Study 2 – Solution (2 of 3)



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## Case Study 2 - Solution (3 of 3)

 $CO_2e_{\mathit{cov}\,\mathit{ered}} = CO_2e_{\mathit{inspecified}} + (CO_2e_{\mathit{specified}} - CO_2e_{\mathit{specified-not}\,\mathit{cov}\,\mathit{ered}}) - CO_2e_{\mathit{RPS}\_\mathit{adjustment}} - CO_2e_{\mathit{QE}\_\mathit{adjustment}} - CO_2e_{\mathit{inshed}}$ 

| Emission Type                | Transaction(s) | Covered Calculation | Subtotal |
|------------------------------|----------------|---------------------|----------|
| Unspecified Emissions        |                |                     |          |
| Specified Emissions          |                |                     |          |
| Specified Emissions (Exempt) |                |                     |          |
| RPS Adjustment               |                |                     |          |
| Covered Emissions            |                |                     |          |

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# Case Study 3 - Solution (1 of 3)

- Please attempt Case Study 3 in Handout 2.1.2. A blank word version has been provided in your Course 2.1 handouts packet.
- o A PDF version with answers has also been provided for your review after.

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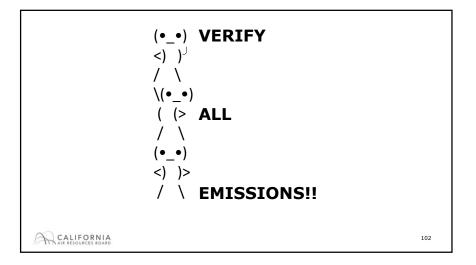
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Case Study 3 – Solution (2 of 3)

Case Study 3 – Solution (3 of 3)

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# Transactions Specialist Courses

#### COMPLETE

- o Course 2.1: § 95111
  - Electric Power Entities (EPE)

#### NEXT

- o Course 2.2: § 95121
  - o Suppliers of Transportation Fuels
    - o Petroleum Products & Biofuels
- o Course 2.3: § 95122
  - o Suppliers of Natural Gas, Natural Gas Liquids & Liquefied Petroleum Gas
- o Course 2.4: § 95123
  - o Suppliers of Carbon Dioxide



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