

Power/Utility Sector

Reporting Requirements for

the

California Climate Action Registry

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Goals of the Registry



- Help companies and organizations establish GHG emissions inventories and baselines against which any future GHG emission reduction requirements may be applied.
- Encourage voluntary actions to:
 - Increase energy efficiency
 - Decrease GHG emissions

Selected Registry Members: Electricity



IOUs

PacifiCorp
PG&E Corporation*
San Diego Gas and Electric
Southern California Edison

Independent Power Producers

AES
Calpine Corporation
Mirant
NRG Energy
Reliant Energy

Power Authority

Northern CA Power Agency
Platte River Power Authority

Municipal Utilities

Anaheim Public Utilities
Austin (Texas) Energy
Burbank Water and Power
City of Palo Alto Utilities
L.A. Dept. of Water & Power*
Riverside Public Utilities
Sacramento Municipal Utility
District*

***Charter Member**

107 members total

200 million tons registered =
annual emissions of Turkey

Annual Three Step Process


1. **Calculate** GHG emissions according to the Registry protocols
 - CO₂ first 3 years, then all 6 Kyoto gases (CH₄, N₂O, HFCs, PFCs, SF₆)
 - Direct stationary, mobile, process and fugitive emissions
 - Indirect emissions from energy purchases
 - January – December time period
2. **Report** GHG emissions data through CARROT
3. **Certify** emissions inventory results using state- and Registry-approved 3rd party certifiers
 - Certified data is publicly reported through www.climateregistry.org

Registry Power-Sector Reporting Tools



- General Reporting & Certification Protocols (GRP + GCP)
 - General guidance for all reporters

- Power/Utility Reporting & Certification Protocols (PUP + PUCP)
 - Industry-specific guidance for power generators and electric utilities
 - Define indirect emissions → T&D losses from purchases
 - Establish metrics
 - Improve comparability within industry
 - Natural gas T&D guidance forthcoming

-  CARROT – Climate Action Registry Reporting Online Tool

CARROT



Climate Action Registry Reporting Online Tool

- REPORT: Annual inventory must be reported through CARROT
 - Reporters manage their entity's users:
 - Administrator – all access
 - User – one or more facilities
 - Reviewer – read-only access
 - Certifier – read-only access, submit electronic opinion
 - CALCULATE: Many calculations can be done in CARROT
 - CERTIFY:
 - Standardizes/lowers certification cost
 - Certifiers view all data once authorized by Participant (after data submitted for certification)
 - Public Users access certified emission reports
- www.climateregistry.org

Power/Utility Protocol Development Process



- PIER funding
- Protocol development process
 - Power/Utilities Workgroup
 - IOUs, munis, merchant generators, regulators, NGOs, technical experts
 - PacifiCorp participated
 - Expert review process
 - TAC review & consideration
 - Public hearing & Agency review
 - Board consideration
- Final Protocol adopted April 2005

Required Information (1)



- Direct Emissions from:
 - Mobile Sources
 - Stationary Combustion
 - Fossil fuels
 - Bio & non-emitting fuels
 - Process Emissions
 - CO₂ from scrubbing coal
 - Fugitive Emissions
 - Refrigerants
 - SF₆

Direct Emissions



Direct Emissions from Owned Facilities	CO ₂ e	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	Unit
Mobile Combustion	0.00	0.00	0.00	0.00	0.00	0.00	n.a.	metric tons
Total Stationary Combustion	9,809,296.00	9,809,296.00	0.00	0.00	n.a.	n.a.	n.a.	metric tons
from Electric Power Generation, Transmission & Distribution Activities	9,809,296.00	9,809,296.00	0.00	0.00	n.a.	n.a.	n.a.	metric tons
from Natural Gas-Related Activities	0.00	0.00	0.00	0.00	n.a.	n.a.	n.a.	metric tons
from Other On-Site Combustion	0.00	0.00	0.00	0.00	n.a.	n.a.	n.a.	metric tons
Process Emissions	0.00	0.00	0.00	0.00	0.00	0.00	n.a.	metric tons
Fugitive Emissions	406,897.50	0.00	0.00	0.00	0.00	0.00	17.03	metric tons
TOTAL DIRECT EMISSIONS	10,216,193.50	9,809,296.00	0.00	0.00	0.00	0.00	17.03	metric tons
% of Net Generation Delivered to CA	100							
% of Net Generation Delivered Outside of CA	0							
Total Direct Emissions from Deliveries to CA	10,216,193.50	0.00	0.00	0.00	0.00	0.00	0.00	metric tons
Total Direct Emissions from Deliveries outside of CA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	metric tons

Source: Southern California Edison, actual data for Emissions Year 2004

Required Information (2)

- Indirect Emissions from:
 - Electricity purchased and consumed:
 1. Outside service territory
 2. T&D Losses from:
 - Purchased power
 - Direct access
 - Wheeled power (excluding direct access)
 - Purchased Co-Generation, Imported Steam, and District Heating and Cooling

Indirect Emissions from Owned Facilities	CO ₂	Unit
Electricity Purchased and Consumed	0.00	metric tons
Steam Purchased and Consumed	0.00	metric tons
Heat Purchased and Consumed	0.00	metric tons
Cooling Purchased and Consumed	0.00	metric tons
Total Transmission and Distribution Losses	1,539,798.00	metric tons
from Purchased Power	1,074,556.00	metric tons
from Wheeled Power (excluding Direct Access)	141,196.00	metric tons
from Direct Access	324,046.00	metric tons
TOTAL INDIRECT EMISSIONS	1,539,798.00	metric tons

Required Information (3)



- Entity Information
 - Owned & Purchased Generation (MWh & CO2)

POWER/ELECTRIC UTILITY ENTITY INFORMATION	Amount	Unit	CO ₂	Unit
Owned Generation Total (Net)	17,451,139.41	MWh	12,367,960.25	metric tons
Fossil Generation (Net)	14,895,405.06	MWh	12,367,960.25	metric tons
Renewable Generation (Net)	445,540.35	MWh	0.00	metric tons
Zero Emission Generation (Net)	2,110,194.00	MWh	0.00	metric tons
Steam Generation (Net)	0.00	MWh	0.00	metric tons
Purchased Generation Total (Net)	8,976,563.00	MWh	3,992,837.11	metric tons
Purchased Fossil Generation (Net)	2,624,595.00	MWh	2,330,901.56	metric tons
Purchased Renewable Generation (Net)	40,000.00	MWh	0.00	metric tons
Purchased Zero Emission Generation (Net)	1,909,030.00	MWh	0.00	metric tons
Purchased Cogeneration (Net)	240,953.00	MWh	143,073.44	metric tons
Purchased Wholesale Power (Net)	4,161,985.00	MWh	1,518,862.11	metric tons
TOTAL FROM ALL GENERATION SOURCES	26,427,702.41	MWh	16,360,797.36	metric tons

Calculating Entity Information

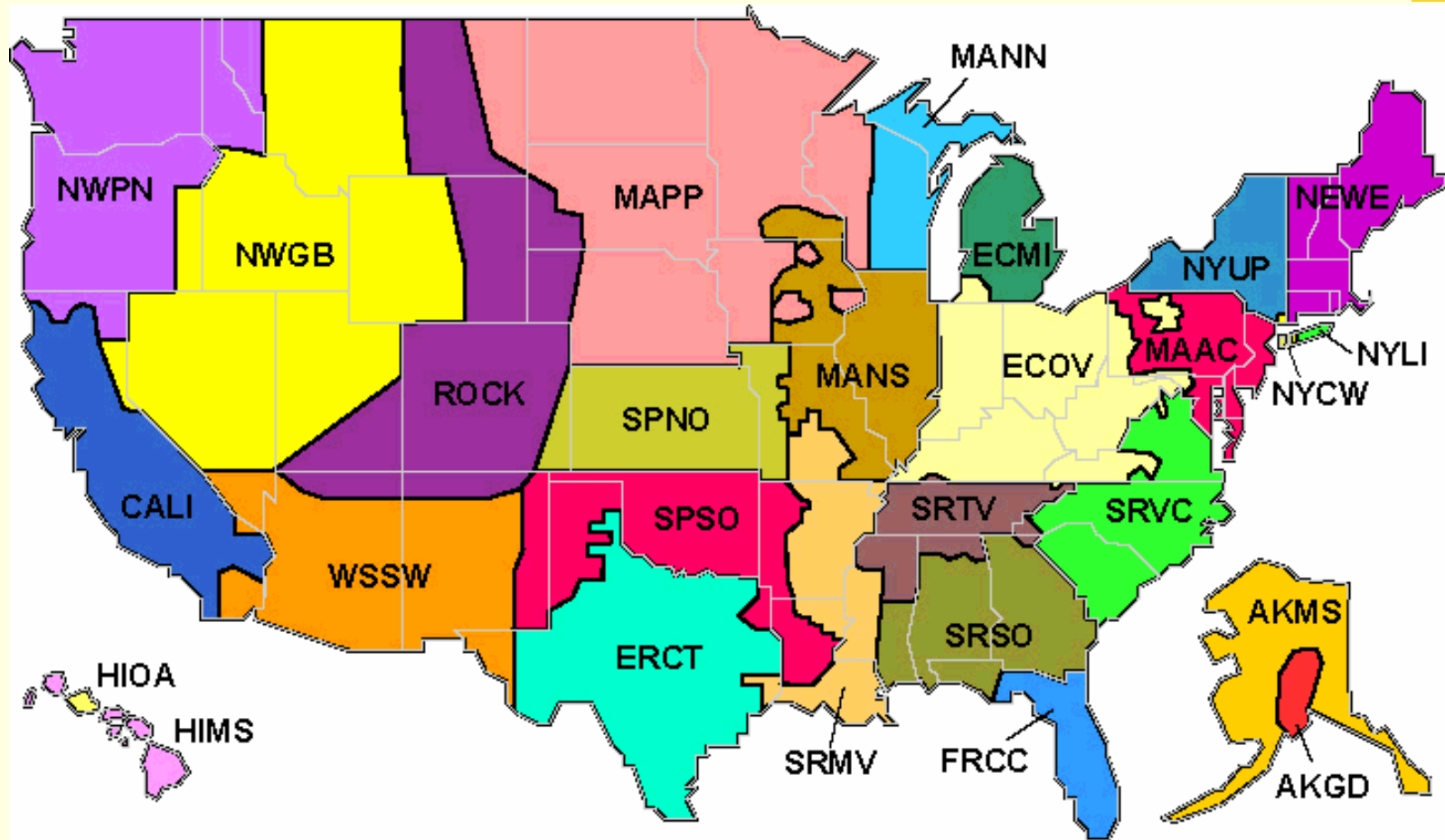


1. Facility-specific purchases
 - eGRID facility emission factor

2. Company-specific purchases
 - eGRID company emission factor

3. Market purchases
 - eGRID sub-region average for California:
804.54 lbs CO₂/MWh (WECC-CALI)

eGRID subregions



Efficiency Metrics



- Three required metrics
 1. lbs CO₂/MWh electricity **delivered** to end-user
 2. lbs CO₂/MWh electricity net **generation**
 3. lbs CO₂/MWh net **fossil generation**

EMISSIONS EFFICIENCY METRICS		Ratio
Electricity Deliveries:	678.88	lbs CO ₂ /MWh delivered (<i>includes CO₂ from owned and purchased generation</i>)
Net Generation:	719.21	lbs CO ₂ /MWh net generation (<i>includes CO₂ from natural gas, coal, nuclear, large</i>)
Net Fossil Generation:	1,998.79	lbs CO ₂ /MWh net fossil generation (<i>includes CO₂ from natural gas and coal</i>)

- Includes CO₂ from stationary combustion only
- Does not include *de minimis* emissions
- Does not include CO₂ from bio fuels

Metrics – Selected Reporters



	<u>Deliveries</u>	<u>Generation</u>	<u>Fossil Generation</u>
Calpine	n.a.	650	905
LADWP	1365	1562	1831
PacifiCorp	1811	2020	2172
SCE	679	719	1999
SDG&E	614	n.a.	n.a.
SMUD	769	639	982

All units: (lbs CO₂/MWh)

Deadlines



- Reporting: August 31 (Data year + 1)
- Certification: December 31 (Data year + 1)

Example: 2005 Emissions

Reported in CARROT by **Aug. 31, 2006**

Certified by **Dec. 31, 2006**

- **Other Reporting Rules:**
 - Report for each year of participation (no breaks in reporting)
 - Can report from present back to 1990
 - Can set a baseline year

Certification Process



- **Participants:** calculate and report; select certifier
- **Certifiers:** conduct certification activities
 - COI determination
 - CEC notification
 - Prepare report for participant; opinion for Registry
- **Registry:** review, accept and store data
- **State:** oversee certification activities (CEC), and consider data

Questions?



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