

Water Energy Nexus Workshop June 26, 2018

Sarah Palmer report

Webinar 10:30am - 2pm

The Climate Registry (TCR)

Video addressing water energy nexus from TCR website:

<https://youtu.be/4zc5ArP0Gm0>

(this was not part of the webinar but I pulled it up for info as sound was bad in the beginning)

20% of California energy in water

WEG guidance (Water Energy GHG)

TCR is looking to set up a work group and an Advisory Group

To do Gap Analysis, and Draft Protocols for GHG emissions reporting.

Program launch is to be May 2019

TCR will modify program to fit agencies.

A Question was asked on how Cal EpA fit into this. Answer: "We're working on this."

Following are some of the key slides from the webinar.

Program Development Timeline

August 2018: Conduct gap analysis, develop key issue areas for working group, draft protocols

October 11, 2018: Stakeholder Workshop #2 (East Bay, Marin, Contra Costa, Alameda Counties)

April 2019: Stakeholder Workshop #3 (Central Valley)

August - October 2018: Initial Working Group & Advisory Committee calls and feedback

January - February 2019: Public comment period on draft protocols and guidance

May 2019: Program Launch

Get Involved

Interested in being part of the conversation?

Join our listserv:
policy@theclimateregistry.org

Complete our survey on the Water-Energy Nexus Registry webpage to apply to join the working group.

Key considerations: Existing guidance

Goals for the gap analysis:

1. Customize TCR's existing emissions guidance for the water sector in California.
2. Identify best practices in water data measurement, tracking, reporting, and verification.
3. Ensure that reported data enables recognition and incentives for GHG reductions.

Key considerations: Overview of key concepts

- Activity data measurement
- Benchmarking
- Measuring reductions
- Reporting
- Public disclosure
- Verification standards

Key considerations: Activity data measurement

Measurements	Relevant Institutions	Relevant Protocols and Data
Annual entity-wide carbon footprints from operations	<ul style="list-style-type: none"> TCR CARB US EPA ICLEI 	<ul style="list-style-type: none"> GRP CARB guidance US EPA guidance
Annual water data	<ul style="list-style-type: none"> DWR SWRCB CDP WWF 	<ul style="list-style-type: none"> Urban Water Management Plan guidebook Conservation reporting & SB7x7 Water loss audits Sustainable GW mgmt. Water Footprinting/accounting
Methods for GHG intensity of delivered water (e.g., metric tons CO₂/AF)	<ul style="list-style-type: none"> TCR DWR CPUC UC Davis 	<ul style="list-style-type: none"> WEG Guidance, EPS Protocol UWMP Guidebook - Appendix G CPUC energy intensity defaults and cost effectiveness calculator UC Davis CWEE methods

Key considerations: Baselines and reductions

Goals for benchmarking:

- Entity-specific annual emissions
 - Enable baselining with respect for annual variations in water availability
 - Data tracking at level that is granular enough to be helpful for water agency decision-making
- Project-specific baselines
 - Enable measurement of savings from conservation programs

Goals for demonstrating reductions:

- Entity-specific year over year trends
- Credible project-specific savings
- Recognition and incentives

Key considerations: Overview of key concepts

- Activity data measurement
- Benchmarking
- Measuring reductions
- Reporting
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Key considerations: What constitutes a submission?

Goals for reporting

- Data submissions that are comprehensive, credible, and helpful for analysis of statewide trends

Example:

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    graph LR
      Entity --> GW[GW Extraction Wells]
      Entity --> Facility
      GW --> Extraction[Extraction well]
      GW --> Distribution[Distribution pump]
      Facility --> Source
    
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Steps to the Reporting Process

- 1 Identify your reporting boundaries
- 2 Identify your facilities and sources
- 3 Organize and collect data on emission sources
- 4 Quantify and report emissions

Greenhouse Gases

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃)

1 Identify your reporting boundaries

Determine which operations, facilities, and sources should be included

Things to consider:

- Geographic region?
- All or some of your facilities?
- Which greenhouse gases?

2 Identify your facilities and sources

What is a "facility"?

Typically a single physical premise

- E.g. office building, water treatment plant, pump station

OR, can be aggregation of smaller or distributed emissions sources

- E.g. vehicle fleet, water distribution system

2 Identify your facilities and sources

An entity will usually have multiple facilities. A facility can have multiple sources associated with it.

Southern California Water Agency (Entity)
Headquarters Building- LA County (Facility)
 Electricity for lighting, computers, etc. purchased from SCE
 Boilers – natural gas purchased from SoCal Gas
 Refrigerators – refrigerant leakage
 Forklifts – propane

Sources

3 Organize and collect data on emission sources

Scope 1, 2, and 3

Graphic via Greenhouse Gas Protocol - <http://ghgprotocol.org>

3 Organize and collect data on emission sources

Where to find data?

Electricity or Natural Gas

- Utility bills
- Accounting department
- Utility account managers

Fuel (generators, pump equipment, etc.)

- Bulk fuel purchase records

Vehicles

- Fuel usage logs and mileage records
- For large organizations, may be tracked in fleet management system (e.g. Voyager)

4 Quantify and report emissions

Once you have the data, how do you calculate emissions?

Activity Data: quantity of fuel or material that, when used, emits GHGs
 e.g. gallons of gasoline, SCF of natural gas, Mwh of electricity

Emission Factor: converts activity data into amount of GHGs
 e.g. 9.13 kg CO2 emitted per one gallon of motor gasoline combusted

GHGs

4 Quantify and report emissions

Market-based Method

- Reflects the GHG emissions associated with choices you make about energy supply or purchase.
- Allows you to claim the specific emission rate associated with energy purchases
- Emission factors specific to renewable energy purchases: RECs, PPAs, etc.
- Utility-specific emission factors

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4 Quantify and report emissions

Market-based Method

If your organization purchases green power with a specified emissions rate, your organization can generally claim this in the market-based method

- E.G. utility green power program, community choice aggregator power product