LOAD-BASED ACCOUNTING FOR CLEAN ENERGY IN THE WEST

HOW THOUGHTFUL AND CONSISTENT STATE PROGRAM AND MARKET DESIGN CAN SUPPORT REGIONAL MARKET EXPANSION AND DECARBONIZATION

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High-level Summary

Load-based accounting = allocation of generation to load.

Market efficiency and state goals can be compatible.

Program design elements can affect market participation and efficiencies.

Inconsistent allocation disrupts market expansion and efficiency. Use RECs.

Disregarding or decoupling RECs from GHG attribution threatens load-based programs and would not maximize regional benefits.

The “East Coast Model” offers a solution but would require changes to regulation and law in different states.

Other opportunities for alignment exist, including all-generation certificate tracking.

Chapter 01.

CONTEXT

Why Allocation is Needed

Differences Between State and Market Objectives

- States and customers have interests in addition to efficient operation of power markets.
- The interests and objectives of states should be balanced with market interests.

What is Allocation?

Difference Between Load-based and Source-based Accounting

Source-based

- Measuring what is produced or generated at the source.
- No tracking instrument required.
- Point of regulation is often the generator.
- E.g. cap-and-trade (for in-boundary emissions)

Load-based (Allocation)

- Measuring what is consumed, delivered, sold, serving load, serving customers, retail claims.
- Tracking instrument required.
- Point of regulation is often the LSE.
- E.g. PSD, RPS, Clean Energy Standards, CETA

RECs

Transmission systems (contract path or physical flow) do not determine delivery of clean power or emissions to load.

RECs are the common instrument for allocation of renewable energy.

- Used in state compliance, voluntary programs, and corporate green power procurement.
- Property rights to the fully aggregated non-power generation attributes of renewable generation, including emissions, which are not physically delivered.
- Prevent double counting.
- “Bundled/Unbundled” procurement has no bearing on the accounting.
- Create access and enable trading.

Allocating Renewables vs. Emissions

Emissions allocated to load should match the fuel type allocated to load. Fuel type and emissions should be coupled.

- Accounting should be consistent among load-based programs, whether they account for emissions or fuel type.
- A focus on either renewable energy or emissions does not determine the type of accounting. GHG accounting programs are not automatically source-based.
- Load-based accounting for either fuel type or emissions affects RECs.
- Fuel type and emissions should not be delivered separately (disaggregated).

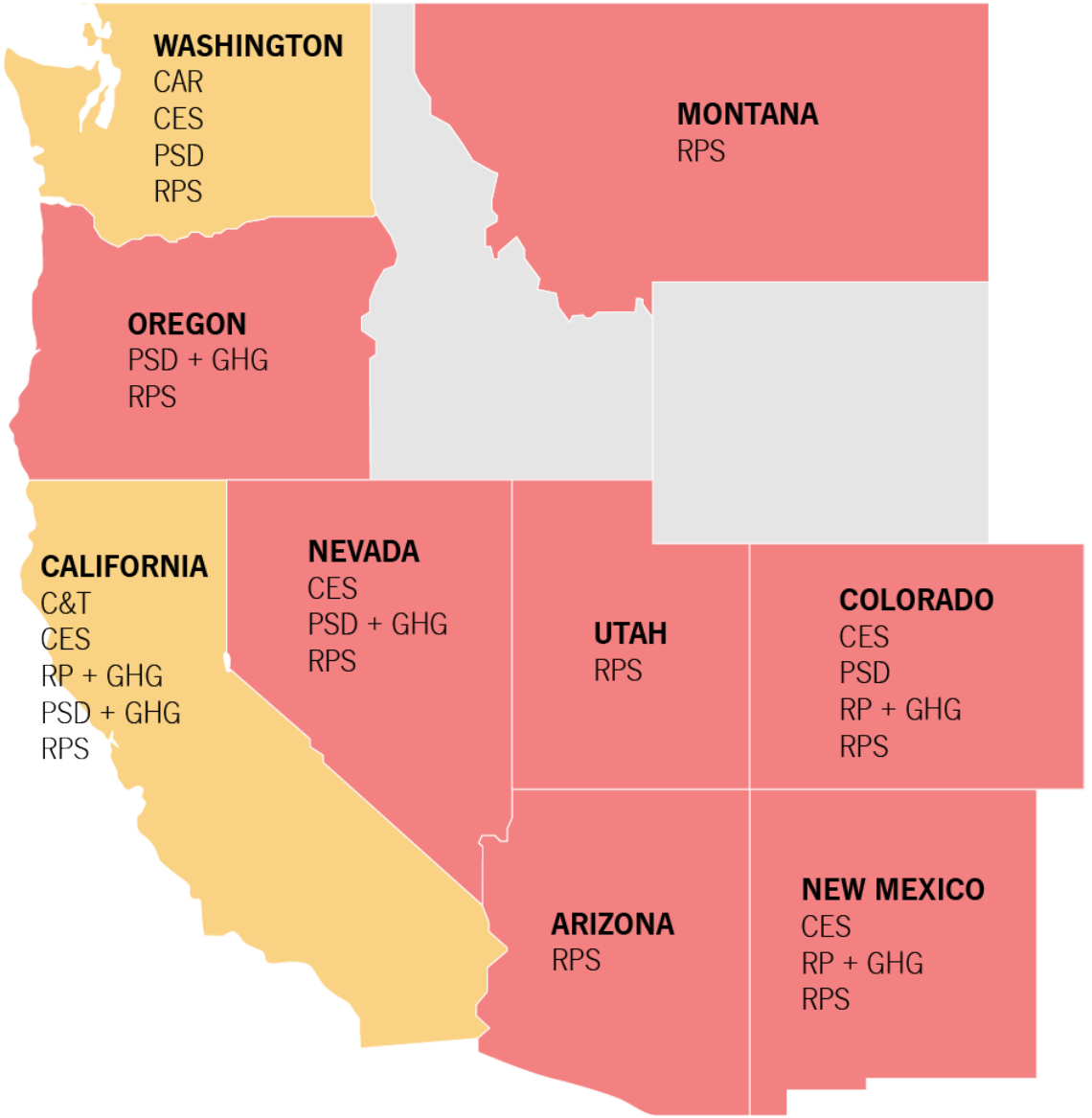
Chapter 02.

THE DANGERS OF INCONSISTENT ALLOCATION: EXAMPLES & LESSONS FROM CALIFORNIA

WESTERN U.S. POLICY LANDSCAPE

Load-based policies

Both load-based and source-based policies



POLICIES

C&T	Cap and Trade
CAR	Washington Clean Air Rule
CES	Clean Energy Standard or Goal
RP + GHG	Resource Planning with GHG Targets
PSD	Power Source Disclosure
PSD + GHG	Power Source Disclosure + GHG Emissions Disclosure
RPS	Renewable Portfolio Standard

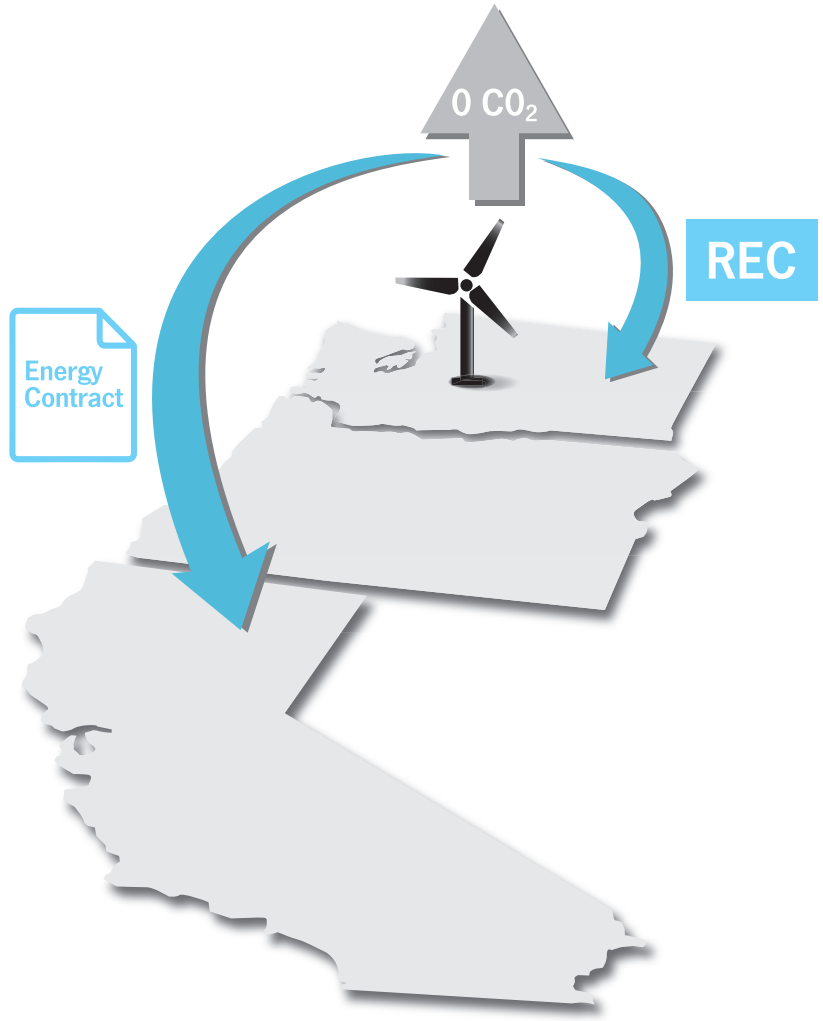
California Load-based Programs

Program	Source-based or Load-based	Renewable Energy or Emissions	Regulated Entity	Historical or Planning	Lead Agency
C&T and MRR	Both	Emissions	Generator, Importer	Historical	CARB
RPS	Load-based	Renewable Energy	Retail Seller	Historical	CPUC & CEC
PSD	Load-based	Both	Retail Supplier	Historical	CEC
IRP	Load-based	Both	LSE	Planning	CPUC & CEC

Electricity Imports under Cap-and-trade

Accounting for attributes delivered to load in California affects load-based policies and RECs.

- Imported electricity: “electricity generated outside the state of California and delivered to serve load located inside the state of California.”
- GHG attribution in EIM, determines if a resource is serving load in the “California GHG compliance area.”
- Affects allocation of direct emissions.
- Does not require REC retirement in California, raises double counting concerns.
- Has created inconsistency between PSD and RPS.



Inconsistency between PSD and RPS

Consistency with MRR for retail GHG accounting in PSD means inconsistency with RPS.

- MRR used as the basis for retail GHG accounting: unbundling not allowed, emissions assigned to firmed-and-shaped renewable procurements. RECs do not determine the GHG attribute of delivered renewable energy.
- Emissions intensity may not match fuel mix.
- Renewable energy percentage on PSD may not match the RPS.
  - “Procurements made to satisfy RPS requirements do not necessarily reflect the sources of electricity associated with retail load in California.”
- No longer clear what RPS means for customers.

Causes & Effects of Inconsistent Accounting

Confusion about source-based and load-based programs.

Inconsistent load-based accounting.

1. Confusion about what is being transacted.
2. Double counting or disaggregation.
3. Customer confusion.
4. Confusion about program effectiveness and state goals.
5. Changes to procurement activities, dynamics between procurement entities.

Chapter 03.

PRINCIPLES OF LOAD-BASED ACCOUNTING

1. Avoid Double Counting.

It is a false choice between accounting properly and market benefits.

- False outcomes for states.
- Damages market integrity in general.
- Less renewable energy and fewer emissions reductions overall.

Coordinated and consistent policy design instead.

2. Do Not Disaggregate Emissions.

Disaggregating the REC would damage the integrity of compliance and voluntary markets for renewable energy.

- Confusing policy outcomes.
- Upend billions in existing contracts for GHG-free power that require the GHG attributes to be included in the REC.

It will not maximize market benefits.

The region can have both the optimization of the dispatch from a carbon price and the incentive to contract for and build renewables from RECs for RPS and CETA without "decoupling" or disaggregating the REC.

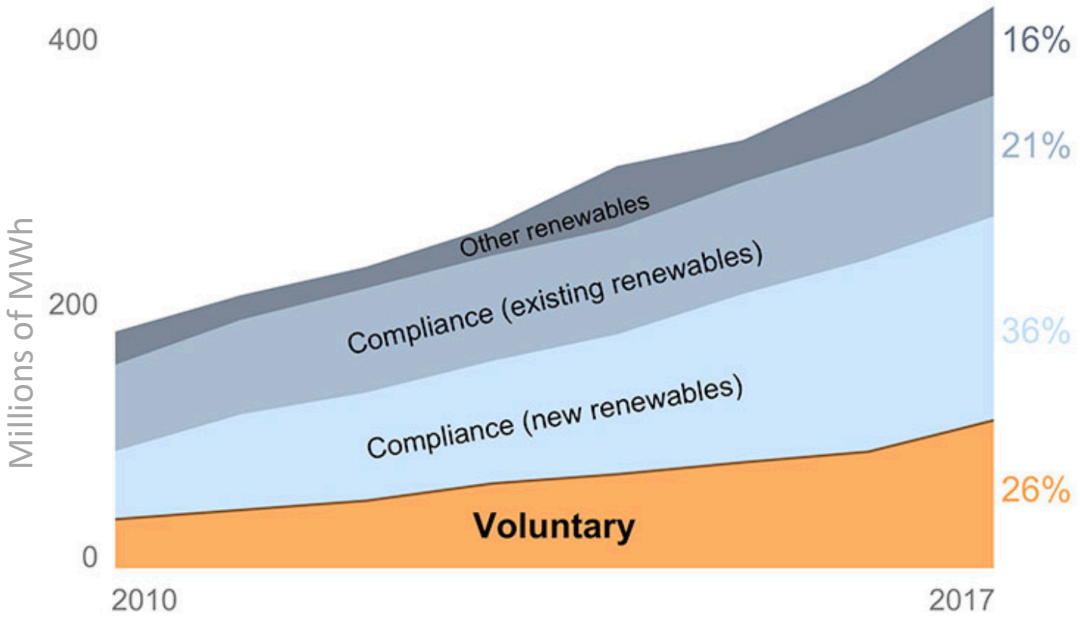
3. Use RECs.

To prevent double counting and keep generation attributes aggregated for clear and consistent transactions and claims.

- Prevent double counting.
- Increase trading and access to supply (larger markets).
- Transparency.
- Consistency.
- Carbon prices can still create market signals for wholesale markets and new construction.
- RPS programs continue to provide legislatively intended benefits.
- Continued growth of private renewable energy markets that depend heavily on fully aggregated RECs.

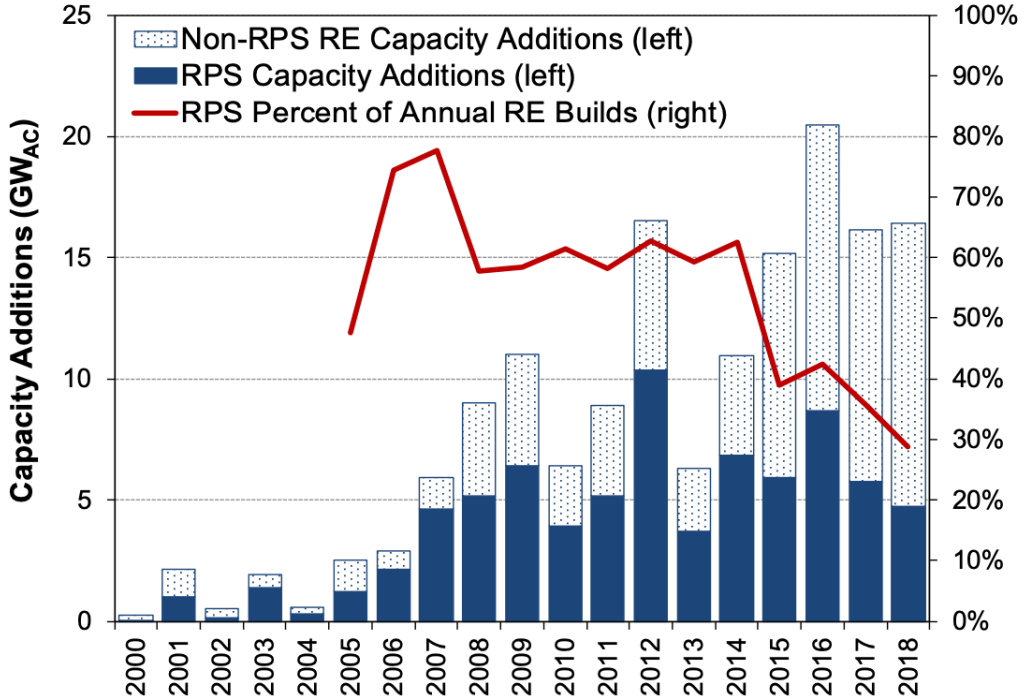
U.S. Voluntary Renewable Energy Market

Renewable energy sales in voluntary, compliance, and other markets, 2010–2017



Source: National Renewable Energy Laboratory
https://www.nrel.gov/analysis/green-power.html

Renewable Capacity Additions, 2000–2018



Source: Lawrence Berkeley National Laboratory
https://eta-publications.lbl.gov/sites/default/files/rps_annual_status_update-2019_edition.pdf

4. Strive for consistency with other programs.

Beyond RECs, load-based and consumer-facing programs, like CETA, RPS, PSD, and voluntary renewable energy programs, should be as consistent as possible.

- Avoids administrative inconsistency and burden.
- Creates clarity and consistency for customers.
- Development could be coordinated across states.
- Regional tools like all-generation certificate tracking would help.

5. Be transparent about objectives.

Objectives beyond accurate accounting that drive policy should be clearly articulated.

- Program requirements (e.g. that limit trading or the size of the market) can be connected to these objectives.
- To avoid undermining accounting fundamentals or the integrity of the accounting instrument.

6. Try not to limit the market.

Set program boundaries as close to market boundaries as possible to allow for regional efficiencies in compliance with the program.

- Balance state objectives that limit trading or market participation with region-wide market objectives.
- Requires coordination across states.

Chapter 04.

OPPORTUNITIES AND TOOLS FOR CONSISTENCY

1. Align Load-based Accounting.

It has been done before and could be done again.

- The RPS Adjustment represents an alignment of load-based accounting in response to inconsistency that was perceived as a problem in California.
- Similar regulatory mechanisms can and should be considered in the future.

2. Region-wide All-generation Certificate Tracking.

Would support consistent PSD and load-based accounting.
But it would take interstate and cooperation and data sharing.

- The most precise accounting of delivered power in the region.
- Accurate region-wide, subregional, and perhaps EIM-specific residual mixes for unspecified purchases.
- Requires a coalition of willing states and programs.
- Requires updates to multiple programs in multiple states.
- WREGIS would need additional data.
- First step is a PIR to WREGIS.

3. The “East Coast Model.”

GHG attribution to load is done separately from the wholesale market.

- Allocation using RECs does not disrupt organized markets on the East Coast.
- Would require changes to regulation or law in different states in the West.

4. "GHG Penalty" for Importing Renewable Energy without RECs.

Penalty for the emissions that result from non-EIM imports of renewable energy without RECs or that move emissions to states without GHG goals.

- Existing secondary dispatch compliance “penalty” for EIM imports perhaps mitigates potential double counting of EIM imports where RECs are used outside of California.
- Double counting of other California imports presents a similar secondary emissions problem.
- Might have similar effect as assigning emissions to “null” imports.
- Market-friendly alternative to disallowing RECs associated with imports to California in Washington and other states.
- Consistency among states that regulate generators and importers and consistency among states that regulate utilities.

Chapter 05.

SOLUTIONS FOR COMPLIANCE USING THE EIM

Compliance Using the EIM

1. Two different approaches to using EIM for compliance in CA (cap-and-trade) and WA (CETA).

   California: could require RECs for EIM imports.

   Washington: could allow use of EIM/EDAM for CETA compliance with the 80% of retail load.

   - Matching the timing of the purchase with the time of RECs, or
   - EIM purchase + RECs from EIM resources (EIM RECs).

2. A single approach to resource-specific delivery of power to load in EIM that works for both CA and WA.

Certificates and all-generation tracking could be used in conjunction with this.

3. The “East Coast Model.”

Chapter 06.

CONCLUSIONS

Conclusions

1. We must allocate clean generation and emissions to load.

2. The allocation method should involve RECs.

3. We want regional market expansion and efficiencies.

- These are not in conflict.
- Inconsistency threatens all three.
- Disaggregating the REC would not maximize regional benefits.
- Both inconsistent allocation methods and limiting the types of transactions can negatively impact market expansion.

Conclusions

1. We must allocate clean generation and emissions to load.

2. The allocation method should involve RECs.

3. We want regional market expansion and efficiencies.

- The “East Coast Model” would take regional coordination, cooperation from control area operators, and possibly changes to regulation and law.
- States should work together to align programs and at least build consistency among like programs.
- States and control area operators in the West should support the development of all-generation certificate tracking.
- Washington should pursue flexibility in implementing CETA’s 80% bundling provision.

Q&A

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