

Fundamentals of Policy

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Discussion Goals

- This session should help you understand and participate in the policy discussions facing the voluntary market now
 - Federal RES
 - Federal cap and trade
 - GHG accounting principles
- Course level ~ 201
- Have questions? Let discuss them.



EPA Perspective

EPA on climate change

- We need to reduce GHGs 80% below 2005 levels by 2050
 - ... in the most cost-effective manner
 - Technologically neutral with regard to GHG mitigation strategies

My role

- Green Power Partnership
- Renewable electricity policy



My Key Observations

- Increasing renewable energy is critical for a comprehensive approach to climate change.
- Current federal and state policies have led to new, but limited renewable energy generation.
- Significant growth potential in renewable technologies can be achieved through **new and improved federal policies support**.
 - Plans to reduce GHGs ~80% by 2050 should help deploy renewables, but it is uncertain whether renewables will be directly or indirectly affected
- These policies will impact voluntary market purchasing ... but how?



The Voluntary Market

- Customers can elect to purchase green power to reduce the environmental impacts of their electricity use
- Voluntary purchases currently account for about 1/2 of U.S. demand for new renewable generation
- Environmental value of green power, specifically the GHG emission reduction claims, drive voluntary purchases
 - Other drivers too – fixed price, SPPAs, other marketing claims
- Voluntary purchases are signal to the market – What is the value of clean energy?

Policy Issues Facing Voluntary Market

- Renewable Electricity (or Portfolio) Standards
- Cap and trade
- GHG accounting

Interaction with Compliance Markets

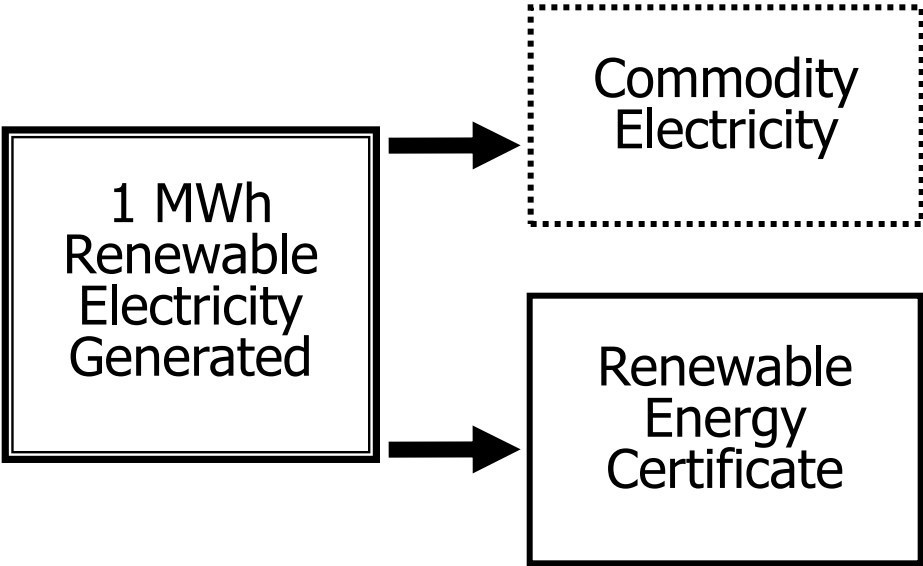
- State renewable portfolio standards (RPS) increase demand for renewable energy credits (RECs) ... to a point
 - To date, 29 states have RPS policies, creating compliance markets
- Voluntary REC purchases are always incremental to RECs required by RPS policies
 - Each REC can only be used for one purpose, by one owner
 - REC tracking systems help prevent double counting
- Double-counting = ~~credibility~~ = no voluntary market demand

Federal RES

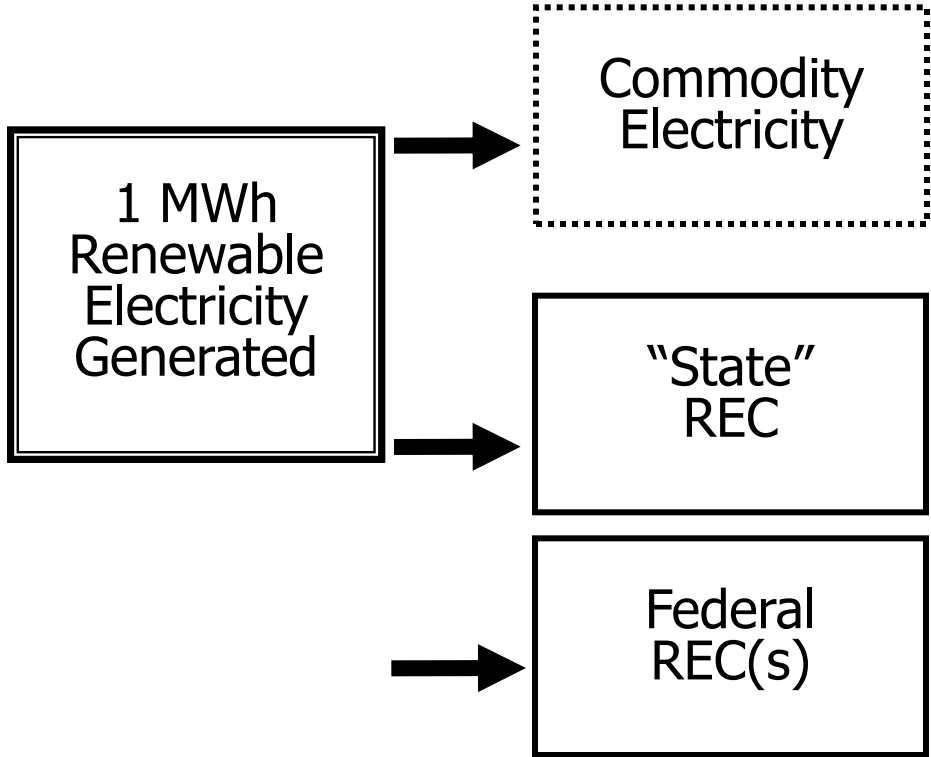
- A Federal renewable electricity standard would create a national compliance market with a fixed demand for Federal RECs (and energy efficiency)
 - House and Senate bills currently don't mention the voluntary market
 - Both bills introduce a new compliance mechanism - Federal RECs
- Will voluntary purchases increase the RE supply above the level required by the Federal RES?
 - *Under current legislation, a Federal REC would have to be retired for each REC purchased*
 - No guarantee that this will occur

Federal RES

NOW

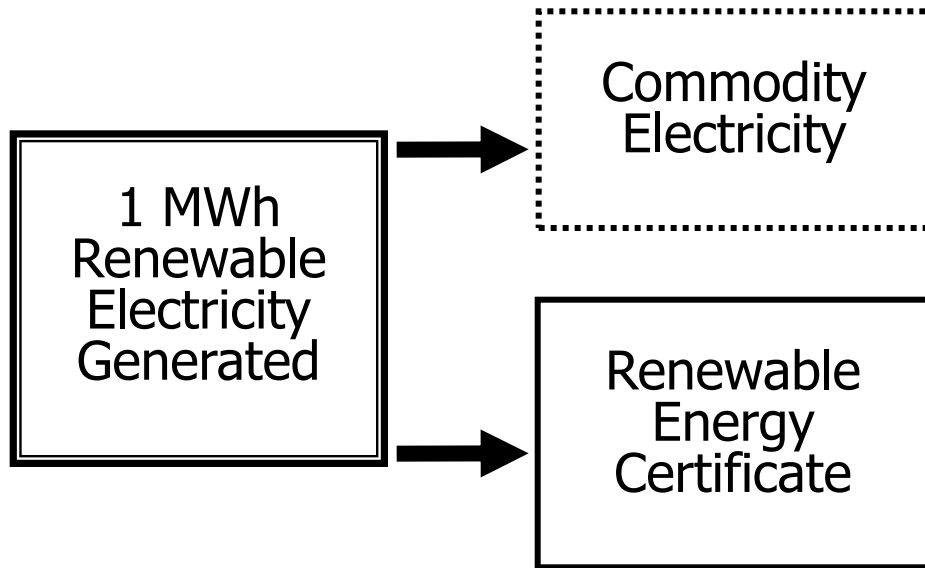


WITH FEDERAL RES

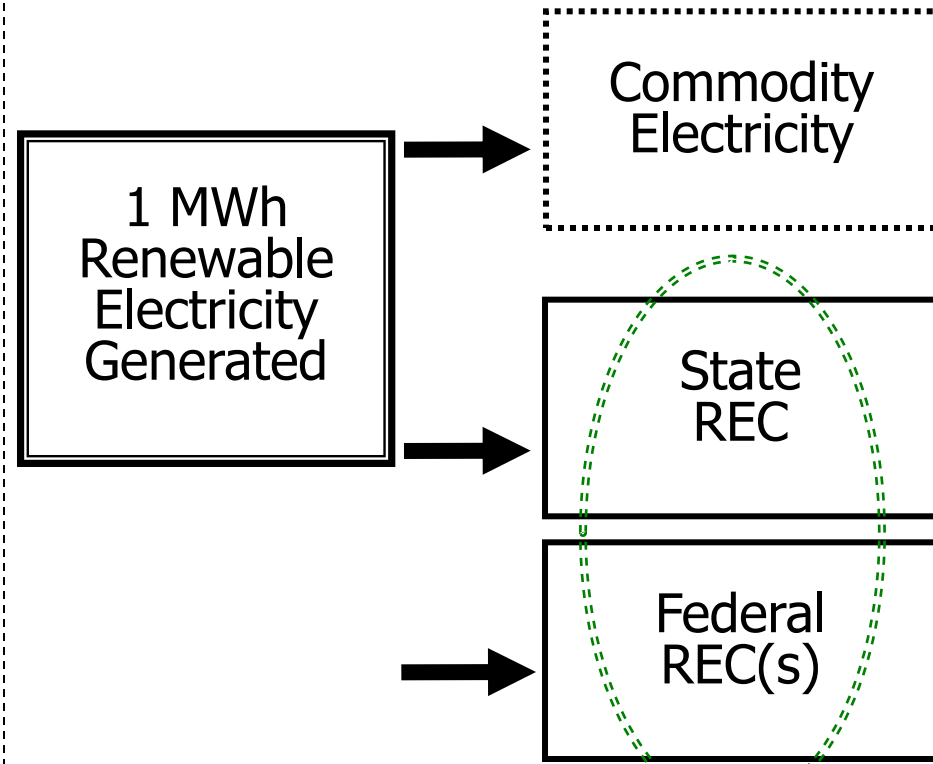


Federal RES

NOW



WITH FEDERAL RES



- Double-counting = ~~credibility~~ = no voluntary market demand

GHG Emissions Trading

- Currently, U.S. GHG emissions are un-capped, with the exception of these existing and planned regional programs:
 - RGGI – underway, California and WCI - developing rules, and Midwestern GHG Reduction Accord - Developing consensus program
- Without a cap, voluntary purchases displace fossil fuel based power and reduce the associated GHG emissions
- Do voluntary purchases reduce GHG emissions under a cap?
 - Yes or no, depending on the policies...

GHG Emissions Trading w/o Policies to Support Voluntary Purchases

- A cap and trade program sets the emissions ceiling
- Unless policies to the contrary are established, a renewable energy purchase (voluntary or mandatory) will not reduce total emissions
- Instead, the renewable energy purchase will make it cheaper for polluters to comply with the cap by reducing demand for allowances—but the supply of allowances and therefore total emissions remains fixed by the cap
- Cap and trade programs can allow renewable energy purchases to reduce emissions by:
 - Establishing set-aside accounts
 - Setting the cap to account for renewable energy purchases

Federal Cap and Trade

- The current version of the American Clean Energy and Security Act (Waxman-Markey) does not include provisions for voluntary purchases
 - If a set-aside provision were available at the option of each state, could balkanize the market
- VRE generators or marketers could purchase allowances and retire them on behalf of VRE purchasers
 - The cost of allowances will determine if this makes business sense
 - Purchasers may decide just to buy allowances and bypass RE

GHG Accounting

- GHG Protocol – Widely-accepted accounting standard
 - Scope 1 – Direct emissions (e.g., onsite power plant, vehicle fleet)
 - Scope 2 – Indirect emissions (primarily electricity consumption)
 - Scope 3 – Other indirect emissions (e.g., supply chain, employee travel)
- Organizations use GHG Protocol to inventory emissions and determine what steps to take in reducing their footprint
- Currently:
 - Voluntary purchases adjust the Scope 2 baseline of the purchaser
 - Emission reductions associated with the avoided fossil fuel generated power adjust the Scope 1 baseline of the fossil fuel generator
- With climate legislation, unclear whether GHG accounting will be affected

RECs and Offsets

Without a cap:

- RECs evidence green power generation and indirect emission reductions
- Offsets evidence emission reductions additional to BAU
- Offsets can adjust Scope 1 (direct) baseline
- Additionality measurements for voluntary RECs and offsets are different
- A REC can be converted to an offset if it meets the proper definitions, but a REC can never be both a REC and an offset; tracking systems prevent double counting

To Review

- Voluntary purchases account for $\sim 1/2$ of new renewable energy generation
- Policies exist to ensure the credibility of voluntary purchases as:
 - Additional
 - New
 - Verifiable
 - Scope 2 (indirect emissions) baseline adjustments
- The impact of future Federal regulation on these policies is unclear
 - Federal RES and additionality of voluntary purchases
 - Federal carbon cap and emission reduction claims



Thank you!

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Cap and Trade Basics

- Set an emission tonnage cap for the sector.
- Distribute allowances that permit emission of one ton.
- Each generator must hold allowances equal to actual emissions at the end of the compliance period.
- Generators can buy and sell allowances as well as control emissions.



Basic Implications of Cap and Trade

- Individual generators are not required to meet any specific emission target.
- The expectation is that generators with low cost of control will overcontrol and sell allowances to generators with high cost of control.
 - Some generators will not control at all. The high cost-of-control units are key beneficiaries of the program.
- The market will find the lowest cost reductions and the overall cost of the program will be lower than with command and control.



The Cap Paradox

- The cap will not be exceeded but...
- Emissions will not be significantly below the cap either.
 - If emissions are reduced from any given unit, they will be sold to another unit.



Renewables Under the Cap

- Increased renewable generation alone does not reduce emissions under the cap.
- To actually reduce emissions, allowances must be retired.
- Any incremental (unanticipated) renewable generation reduces the need for emitting sources to lower their emissions and, thus, can reduce compliance costs.



RGGI - The Set-Aside Account

- RGGI allows states to allocate a small percent of allowances to a voluntary renewable energy (VRE) set-aside account for VRE purchases
 - All RGGI states except Delaware have established a VRE set-aside account
- At the beginning of each compliance period, the state reserves a number of allowances in its VRE account
- At the end of the period, RE marketers submit documentation of VRE purchases (MWh)
- The state converts the MWh to equivalent allowances using the CO₂ emission factor where the RE was generated (usually), and retires the allowances on behalf of VRE purchasers → VRE purchases reduce GHG emissions
- Differences between actual and projected sales may be trued up in the following compliance period

WCI – Setting the Cap?

- Under WCI design recommendations:
 - A portion of allowances will be dedicated, through set-asides or distribution of auction revenues, to RE “incentives and achievements” and RE generation RDD&D, among other things
 - Voluntary emission reductions will be considered when setting the cap
- Voluntary purchases will reduce GHG emissions if WCI follows through with the VRE set-aside or if WCI considers voluntary demand projections when setting the cap
- California is developing its rules in parallel with WCI efforts