



# Voluntary Renewable Energy Set-Asides For Cap-And-Trade

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As states consider adoption and implementation of cap-and-trade or similar carbon regulation programs, it is important to address the impact of these programs on renewable energy development, and in particular private investment in and use of renewable energy (i.e. the voluntary renewable energy market).

Implementation of a cap-and-trade program covering the power sector would require electric generators or other regulated entities to hold tradable allowances (i.e. permits) to cover their carbon dioxide (CO<sub>2</sub>) emissions. These programs reduce the total amount (mass) of emissions from regulated sources over time by lowering the number of allowances available. They also impose an emissions penalty by putting a price on CO<sub>2</sub> emissions.

Without careful design, caps (or mass-based emissions limits or performance standards) in the power sector can damage the voluntary market for renewable energy—where individuals and businesses choose to buy clean, renewable energy or build their own clean energy generation capacity. States can easily address this issue through program design in order to avoid negative impacts to voluntary demand for and private investment in renewable energy.

## **The voluntary renewable energy market is important in every state.**

Thousands of businesses and millions of individuals in every state across the country voluntarily purchase green power and thousands of renewable energy generators across the country supply it to them, amounting to billions of kilowatt-hours of renewable energy annually.<sup>1</sup> The latest report on the voluntary renewable energy market from the National Renewable Energy Laboratory (NREL) shows that the amount of renewable energy purchased through the voluntary market represents approximately 2% of total U.S. electricity sales and is growing at 10% per year.<sup>2</sup> The voluntary renewable energy market represents 25% of all non-hydro renewable generation nationally and is equivalent in size to 61% of combined state Renewable Portfolio Standard

(RPS) markets from facilities built within the last 20 years.<sup>3</sup> Other reports show that corporate buyers invested in nearly six gigawatts (GW) of new renewable energy capacity in the past three years alone.<sup>4</sup> Particularly in recent years, significant proportions of new solar and wind capacity have been built to serve voluntary customers. In 2015 and 2016, the majority of renewable capacity additions have been made outside of state-mandated renewable energy requirements, 60% and 55% respectively.<sup>5</sup>

Alongside state mandates like RPS and direct regulations, the voluntary renewable energy market has been a major driver of new clean energy development in this country, leading to more jobs and greater economic growth for states. The market leverages private, non-ratepayer funding to help speed the transition to renewable energy sources, and it provides a pathway whereby the appetite for voluntary action can be channeled to in-state clean energy development.

## **The fight against climate change is a key driver of voluntary demand for renewable energy.**

Many of the companies and individuals purchasing in the voluntary renewable energy market do so as part of their commitment to fight climate change. Voluntary market driven renewable energy displaces emitting generation and avoids emissions on the grid, and consumer preferences for renewable energy can drive more reductions than those achieved by policy mechanisms alone.

## **Voluntary means surplus to regulation.**

Historically, voluntary renewable energy is not used to meet governmental targets, laws, or legal mandates. It is essential that renewable energy is not double counted, such that each megawatt-hour (MWh) sold is delivered to and consumed once by a single party. But beyond this, the voluntary market stands apart from compliance efforts. The voluntary market builds on, rather than competes with the compliance markets. As a result, we have seen

the greatest amount of voluntary market activity occur in the areas with the most compliance-driven renewable energy development.

Corporate and other voluntary commitments to renewable energy go beyond what is required by state or federal policy. Voluntary buyers expect their investments to support renewable energy that actually reduces emissions, not to simply provide voluntary compliance or reduce the costs of compliance for regulated entities. This enables the voluntary market to make an incremental difference often referred to as “regulatory surplus.”

Without proper accommodation for voluntary renewable purchases in cap-and-trade program design, voluntary investments in clean energy will cease making a real difference to CO<sub>2</sub> emissions—carbon regulation will have the unintended consequence of reducing the demand-side impact of voluntarily purchasing renewable energy.

### **Cap-and-trade will automatically account for emissions reductions from voluntary renewable energy.**

Where states adopt a cap-and-trade program, anything that reduces either emissions or generation at regulated units is automatically reflected in the amount of regulated emissions reported and counted toward compliance. This includes renewable energy, which displaces generation at emitting electric generators, reducing generation and avoiding emissions. Emissions reductions at electric generators that are due to voluntary renewable energy generation are no longer surplus to regulation. Rather, voluntary purchases of renewable energy will be supporting cap-and-trade compliance, making it easier for fossil fuel generating units to comply.

The voluntary market will not be achieving emission reductions beyond the cap, but instead simply shifting the costs away from regulated entities and onto those taking voluntary action. Once the cap-and-trade program is in place, voluntary renewable energy generation reduces emissions at regulated units but will not affect the level of allowed emissions from these units. It frees up allowances or room under the cap for regulated entities to emit more and each voluntary purchaser of renewable energy that chooses to clean up their electricity supply will just allow more emitting activity elsewhere.

### **Unless the voluntary market can affect statewide emissions and reduce emissions beyond what is required under cap-and-trade, voluntary demand for renewable energy may suffer.**

Without regulatory surplus, the capped level becomes the ceiling for emissions reductions instead of the floor. This would discourage all actors, and specifically corporate customers, from making private investments in renewable energy. Without explicit recognition of the emissions reductions from the voluntary market, a

principal driver of these investments may be lost. The result would not just be negative impacts on the overall growth of renewable investments, but also the elimination of the cap-and-trade compliance contributions that strong voluntary renewable energy markets otherwise present. Experience with RPS demonstrates that both compliance and voluntary markets are more successful when they are designed to operate on a side-by-side basis.

### **An allowance “set-aside” for voluntary renewable energy is a proven mechanism to sustain voluntary demand for renewable energy with cap-and-trade.**

Companies and individuals willing to go beyond compliance levels can continue to drive carbon emissions reductions, provided that cap-and-trade programs are properly structured. To restore regulatory surplus and allow the voluntary market to continue to affect emissions beyond what is required by law—and to avoid potentially discouraging corporate actors from making private investments in renewable energy in the state—cap-and-trade programs must include a mechanism that effectively lowers the cap or emissions budget to explicitly recognize emissions reductions from voluntary renewable energy as incremental to what would otherwise be achieved due to the cap.

Cap-and-trade programs should include an allowance set-aside mechanism for voluntary renewable energy, which involves setting aside and retiring allowances equivalent to the amount of CO<sub>2</sub> emissions avoided due to voluntary clean energy purchases and consumption. Doing so will restore regulatory surplus and restore the avoided grid emissions benefit for voluntary renewable energy.

### **A voluntary renewable energy set-aside will be good for the state economically.**

A voluntary renewable energy set-aside provides a pathway whereby the appetite for voluntary action can be channeled to clean energy development in the state, and avoids a situation whereby the willingness to invest in voluntary action is diverted to out-of-state projects.

Green-e® is the leading standard and certification for voluntary renewable energy in the U.S., and it currently requires allowance retirement for certified renewable energy in regions in the U.S. with power sector emissions limits in order to meet consumer expectations. If a cap-and-trade program is adopted and implemented without a voluntary renewable energy set-aside mechanism, Green-e may be unable to continue to certify voluntary sales of renewable energy from the state, or the additional cost of allowance retirement to the voluntary purchaser may preclude certified sales from generation in the state. This would mean that voluntary buyers in these states will get their certified renewable energy from outside of the state in the future. A voluntary renewable energy set-aside will allow for this demand to be met by resources in the state—allowing your state the opportunity to maintain the private investment dollars that may otherwise go elsewhere—and

this could prevent a loss of revenue from voluntary purchasers for in-state generation.

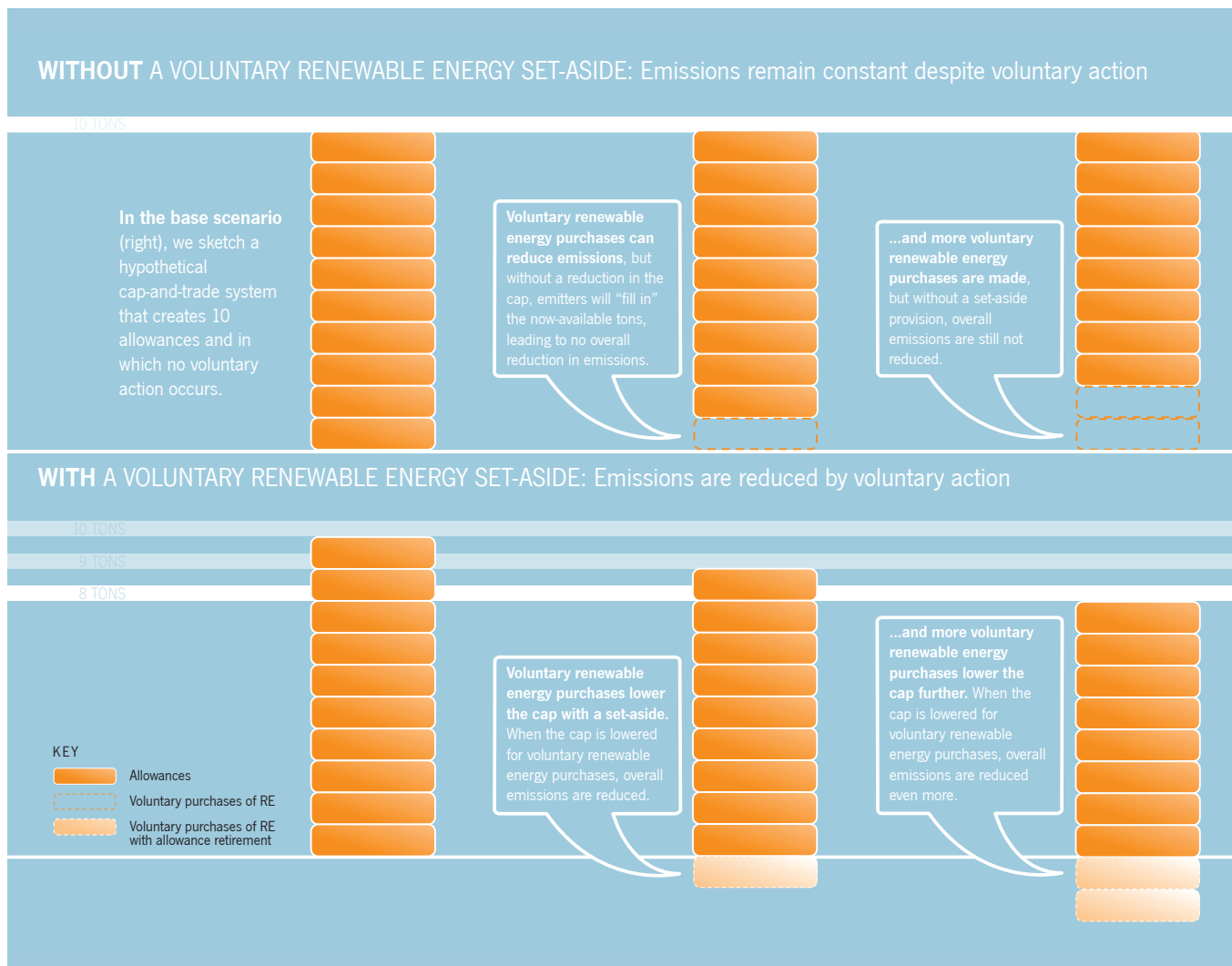
### Voluntary renewable energy set-asides have already been implemented in California and the Regional Greenhouse Gas Initiative (RGGI).<sup>6</sup>

States could choose to model a voluntary renewable energy set-aside after either California or the RGGI model rule. States in RGGI set aside allowances based on actual generation (supply used for voluntary sales) submitted by the voluntary market. The states may have caps on the total number of allowances that can be set aside. The seller or voluntary consumer using renewable energy supply from within the RGGI footprint applies to the set-aside in the RGGI state in which the voluntary sale was made. In California, the state has set a fixed amount of allowances to set aside for the voluntary renewable energy market. The number of allowances available is calculated based on an estimate of the amount of voluntary renewable energy sales. The seller or voluntary consumer applies to the set-aside for any in-state or imported generation.

### Voluntary renewable energy set-asides have garnered wide support from a broad group of stakeholders.

When adopted in California, over 50 organizations publically supported such a policy, including energy companies, project developers, environmental and public health advocates, industry associations, academic institutions, and others.<sup>7</sup> The Natural Resources Defense Council (NRDC), Pace Energy and Climate Center, Renewable Northwest, the Solar Energy Industries Association (SEIA), the Union of Concerned Scientists (UCS), and others supported such an approach in the context of the Clean Power Plan (CPP).<sup>8</sup>

The voluntary renewable energy market has been a major driver of emissions reductions beyond what can be attributed to other policies and programs. Without proper accommodation for and recognition of the voluntary market in cap-and-trade programs, these emissions reductions may be lost. A set-aside for the voluntary market is a proven and simple mechanism that states can



incorporate into state plans at little cost that would maintain the carbon benefits of voluntary renewable energy without substantially increasing in the cost for voluntary buyers. This will allow the voluntary market to continue to grow and reduce emissions. •

Additional information is available from Center for Resource Solutions (CRS), along with the following resources.

## Resources

- Jones, T and Bucon, N. (October 2017). *Corporate and Voluntary Renewable Energy in State Greenhouse Gas Policy: An Air Regulator's Guide*. Center for Resource Solutions. resource-solutions.org/document/101717/.
- *Support Voluntary Purchases of Clean, Safe, 21st Century Energy With an Off-the-Top Rule Under Cap and Trade*, May 18, 2009, resource-solutions.org/document/051809/.
- *Implications of Carbon Regulation for Green Power Markets*, April 2007, www.nrel.gov/docs/fy07osti/41076.pdf.
- *Joint Letter in Support for Voluntary Renewable Energy Set-Aside in the Proposed California Cap-and-Trade Program*, December 13, 2010, resource-solutions.org/site/wp-content/uploads/2015/08/Voluntary-Renewable-Set-Aside\_12-13-10.pdf.
- *Letter to Senator Boxer on Recommended Changes to Cap-and-Trade Design Under ACESA to Support the Voluntary Renewable Energy Market*, July 23, 2009, resource-solutions.org/document/072309/.
- *Coalition letter to Kevin Kennedy, CARB Office of Climate Change on the issue of off-the-top treatment of voluntary renewable energy purchases*, June 7th, 2010, resource-solutions.org/document/06071002/.
- *Letter to Claudia Orlando, California Air Resources Board supporting off-the-top approach to voluntary renewable energy purchases in a California cap-and-trade program*, June 12th, 2009, resource-solutions.org/document/06120901/.

## Notes

1. For more information about the importance and impact of voluntary green power purchasing, visit [www.epa.gov/greenpower/](http://www.epa.gov/greenpower/). Also see NREL's market analysis at [www.nrel.gov/analysis/green-power.html](http://www.nrel.gov/analysis/green-power.html).
2. Based on figures from O'Shaughnessy, E. et al. (October 2016). *Status and Trends in the U.S. Voluntary Green Power Market (2015 Data)*. National Renewable Energy Laboratory (NREL). Technical Report NREL/TP-6A20-67147. Using 2015 total US electricity sales of 3.7 billion MWh from U.S. Energy Information Administration (EIA): [www.eia.gov/electricity/state/unitedstates/](http://www.eia.gov/electricity/state/unitedstates/).
3. *Ibid.* Using 2015 total non-hydro renewable electricity generation of 309,301 gigawatt-hours (GWh) from EIA. And using 2015 RPS demand from renewables built since the commencement of the RPS of 126,517 GWh, obtained from Lawrence Berkeley National Laboratory.
4. See Business Renewables Center. (May 2017). *Corporate Renewable Deals 2012–2017*. Rocky Mountain Institute. Available at: [businessrenewables.org/corporate-transactions/](http://businessrenewables.org/corporate-transactions/).
5. See Barbose, G. (2017). *U.S. Renewables Portfolio Standards: Status Update and Review of Costs, Benefits, Impacts*. Presentation to Michigan State IPU Grid School, March 28, 2017. Lawrence Berkeley National Laboratory. Slides 8–9.  
  
Also see Barbose, G. (2016). *U.S. Renewables Portfolio Standards: 2016 Annual Status Report*. Presentation April 2016. Lawrence Berkeley National Laboratory. Available at: [emp.lbl.gov/sites/all/files/lbnl-1005057.pdf](http://emp.lbl.gov/sites/all/files/lbnl-1005057.pdf)
6. See title 17, CCR, section 95841.1. See Section XX-5.3(d) of the RGGI Model Rule, 12/31/08 final with corrections.
7. See comments on voluntary renewable energy set-aside mechanisms under Resources.
8. See Endorsements listed at [resource-solutions.org/cpp-comment-guidance](http://resource-solutions.org/cpp-comment-guidance).