[SUBMITTED VIA EMAIL TO ghg@deq.virginia.gov]

April 9, 2018

Karen G. Sabasteanski
Department of Environmental Quality
1111 East Main Street, Suite 1400
P.O. Box 1105
Richmond, VA 23218

RE: Comments of Center for Resource Solutions (CRS) on Proposed Regulation for Emissions Trading Programs, as Published in the Virginia Register of Regulations on January 8, 2018 (VOL. 34 ISS. 10)

Dear Ms. Sebasteanski:

CRS appreciates this opportunity to comment on the January 8, 2018 Proposed Regulation 9VAC5-140, Regulation for Emissions Trading Programs (adding 9VAC5-140-6010 through 9VAC5-140-6430) ("Proposed Regulation"). Our comments are limited to the benefits of incorporating a mechanism into the proposed emissions trading program that would protect voluntary and corporate renewable energy demand, purchasing, and emissions benefits in Virginia.

Specifically, to the extent that the Proposed Regulation generally conforms to the Regional Greenhouse Gas Initiative (RGGI) Model Rule[1] and since Virginia's program will be linked with RGGI, the RGGI Model Rule includes an optional voluntary renewable energy market set-aside provision[2] that can be easily incorporated into the Proposed Regulation. In this case, Virginia would be able to draw on the experiences of eight other RGGI states that have successfully adopted and implemented this provision.[3] We strongly recommend that Virginia incorporate this or a similar provision into its Proposed Regulation in order to maintain and grow the environmental and economic benefits of voluntary, private investment in Virginia renewable energy.

Background on CRS and Green-e®

CRS is a 501(c)(3) nonprofit organization that creates policy and market solutions to advance sustainable energy. Since 1997, CRS has provided technical assistance and guidance to states, federal agencies, electricity attribute tracking systems, and market participants across the country regarding the design and development of state, regional, and national renewable energy and climate policies and markets. CRS also administers the Green-e programs. Green-e is the leading certification program for voluntary renewable electricity products in North America. For over 20 years, Green-e has verified renewable

[1] See December 19, 2017 RGGI Model Rule. Available at: https://www.rggi.org/sites/default/files/Uploads/Program-Review/12-19-2017/Model_Rule_2017_12_19.pdf.
[2] Sec. XX-5.3(l) of the December 19, 2017 RGGI Model Rule
[3] Connecticut, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont have incorporated the voluntary renewable energy market set-aside into their individual state CO_2 Budget Trading Program regulations and currently administer voluntary renewable energy set-aside mechanisms within RGGI.

energy purchases in the voluntary market to provide consumer protection and protect against double counting. In 2016, Green-e certified retail sales of over 48 million MWh, representing over 1.3% of the total U.S. electricity mix. In 2016, there were over 963,000 retail purchasers of Green-e certified renewable energy, including 53,000 businesses.

Background on the National Voluntary Renewable Energy Market

Separate from Renewable Portfolio Standard (RPS) mandates, the voluntary renewable energy market leverages private, non-ratepayer funding to support renewable energy sources, and it provides a pathway whereby the appetite for voluntary action can be channeled to clean energy development. 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.[4] Reports on the voluntary renewable energy market from the National Renewable Energy Laboratory (NREL) show 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.[5] The voluntary renewable energy market represents 25% of all non-hydro renewable generation nationally and is equivalent in size to 61% of combined state compliance or RPS markets from facilities built within the last 20 years.[6] Other reports show that leading corporate buyers invested in nearly six gigawatts (GW) of new renewable energy capacity in the past three years alone.[7] In 2015 and 2016, the majority of renewable capacity additions were made outside of state-mandated renewable energy requirements, 60% and 55% respectively,[8] and a significant portion of this has been built to serve voluntary customers.

Background on the effect of the Proposed Regulation on Voluntary Renewable Energy Benefits

<u>The Proposed Regulation would change the benefits of voluntary renewable energy in Virginia and may negatively impact voluntary demand and investment.</u>

Under the Proposed Regulation, GHG reductions at regulated electricity generating facilities due to renewable energy generation will be automatically counted and reported by those facilities toward compliance, and since the Proposed Regulation determines and fixes the level of emissions from the sector, there is no net change to emissions at regulated sources due to renewable energy generation. In

[4] See http://www.epa.gov/greenpower/. Also see the National Renewable Energy Laboratory's (NREL's) market analysis at http://www.nrel.gov/analysis/market_green_power.html.

[5] 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): https://www.eia.gov/electricity/state/unitedstates/.

[6] *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 (LBNL).

[7] See Business Renewables Center. (May 2017). *Corporate Renewable Deals 2012-2017*. Rocky Mountain Institute. Available at: http://businessrenewables.org/corporate-transactions/.

[8] 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: https://emp.lbl.gov/sites/all/files/lbnl-1005057.pdf.

this scenario, renewable energy generation in Virginia that is purchased voluntarily by businesses, institutions, municipalities, organizations and individuals ("voluntary renewable energy") can have no impact on statewide or regional GHG emissions beyond what is already required, and furthermore, it subsidizes compliance for regulated entities. As voluntary renewable energy reduces emissions counted toward compliance, voluntary purchases help reduce the cost of compliance, making it cheaper and easier for regulated emitting facilities to comply. This presents a very different value proposition for voluntary and corporate buyers and investors in comparison to circumstances prior to implementation of the Proposed Regulation.

Historically, voluntary renewable energy has not been used to meet governmental targets, laws, or legal mandates. The voluntary market stands apart from and builds on compliance efforts. This separation enables the voluntary market to make an incremental difference often referred to as "regulatory surplus." Voluntary purchasers of renewable energy tend to value this incremental impact highly. Renewable energy generation that is counted toward regulatory compliance cannot be considered surplus to regulation.

Regulatory surplus with respect to GHG regulations may be especially important for voluntary renewable energy demand. Since many of the companies and individuals purchasing in the voluntary market do so as part of a commitment to address GHG emissions, an effect on emissions beyond what is required by law may be a critical non-financial benefit for voluntary purchasers. Where renewable energy sold into the voluntary market does not have an effect beyond compliance and instead only serves to help regulated entities comply with existing regulatory requirements, this changes the effectiveness of voluntary renewable energy as a climate change solution for participating companies and individuals. As such, voluntary demand for renewable energy may decline if these benefits do not remain intact.

<u>Voluntary Renewable Energy Market Set-asides have proven effective in other RGGI states to protect voluntary demand for renewable energy as a driver of emissions reductions.</u>

Virginia's emissions trading program can protect and preserve voluntary renewable energy benefits and demand by incorporating an allowance set-aside provision into its emissions trading program that sets aside and periodically retires allowances for voluntary renewable energy, effectively lowering the emissions cap on its behalf. If implemented, this mechanism counteracts the automatic counting of emissions reductions associated with voluntary renewable energy and explicitly recognizes emissions reductions from voluntary renewable energy as incremental to what would otherwise be achieved through GHG Regulations. This helps preserve voluntary demand and private investment in renewable energy as drivers of emissions reductions, which can lower the cost of and reduce the need for GHG regulations.

Sec. XX-5.3(l)(2) of the RGGI Model Rule contains provisions for the number of short tons that would be allocated to the voluntary renewable energy market set-aside account in a specific control period, including a sample formula with which the state could calculate the quantity of set-aside allowances that would be required.

Eight of nine states already participating in RGGI have implemented this provision.

Benefits of a Voluntary Renewable Energy Market Set-aside in Virginia

1. More emissions reductions.

Regulatory surplus is critical to sustaining clear voluntary claims and has been very helpful in the RGGI region in sustaining voluntary investment in renewable energy beyond what is already required. A voluntary renewable energy set-aside preserves regulatory surplus for voluntary renewable energy by lowering the emissions cap and explicitly recognizing those emissions reductions as incremental to what would otherwise be achieved due to the cap. In so doing, a set-aside can motivate private capital to produce voluntary renewable energy generation and emissions reductions in excess of state mandates. Alternatively, where voluntary demand for renewable energy is limited, by extension, so is the overall development of renewable energy and associated emissions reductions. By not including a set-aside for voluntary renewable energy in the Proposed Regulation, Virginia is potentially leaving privately-funded emissions reductions on the table, which it will later have to regulate to achieve, and setting its CO_2 emissions budget as a ceiling for emissions reductions.

2. Economic benefits.

Green-e sets the standard for the voluntary market based on stakeholder-driven criteria. To maintain the impact of the voluntary market and in order to meet consumer expectations, Green-e currently requires a set-aside mechanism or independent allowance procurement and retirement for all certified sales in regions covered by cap-and-trade regulation. Due to the lack of a set-aside provision in the Proposed Regulation, Green-e would not be able to certify voluntary sales of renewable energy from within RGGI or Virginia to customers in Virginia, unless the voluntary customer pays the additional price of carbon to independently purchase and retire an allowance with their purchase.

Since voluntary customers are unlikely to pay this additional cost, we anticipate that there simply would be no Green-e voluntary market for Virginia renewable energy generation in the state, or for RGGI renewable energy generation that is sold into Virginia. This means that voluntary buyers in Virginia will have to get their certified renewable energy from outside of the RGGI region. In 2016, Green-e certified over 728,000 MWh in sales to over 30,000 retail customers located in Virginia. This shows strong demand for voluntary renewable energy in the state.[9]

Adoption of a voluntary renewable energy set-aside in Virginia would allow for this demand to be met by resources in Virginia and within RGGI—allowing your state the opportunity to capture the private investment dollars that would otherwise go elsewhere. In other words, the set-aside would remove a significant barrier to investment and the development of renewable energy in Virginia beyond that which is achieved by the RPS goal, and this could lead to increased revenue from voluntary purchasers for Virginia generation.

Additional Resources

A great deal more background, context, and detail on the interactions between state-level GHG regulations and voluntary renewable energy markets, including on the design and implementation of allowance set-aside mechanisms can be found in the recent *Corporate and Voluntary Renewable Energy*

[9] Green-e certifies a majority, but not the entirety of the voluntary market, which means that Green-e certified sales information for Virginia represent a conservative estimate of voluntary activity in the state.

in State Greenhouse Gas Policy: An Air Regulator's Guide (2017)[10]. This resource also includes information and recommendations specific to the RGGI voluntary renewable energy set-aside provisions. We encourage you to consider this resource along with these comments.

Finally, we have attached two additional documents for your consideration. The first is *Joint Stakeholder Comments for the March 1, 2016 Public Workshop and Listening Session Regarding the Delaware Clean Power Plan* submitted to the Delaware Department of Natural Resources and Environmental Control (DNREC) by CRS and 8 other environmental organizations. This document explains the benefits of a voluntary renewable energy set-aside mechanism for Delaware, the only RGGI state that has not adopted the provision. The benefits are similar for Virginia. The second attached document is a fact sheet on *Voluntary Renewable Energy Set-Asides for Cap-And-Trade*[11], which summarizes the importance and benefits of a voluntary renewable energy set-aside mechanism for a general audience.

Please let me know if we can provide any further information or answer any other questions.

Sincerely,

Todd Jones
Director, Policy and Climate Change Programs

Attachments

- **Joint Stakeholder Comments for the March 1, 2016 Public Workshop and Listening Session Regarding the Delaware Clean Power Plan**
- **Voluntary Renewable Energy Set-Asides for Cap-And-Trade (Fact Sheet)**

[10] Available online at: https://resource-solutions.org/wp-content/uploads/2017/10/Corporate-and-Voluntary-RE-in-State-GHG-Policy.pdf.
[11] Available online at: https://resource-solutions.org/wp-content/uploads/2017/11/Voluntary-RE-Fact-Sheet.pdf.

March 1st, 2016

Valerie Gray
Air Quality Planning Supervisor
Delaware Department of Natural Resources and Environmental Control (DNREC)
Division of Air Quality
100 W. Water St., Suite 6A
Dover, DE 19904

RE: Joint Stakeholder Comments for the March 1, 2016 Public Workshop and Listening Session Regarding the Delaware Clean Power Plan

Dear Ms. Gray,

Thank you for this opportunity to comment as part of the March 1, 2016 Public Workshop and Listening Session Regarding the Delaware Clean Power Plan (CPP). Our comments focus on the adoption of a voluntary renewable energy set-aside provision in Delaware, under the Regional Greenhouse Gas Initiative (RGGI) and as an element of Delaware's plan to comply with the CPP.

The RGGI Model Rule includes an optional voluntary renewable energy market set-aside provision, in which the regulatory agency allocates a certain number of tons from the CO_2 Budget to the voluntary renewable energy market set-aside account for each control period, based on the voluntary renewable energy purchases in the state during the period that represents renewable energy generation in one or more participating states.[1] Delaware is the only RGGI state that did not include a voluntary renewable energy set-aside provision in its regulation.[2]

1. **A voluntary renewable energy set-aside would recognize the value of voluntary action in Delaware.**

Currently, Green-e®, the leading independent certification program for voluntary renewable electricity products in North America, cannot certify voluntary sales of renewable energy from within RGGI or Delaware to customers in Delaware, due to Delaware's lack of a set-aside.[3] This is because, without this mechanism, a cap on emissions from the power sector limits the ability of voluntary renewable producers to make claims about the energy they produce.

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[1] See Section XX-5.3(j) of the RGGI Model Rule, revised 12/23/13. Available online at: http://www.rggi.org/docs/ProgramReview/_FinalProgramReviewMaterials/Model_Rule_FINAL.pdf.

[2] See *RGGI State Set-Aside Provisions for Voluntary Renewable Energy (VRE)*, Draft August 21, 2009, http://www3.epa.gov/greenpower/documents/events/rggi_status_table.pdf.

[3] Green-e Energy is a program of the Center for Resource Solutions (CRS), a 501(c)(3) nonprofit organization. In 2014, Green-e Energy certified retail sales of 38 million megawatt-hours (MWh), representing over 1% of the total U.S. electricity mix, or enough to power nearly a third of U.S. households for a month. In 2014, there were over 836,000 retail purchasers of Green-e certified renewable energy, including 50,000 businesses. Stakeholder-driven standards supported by rigorous verification audits and semiannual reviews of marketing materials ensure robust customer disclosure and are pillars of Green-e Certification. Through these audits and reviews, CRS is able to provide independent third-party certification of renewable energy products. Green-e program documents, including the standards, Code of Conduct, and the annual verification report, are available at www.green-e.org.

Under an emissions cap, renewable energy generation reduces emissions from the sector, but does not affect the level of allowed emissions—the cap. As a result, the emissions reductions from renewable energy generation driven by voluntary renewable energy purchases can be reversed if those actions are not taken into account. Emissions cannot exceed the cap and emissions reduced below the cap due to renewable energy can be made up elsewhere—i.e. renewable energy simply frees up room under the cap for more emissions. So the effect of the cap is to make avoided grid emissions associated with this renewable energy equal to zero, and to make it easier for regulated entities to comply.

For voluntary buyers and investors in renewable energy, it is important that their generation has some effect on emissions. An allowance set-aside for voluntary renewable energy does just that, and it effectively restores the avoided emissions value of voluntary renewable energy. Since Green-e sets the standard for the voluntary market, based on stakeholder-driven criteria, a set-aside mechanism or similar allowance retirement mechanism is required for all certified voluntary sales in a capped region in the U.S. in order to meet consumer expectations.

2. **A voluntary renewable energy set-aside can create more renewable energy and reduce emissions.**

Beyond the ability to make claims about benefits of voluntary renewable energy, a cap on emissions from the power sector also affects voluntary demand for and investment in renewable energy.

Companies and individuals that purchase and invest in renewable energy voluntarily do so in order to take steps beyond actions and outcomes attributable to state or federal policy. These voluntary market participants seek to go beyond what an RPS or cap-and-trade program, for example, might require and in this way make a difference due to their investment. This difference is often referred to as "regulatory surplus."

However, where renewable energy sold into the voluntary market does not have this effect, and instead only serves to help regulated entities comply with existing regulatory requirements, this production could not be considered surplus and the motivation, the demand, for voluntary purchases would be lost.

Where voluntary demand for renewable energy is limited, by extension, so is the overall development of renewable energy and associated emissions reductions. Regulatory surplus is critical to sustaining clear voluntary claims and has been very helpful in the RGGI region in sustaining voluntary investment in renewable energy beyond what is already required.

A voluntary renewable energy set-aside preserves regulatory surplus for voluntary renewable energy by lowering the emissions cap and explicitly recognizing those emissions reductions as incremental to what would otherwise be achieved due to the cap. In so doing, a set-aside can motivate private capital to produce voluntary renewable energy generation in excess of state mandates.

3. **A voluntary renewable energy set-aside would remove a barrier to investment in Delaware.**

At this time, because of its lack of a voluntary renewable energy set-aside, there is no Green-e voluntary market for Delaware renewable energy generation in the state, or for RGGI renewable energy generation to be sold into Delaware. This means that voluntary buyers in Delaware have to get their certified renewable energy from outside of the RGGI region. In 2014, Green-e certified over 216,000

MWh in sales to over 1,300 retail customers located in Delaware. This shows strong demand for voluntary renewable energy in the state.[4]

Adoption of a voluntary renewable energy set-aside in Delaware would allow for this demand to be met by resources in Delaware and RGGI—allowing your state the opportunity to capture the private investment dollars that are currently going elsewhere. In other words, the set-aside removes a significant barrier to investment and the development of renewable energy in Delaware beyond that mandated by the RPS, and this could lead to increased revenue from voluntary purchasers for Delaware generation.

Thank you for your consideration of our comments. Sincerely,

Acadia Center
Center for Resource Solutions
CLF
Environment America
Natural Resources Council of Maine
Natural Resources Defense Council
Pace Energy and Climate Center
Sierra Club
Union of Concerned Scientists

[4] Green-e certifies a majority, but not the entirety of the voluntary market, which means that Green-e certified sales information for Delaware represent a conservative estimate of voluntary activity in the state.

Appendix

Additional Resources

- *Renewable Energy in the EPA Clean Power Plan. Parts 1 and 2: Introduction to Emission Rate Credits and Interactions With and Impacts on RECs and Renewable Energy Markets*, October 16, 2015, http://resource-solutions.org/site/wp-content/uploads/2015/10/Renewable-Energy-In-the-EPA-CPP-1.pdf and http://resource-solutions.org/site/wp-content/uploads/2015/10/Renewable-Energy-In-the-EPA-CPP-2.pdf.
- *RGGI State Set-Aside Provisions for Voluntary Renewable Energy (VRE)*, Draft August 21, 2009, http://www3.epa.gov/greenpower/documents/events/rggi_status_table.pdf
- *Support Voluntary Purchases of Clean, Safe, 21st Century Energy With an Off-the-Top Rule Under Cap and Trade*, May 18, 2009, http://resource-solutions.org/site/wp-content/uploads/2015/08/CT-Policy-Brief.pdf
- *Implications of Carbon Regulation for Green Power Markets*, April 2007, http://apps3.eere.energy.gov/greenpower/resources/pdfs/41076.pdf

Previous Comments on Voluntary Renewable Energy Set-aside Mechanisms

- *Joint Letter in Support for Voluntary Renewable Energy Set-Aside in the Proposed California Cap-and-Trade Program*, December 13, 2010, http://resource-solutions.org/site/wp-content/uploads/2015/08/Voluntary-Renewable-Set-Aside_12-13-10.pdf
- *Comments of Renewable Energy markets Association (REMA) on a Western Climate Initiative (WCI) paper*, February 19, 2010, http://www.renewablemarketers.org/pdf/file_111.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, http://resource-solutions.org/site/wp-content/uploads/2015/08/Senate_EPW__off_the_top_072309.pdf
- *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, http://resource-solutions.org/site/wp-content/uploads/2015/08/CRS_on_allocation_7_7_20101.pdf
- *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, http://resource-solutions.org/site/wp-content/uploads/2015/08/Center-for-Resource-Solutions-comment.pdf

CRS center for resource solutions

FACT SHEET

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

Published October 17, 2017

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_2) 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_2 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.[1] 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.[2] 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.[3] Other reports show that corporate buyers invested in nearly six gigawatts (GW) of new renewable energy capacity in the past three years alone.[4] 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.[5]

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_2 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_2 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.

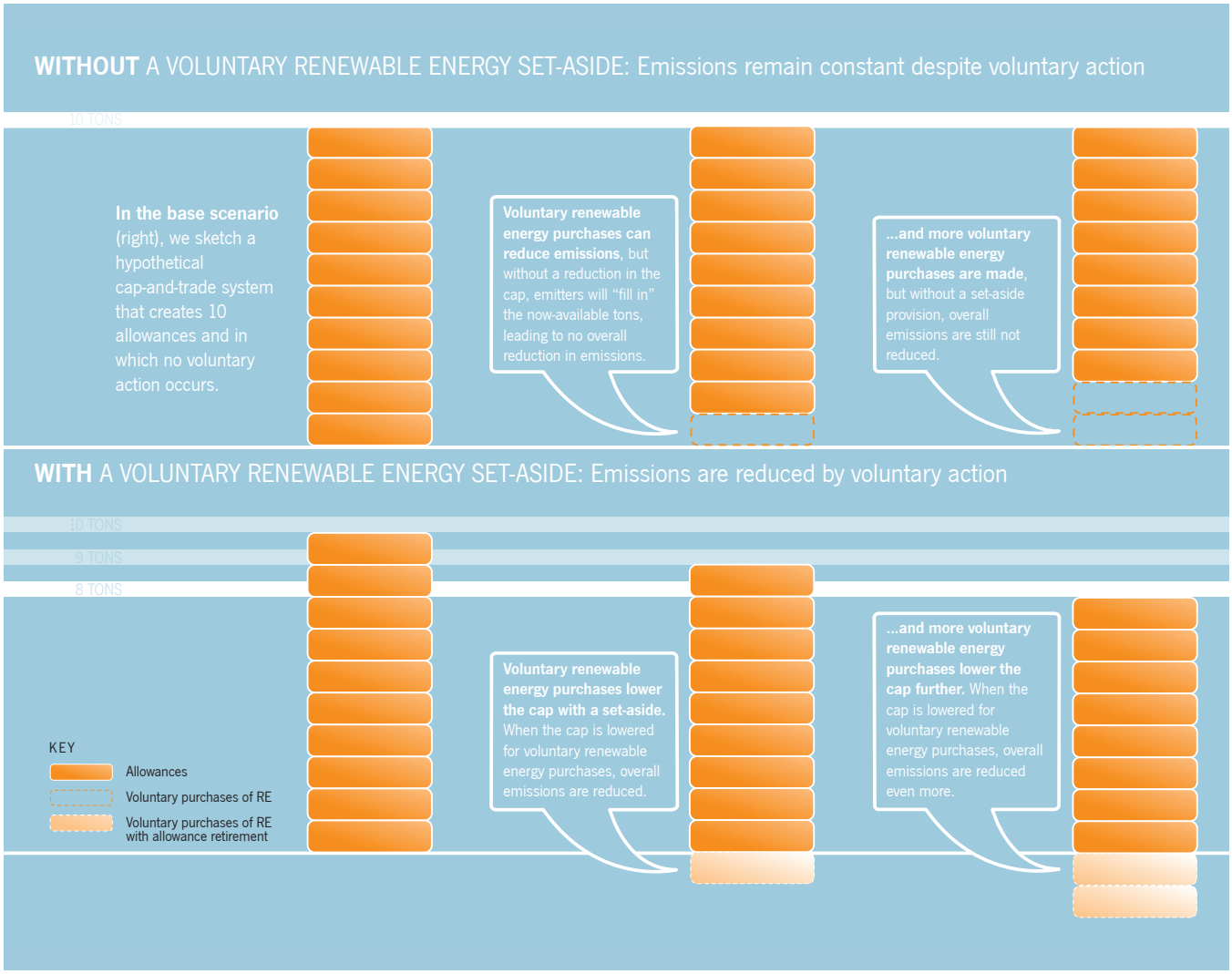
Voluntary renewable energy set-asides have already been implemented in California and the Regional Greenhouse Gas Initiative (RGGI).[6]

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.[7] 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).[8]

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/. Also see NREL's market analysis at 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/.

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/.

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

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.