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TO: Western Climate Initiative Partners

FR: Chris Busch, Center for Resource Solutions

RE: **Comments on, “Voluntary Renewable Energy Market: Issues and Draft Recommendations,” (January 14, 2010)**

DT: 19 February 2010

Thank you to the Western Climate Initiative (WCI) for giving attention to the topic of Voluntary Renewable Energy (VRE) markets and for the substantial effort that went in to development of your paper “Voluntary Renewable Energy Market: Issues and Draft Recommendations,” (January 14, 2010). Thank you, too, for considering our views as you formulate your final recommendations. The Center for Resource Solutions has significant expertise on this topic. In cooperation with the Union of Concerned Scientists, we led the movement in the Regional Greenhouse Gas Initiative for inclusion of a VRE set aside approach in that program’s model rule. Moreover, the Center for Resource Solutions’ Green-e Energy program is the nation’s leading voluntary certification program for renewable energy.

We are in agreement with and support the comments of the Western Climate Advocates Network and the Renewable Energy Markets Association, which are supportive of a VRE Set Aside. Beyond the WCI context, broad coalitions of clean energy industry stakeholders and public interest nonprofits have also come together to support a VRE set aside, for example in the California debate as well as federally.¹

We wish to communicate these three main points.

1. ***We urge the Partners to adopt a uniform VRE Set Aside rule.*** Doing so would provide a boost to a growing sector of the economy. Any alternative would result in dampened VRE market growth. There is an appetite for avoiding carbon emissions through clean energy purchases, and it would be unfortunate for the citizenry of the WCI region if cap-and-trade design diverts this willingness to pay to uncapped geographic areas.
2. ***The final recommendations should recognize that the driver of the impressive VRE market growth has been large purchasers who have been motivated by the desire to show that they are making a difference in the effort to curb global warming.*** We review the claims of the 15 largest business purchasers from the US EPA’s Green Power

¹ For a letter to the California Air Resources Board, see:
http://www.resource-solutions.org/pub_pdfs/nonprofit%20and%20clean%20energy%20industry%20coalition.pdf

For a letter to the Senate Environment and Public Works Committee, see:
http://www.renewablemarketers.org/siteadmin/images/files/file_86.18

Partnership Program. We present data showing that these large purchasers are the ones that have been the critical drivers of market growth. And our review of their public presentation of these green power purchases shows that in every instance the climate benefits of the green power purchase are central. In 10 of 15 instances for these largest purchases, specific quantitative claims are made with respect to avoided carbon emissions.

3. ***We suggest that you revise your discussion of the economic implications of a VRE set aside to more clearly recognize the benefits, especially the lowered demand for allowances due to fossil fuel-based generation avoided due to VRE purchases resources.***
The jobs benefit of not undercutting a growing market also deserves highlighting.

Now some further discussion of these main points as well as other comments pertaining to the VRE paper and recommendations.

Adopt a Uniform Set Aside Rule

Clean energy market actors have experienced the disutility resulting from the lack of greater harmonization in RGGI. The reality is that for the firms operating in the VRE market space, harmonization is always preferable – all else being equal – because it decreases the transaction costs for clean energy firms operating in this market. This is acknowledged by the paper, which states: “A modest advantage of harmonization is that potential project developers would not have to keep track of eleven different sets of eligibility criteria when financing and developing projects in WCI jurisdiction.” This advantage is significant and not modest for those operating in this market space, as the comments of the Renewable Energy Markets Association indicate.

VRE market growth and claims about avoided carbon emissions

Larger purchasers who have been motivated by the desire to show that they are making a difference in the effort to curb global warming have driven the impressive VRE market growth of recent years. This is what those that operate in the VRE market have said loud and clear. We provide evidence of this below. Despite this, the document seems to question whether avoided carbon emissions have been an important factor: “VRE consumers may be motivated to support renewable energy due to any one of the various benefits renewable energy provides... If VRE consumers do not strongly prioritize reducing greenhouse gas emissions, then it is possible that the introduction of a cap-and-trade program may not have much impact on the VRE market.”

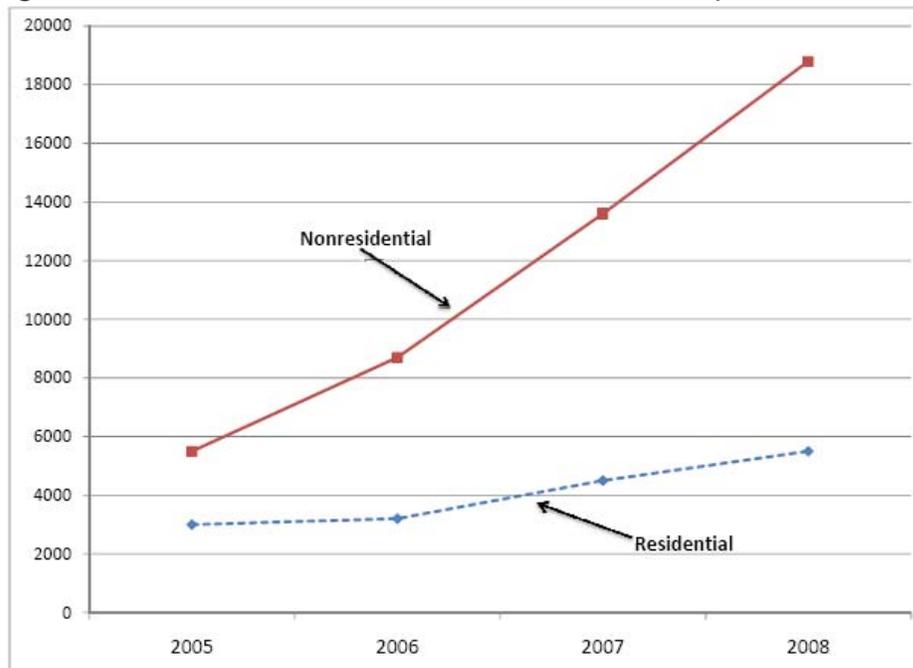
There is no doubt that a policy environment characterized by cap and trade without a VRE set aside would impose serious challenges on clean energy marketers and would hinder the market’s performance going forward. Guidance from the Association of State Attorneys General suggests that the type of generalized benefit claims that the document appears to urge as an approach to

overcoming these new hurdles could well be considered misleading and illegal.² In order to encourage the strongest possible consumer confidence in the value of VRE purchases, Green-e has adopted a policy of not recognizing VRE purchases from generation based in Delaware because it is the sole state in the Regional Greenhouse Gas Initiative that chose not to adopt a VRE set aside.³

To provide some concrete evidence on this question – the extent to which the desire to make carbon claims has been a crucial driver of the impressive market growth in recent years – we reviewed how the largest business purchasers of green power trumpeted their purchase. Our detailed findings are included as Appendix 1 to this letter. We do not consider the governmental or educational institutions included amongst the US EPA’s top Green Power Purchasers, but rather we choose to focus on business purchasers, as these are the largest single type of purchaser and also the ones most likely to be gun shy about being attacked for making unsubstantiated claims. Socially-responsible businesses have to be particularly careful about the claims they make.

The importance of larger, nonresidential purchasers to the growth in the VRE market is evident in data from the National Renewable Energy Laboratory data, which provide the basis for the following graphic.

Figure 1. Estimated Annual Green Power Sales, 2005-2008 (Millions of kWh)⁴



² National Association of Attorneys General. 1999. Environmental Marketing Guidelines for Electricity (December)

³ <http://www.resource-solutions.org/pressreleases/2008/120508-2.htm>

⁴ Bird, Lori, Claire Kreycik, and Barry Friedman. 2009. *Green Power Marketing in the United States: A Status Report*, National Renewable Energy Laboratory, Technical Report NREL/TP-6A2-46581 (September)

The above graphic clearly shows that nonresidential purchasers have driven the impressive market growth of recent years.

We have reviewed the claims of the 15 largest business purchasers from the US EPA's Green Power Partnership Program, which has provided encouragement and support for the VRE market for years. These largest purchasers are the ones that have been the critical drivers of market growth. The EPA states on its "Top 50" website: "Combined, these top 50 largest purchases amount to more than 13 billion kilowatt-hours annually, which represents more than 70 percent of the green power commitments made by all EPA Green Power Partners."⁵

Our review finds that in every instance the climate benefits of the green power purchase are central. In 10 of 15 instances, specific quantitative claims are made with respect to avoided carbon emissions. In no case is any other benefit emphasized more than making a difference in the effort to curb carbon emissions. Again, more details can be found in Appendix 1.

More clearly recognize the benefits of a VRE set aside

On the question of cost and allowance price implications, the WCI document gets at some of the relevant issues, but we urge consideration of demand-side effects and not only supply-side effects. An off the top policy will have effects on both demand for and supply of allowances, and it will be the cumulative, interactive effect on these that determines the effect on allowance prices. By backing down generation at fossil fuel-based generators, VRE purchases can lower the demand for allowances. Appendix 2 offers a figure that illustrates the interaction of supply of and demand for allowances.

An example of the problems that follow from extrapolating from isolated effects, instead of thinking more holistically, can be found on page 11. There the document states that: "[A] VRE set aside may also reduce the volume of allowances auctioned, and therefore total auction revenue." But later in the paragraph, the specter of higher allowances due to a VRE set aside is raised. If allowance prices are increased, then auctioning fewer could still bring in more revenue. The overall effect will depend on the relative magnitude of the supply and price changes. The line of thinking developed in this part of the paper also contrasts with recognition on page 4 that VRE could potentially lower the cost of the program by "eliminating the need for what may have otherwise been the most expensive mitigation measures necessary to meet the cap."

Other comments

We agree with the views of the Western Climate Advocates Network and the Renewable Energy Markets Association with respect to particular recommendations. Beyond the top level concern

⁵ <http://www.epa.gov/grnpower/toplists/top50.htm>

that the VRE set aside be harmonized across jurisdictions, we offer these thoughts on particular recommendations:

- We agree with the generator-based approach recommended for jurisdictional retirement responsibility.
- We support retirement of allowances and borrowing of allowances from a future time period and oppose lowering the per MWh retirement rate.
 - Lowering the per MWh retirement rate creates the same type of problems that no VRE set aside at all would create.
- We oppose time limits as unnecessary.
 - While one can imagine a set of circumstances that would obviate the need for a VRE set aside, it is difficult to conceive that this would occur before 2020.
- We oppose pre-determined limits on the size of the VRE set aside.

A problem with the discussion of the no intervention approach, Section 4.2, is that it seems to assume that those who wish to sell into the voluntary market will be able to acquire allowances, but this is not a foregone conclusion.

We note that significant work has already gone into the tracking systems needed to make operational a VRE set aside, and that these are continuing to evolve and improve.⁶

Finally, we must disagree with environmental attributes being labeled a “secondary attribute” of RECs (page 14). The implication is that RECs were developed principally as a tracking tool, which is not the case. The fact is that RECs were developed to enable the commoditization of claims to the benefits of renewable energy (for voluntary renewable claims as well as for an element of renewable electricity standards) in order to help overcome some of the barriers to greater clean energy development. Indeed, the entire premise of the VRE market is, and has always been that customers wish to support renewable power over fossil power and are willing to pay the price difference in exchange for the sole claiming rights to the environmental benefits of those renewable resources. This approach has been part of the national standard for VRE, and those environmental benefits have been enshrined in VRE contract, since the market began.

⁶ Environmental Tracking Network of North America, 2010 (February), *The Intersection Between Carbon, RECs, and Tracking: Accounting and Tracking the Carbon Attributes of Renewable Energy*

<http://www.etnna.org/images/PDFs/Intersection%20btwn%20Carbon%20RECs%20and%20Tracking.pdf>

Appendix 1

A case-by-case examination of how major business purchasers present their green power purchases.

<http://www.epa.gov/grnpower/toplists/top50.htm>

List dated January 5, 2010. Information accessed the week of February 15, 2010 for USEPA website and all internet links cited here.

1. Intel Corporation
2. Kohl's Department Stores
3. PepsiCo
4. Whole Foods Market
5. (City of Houston, TX)
6. Dell Inc.
7. The Pepsi Bottling Group, Inc.
8. Cisco Systems, Inc.
9. (Commonwealth of Pennsylvania)
10. Johnson & Johnson
11. (U.S. Air Force)
12. (City of Dallas, TX)
13. HSBC North America
14. U.S. Environmental Protection Agency
15. Wal-Mart Stores, Inc. / California and Texas Facilities
16. Starbucks
17. BNY Mellon
18. (City of Chicago, IL)
19. Kimberly-Clark Corporation
20. (University of Pennsylvania)
21. (U.S. Department of Energy)
22. (Los Angeles County Sanitation Districts)
23. DuPont Company
24. Wells Fargo

Intel Corporation

Intel presents green power purchases as one of their climate strategies, but is one of the few companies not to make explicit carbon claims. They frame their purchase this way: EPA estimates that Intel's REC purchase has the equivalent environmental impact of taking more than 185,000 passenger cars off the road each year, or avoiding the amount of electricity needed to power more than 130,000 average American homes annually.

<http://www.intel.com/pressroom/archive/releases/2008/20080128corp.htm>

Kohl's Department Stores

According to the USEPA, Kohl's Department Stores' green power purchase of 1,367,000 kWh is equivalent to avoiding the carbon dioxide emission for nearly 188,000 passenger vehicles per year or the amount of electricity needed to power nearly 128,000 average American homes annually.

<http://www.kohlscorporation.com/pressroom/PDFs/2010/GreenPowerRelease12509.pdf>

PepsiCo

Trumpets reduced greenhouse gas emissions using the Governor's words: "I commend Frito-Lay and the California Energy Commission for working hand-in-hand to build this innovative project," Governor Arnold Schwarzenegger said. "The plant will harness the power of Central Valley sunshine to reduce its natural gas use, air pollution and greenhouse gas emissions - all while helping us meet our renewable energy goals."

<http://www.pepsico.com/Purpose/Environment/News/Power-Of-The-Sun.html>

Whole Foods Market

The 2009 Whole Foods Market wind power purchase will help avoid up to 868 million pounds of carbon dioxide pollution. This has an environmental benefit that's similar to taking more than 72,000 cars off of the roads for a year, or planting nearly 3.6 million mature trees.

<http://wholefoodsmarket.com/pressroom/blog/2009/09/15/whole-foods-market%C2%AE-helps-fund-new-wind-farm-makes-landmark-purchase-of-wind-energy-credits/>

Dell Inc.

Dell is now powering 100 percent of its 2.1 million square-foot global headquarters campus, home to more than 10,000 employees, with 100 percent green power, the latest step in meeting the company's 2008 carbon neutral commitment.

http://www.dell.com/content/topics/global.aspx/corp/pressoffice/en/2008/2008_04_02_rr_000?c=us&l=en&s=corp

The Pepsi Bottling Group, Inc.

Based on national average emissions rates, the U.S. EPA estimates that the bottlers' aggregate purchase of more than 629 million kWh is the equivalent amount of electricity needed to power nearly 39,000 average American households annually. Additionally, the combined green power purchase of these three individual companies is equivalent to avoiding the carbon dioxide (CO₂) emissions of nearly 71,000 passenger cars each year.

<http://www.pbg.com/environmental/index.html>

Cisco Systems, Inc.

Cisco Green Power Purchases

	FY07	FY08	FY09 (Projected)
KWh green power	112,000,000	342,000,000	484,000,000
mTCO ₂ e	68,500	221,000	310,000
Equivalent number of passenger cars	12,500	40,500	57,000
Equivalent per capita usage in U.S. (number of people)	2900	9400	13,100

<http://www.cisco.com/web/about/ac227/csr2008/the-environment/sustainable-company-operations/mitigating-climate-change/reducing-ghg-emissions-operations.html>

Johnson & Johnson

Johnson & Johnson began setting environmental goals in 1987 and in 1999 established a goal to reduce CO₂ emissions from facilities worldwide by 7 percent in absolute terms by 2010. By improving energy efficiency, establishing on-site cogeneration and renewable-energy projects, using green power and purchasing carbon offsets, the company is on target to meet that goal.

<http://www.jnj.com/connect/caring/patient-stories/generating-green-power>

HSBC North America

HSBC became carbon neutral in 2005, which means our worldwide operations contribute zero net carbon dioxide into the atmosphere. To achieve our carbon neutrality, we take four key steps:
Measure and report our carbon footprint
Reduce energy consumption and business travel in line with targets
Purchase renewable energy in countries where this is possible
Offset our remaining CO₂ emissions by purchasing verified emissions reductions from high quality projects.

<http://www.hsbc.com/1/2/sustainability/protecting-the-environment/carbon-neutrality>

Wal-Mart Stores, Inc. / California and Texas Facilities

Texas wind purchase

We will avoid producing more than 139,000 metric tons of carbon dioxide (CO₂) emissions annually, which is equal to the amount of greenhouse gases that 25,000 cars or 18,000 homes release each year.

<http://walmartstores.com/Sustainability/8810.aspx>

California solar installation:

Avoid producing more than 22,500 metric tons of carbon dioxide emissions per year –equivalent to taking more than 4,000 cars off the road per year*

<http://walmartstores.com/Sustainability/9090.aspx>

Starbucks

Starbucks has been implementing a climate change strategy since 2004, focusing on renewable energy, energy conservation, and collaboration and advocacy. In fiscal 2008, we conducted our second carbon footprint study to see if our biggest impacts, as measured in 2003, remained the same – and indeed they have. So we'll continue to focus our efforts in these three areas...

We purchased renewable energy credits equal to 20 percent of the electricity for company-operated stores in the U.S. and Canada. This is the equivalent of the electricity used by more than 18,000 homes each year in the U.S. Learn more about our efforts to use renewable energy.

<http://www.starbucks.com/sharedplanet/customGR.aspx>

<http://www.starbucks.com/sharedplanet/environmentalInternal.aspx?story=energyConservation>

BNY Mellon

29,621 metric tons of CO₂ avoided through renewable energy purchases.

<http://www.bnymellon.com/about/environment.html>

<http://www.bnymellon.com/environment/greenemissions.pdf>

Kimberly-Clark Corporation

According to the U.S. EPA, Kimberly-Clark Corporation's production of over 220 million kWh of green power is equivalent to avoiding the carbon dioxide (CO₂) emissions of more than 29,000 passenger vehicles per year, or is the equivalent amount of electricity needed to power more than 21,000 average American homes annually.

<http://investor.kimberly-clark.com/releasedetail.cfm?releaseid=361706>

DuPont Company

Cites renewable energy as part of overall sustainability and climate strategy, but does not make explicit reduction claims here:

http://www2.dupont.com/Sustainability/en_US/index.html

Wells Fargo

Wells Fargo is also installing solar photovoltaic (PV) systems on 10 banking stores in Denver. Combined the systems will generate about 330,000 kilowatts of clean, renewable energy each year, or the equivalent of reducing more than 500,000 pounds of carbon dioxide emissions annually. Greenhouse gas emissions trap the sun's energy and cause rising surface temperatures. Wells Fargo's emissions primarily come from indirect emissions from electricity purchased through utilities. As power sources become cleaner and as the Company uses less electricity its emissions will go down.

https://www.wellsfargo.com/about/csr/ea/news/2009/10-14-09_ghg_goal

Appendix 2

In this appendix, we demonstrate the importance of considering demand side effects on the market for allowances through a simple economic graph. The graph shows that the price of an allowance (PRICE) under a cap-and-trade program is the same in both cases, with and without VRE set aside. This would be the particular outcome of a scenario that produces a reduction in demand exactly commensurate with the reduction in supply. This is not a prediction. Other results are possible and depend on the extent to which the VRE market survives in the face of an inability to state that VRE purchases make a difference in the fight against global warming. We use the following notation:

S_0 = the initial supply of allowances, before accounting for VRE purchases

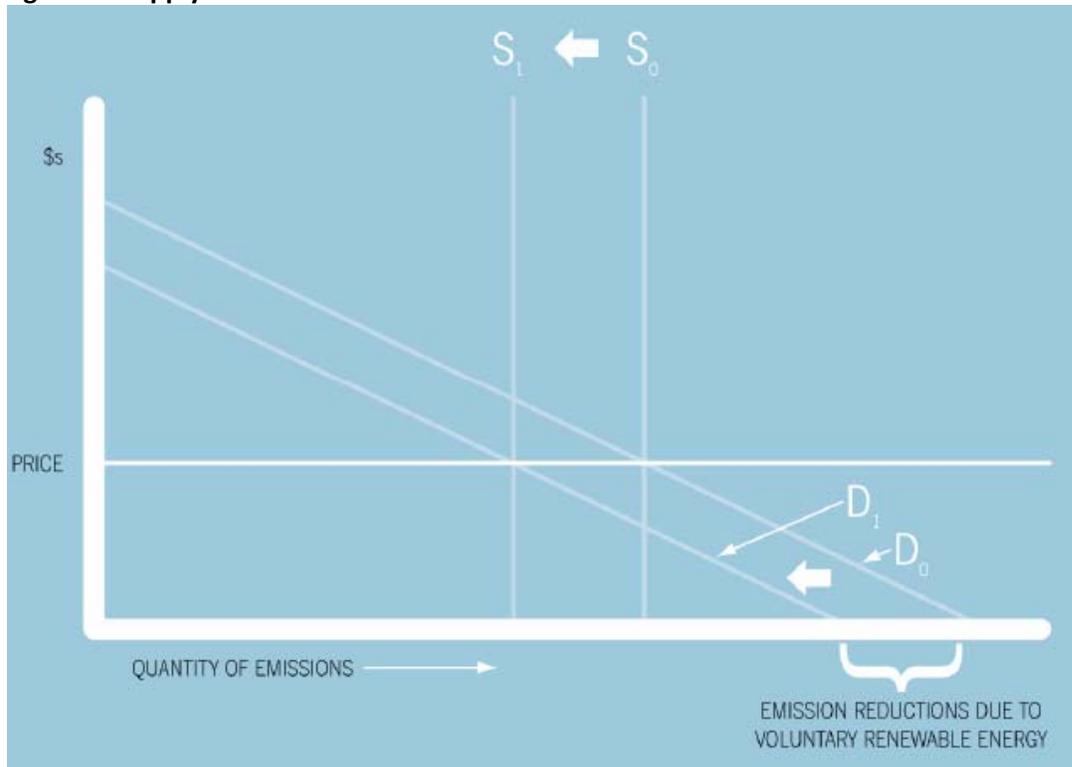
S_1 = the supply of allowances, after adjustment via the VRE set aside

D_0 = the initial demand for allowances without reductions from VRE purchases

D_1 = the demand for allowances with reductions from VRE purchases

PRICE = price of allowances

Figure 2. Supply and Demand Interactions – A Scenario that Leaves Allowance Prices Unchanged



A few other notes on the graphical analysis: The x-axis reflects the quantity of emissions (i.e. tons of carbon dioxide equivalent) and the supply curve is vertical (in economic terms, it is inelastic) because the analysis is static and in a given year a certain number of allowances will be made available. In reality, with banking of allowances, the amount of allowances available in any particular year could change. Such a simplifying assumption is necessary for a graphical analysis.

The demand curve is reflective of the price capped entities would be willing to pay for permits at different levels of emissions, which in turn will be a function of the amount of reductions implied at different emission levels and the marginal abatement cost curve that reflects the cost of the marginal ton reduced. The demand curve hits zero at business as usual emissions (no willingness to pay because no reductions are being required of polluters). The demand curve shifts left in the graph after counting for reduced emissions due to VRE purchases.