



CRS

center for
resource
solutions

June 12, 2009

Claudia Orlando
California Air Resources Board
1001 "I" Street
Sacramento, CA 95812

Via email: ccworkshops@arb.ca.gov

Dear Ms. Orlando,

CRS is in agreement with and supports the comments calling for the set aside and retirement of allowances for voluntary renewable energy purchases (also known as an off-the-top approach to voluntary renewable energy purchases) submitted separately by the coalition of public interest nonprofit groups and renewable energy industry stakeholders. This impressive coalition deserves some unpacking and illuminating. Endorsers of the set-aside and retirement approach are not limited to but include:

- An array of **nonprofit public interest groups** including environmental, public health, science and faith groups as well as a publicly owned utility.
- A broad collection of **renewable energy industry stakeholders**, including major associations of solar energy and wind energy firms as well as the broad Renewable Energy Marketers Association that includes both types.

We are also in agreement with the supportive comments of the San Francisco Carbon Coalition.

With this letter we wish to expand on two particular points discussed in the coalition letter.

1. **Allowance price neutrality**. We expect that an off-the-top approach to voluntary renewable energy will reduce both the supply of and demand for allowances, meaning the price of allowances will be mostly unaffected.
2. **Implications for corporate purchases of clean energy**. Corporate purchases have been an important driver of the voluntary market, and these savvy consumers will pull back from voluntary investments in clean energy if they are not able to make clear, irrefutable claims about making an impact in the effort to fight global warming. As an appendix to this letter, we offer a list of major voluntary purchasers of green power.

Allowance price neutrality and other environmental and economic benefits

First we observe that allowance (tradable permit) prices are not a measure of the overall societal impact of an off-the-top approach, so when we talk about cost neutrality in terms of allowances prices this actually implies benefits to society due to the well known benefits of clean energy development: (1) decreases in air pollutants besides those that cause global warming that produce related improvements in public health, decreases in health care costs, improvements in productivity and student performance, (2) increased energy security due to increased use of free domestic fuels like the sun and the wind and decreased reliance on imported fossil fuels, which

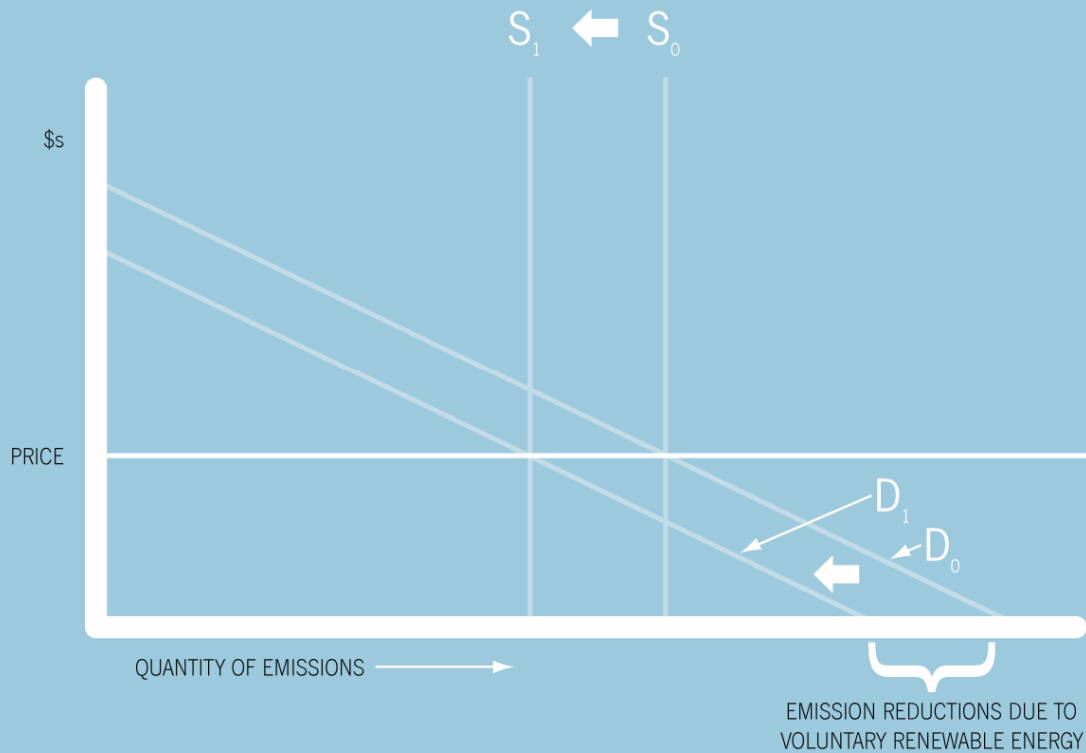
often impose price spikes and induce increased military spending to protect international supply routes, and (3) local economic development and job creation. These benefits are not reflected in our graphical analysis, which is narrowly focused on greenhouse gas emission and allowance price effects.

Furthermore, the increased clean energy development that an off-the-top approach would produce would put the state in a better position to meet our more ambitious long term goals. A greater stock of clean energy generation capacity will lower long term allowances prices.

The reasoning behind our expectation that allowance prices will be mostly unaffected is not complicated, though it requires the recognition that an off-the-top approach affects both the supply of and the demand for allowances. Here are the dynamics at work. We use the example of someone installing rooftop solar panels on their home to stand in for all new voluntary renewable energy purchases. When a homeowner chooses to install rooftop solar panels, the emissions that the household would have caused from its electricity consumption is reduced by the amount of electricity produced by the solar array. The emission reductions caused by the investment in solar energy means that fewer reductions are need than would be the case otherwise. Put differently, capped entities are faced with finding fewer reductions than would be the case if the investment in solar energy had not been made. This reduces the demand for allowances at the same time that the off-the-top approach reduces their supply.

Below is a graphical representation of the economic dynamics.

OFF-THE-TOP APPROACH LEAVES ALLOWANCE PRICES UNCHANGED



Definitions

S_0 = the initial supply of allowances, before accounting for voluntary renewables

S_1 = the supply of allowances, after the off-the-top adjustment

D_0 = the initial demand for allowances without reductions from voluntary renewables

D_1 = the demand for allowances with reductions from voluntary renewables

PRICE = price of allowances

Some notes on the graphical analysis

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 off-the-top after accounting for reduced demand due to additional voluntary renewable energy purchases.

The supply curve is vertical (in economic terms, it is inelastic) because the analysis is static and the x-axis reflects the quantity of emissions (i.e. tons of carbon dioxide equivalent). Put differently, the analysis considers a single time period in which the supply of allowances is given. 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). One caveat has to do with the reason why we say that the reduction in demand will be roughly commensurate with the reduction in supply. In some instances, without an off-the-top approach, even though the voluntary renewable energy action would produce no additional emission reductions, the action might occur anyway. While we recognize this possibility, our experience and knowledge of the voluntary market suggests that there would likely be a very significant drop off in voluntary action if cap-and-trade proceeds without an off-the-top approach. In part this is due to the importance of sophisticated corporate buyers that have largely driven the market. Below we provide a list of the buyers that comprise this important segment of the voluntary renewable energy market below.

In conclusion, we strongly support the set aside and retirement of allowances for voluntary renewable energy purchases.

Thank you for considering our views.

Sincerely,

A handwritten signature in black ink that reads "Chris Busch". The signature is written in a cursive, flowing style.

Chris Busch
CRS Policy Director

Appendix: 50 Largest Purchasers of Green Power

The following is data taken from the US EPA Green Power Partnership Webpage that provides information about voluntary renewable energy purchases in the US. (<http://www.epa.gov/grnpower/toplists/top50.htm>)

The top 50 largest green power purchases combined amount to nearly 11.8 billion kilowatt-hours annually, which represents more than 70 percent of the green power commitments made by all EPA Green Power Partners.

We list the purchaser and their annual green power usage (kWh).¹

The rankings are based on data received as of April 7, 2009.

Intel Corporation	1,301,200,000
PepsiCo	1,144,773,154
Kohl's Department Stores	600,990,000
Dell Inc.	553,708,000
Whole Foods Market	526,995,000
The Pepsi Bottling Group, Inc.	470,216,838
Johnson & Johnson	434,854,733
U.S. Air Force	426,233,001
Cisco Systems, Inc.	400,996,000
City of Houston, TX	350,400,000
City of Dallas, TX	333,659,840
Commonwealth of Pennsylvania	300,000,000
HSBC North America	300,000,000
U.S. Environmental Protection Agency	285,000,000
Wal-Mart Stores, Inc. / California and Texas Facilities	243,328,000
Kimberly-Clark Corporation	223,000,000
City of Chicago, IL	214,635,000
Starbucks	211,291,000
University of Pennsylvania	192,727,000
DuPont Company	180,075,000
Wells Fargo & Company	175,000,000
Los Angeles County Sanitation Districts	171,144,000
U.S. Department of Energy	157,964,000
PepsiAmericas, Inc.	157,062,875
Vail Resorts, Inc.	151,311,000
New York University	132,000,000
Staples	127,322,000
Bloomberg LP	116,786,658

¹ Purchase figures are based on annualized Partner contract amounts (kilowatt-hours), not calendar year totals.

The World Bank Group	114,735,000
Mohawk Fine Papers Inc.	110,000,000
U.S. Department of Veterans Affairs	110,000,000
Lowe's	101,000,000
The Dannon Company, Inc.	100,000,000
State of Connecticut	98,201,876
WhiteWave Foods Company	98,012,000
Safeway Inc.	93,000,000
State of Wisconsin	92,400,000
Sprint Nextel	87,600,000
Pennsylvania State University	83,600,000
Sony DADC	83,365,000
Coldwater Creek Inc	81,252,000
The Tower Companies	79,000,000
U.S. General Services Administration / Region 2	78,930,000
Motorola, Inc.	78,364,000
ING	75,449,000
Advanced Micro Devices / Austin, TX Facilities	73,680,000
Washington Suburban Sanitary Commission	70,000,000
City of San Diego, CA	69,043,000
Oregon State University	66,680,400
California State University System	66,189,000