



Clean Energy, Dirty Air

a policy coordination problem between green electricity programs and cap-and-trade pollution programs

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Outline

- The policy coordination problem
- Is this headline news?
- Emission reductions accounting
- Two markets and two programs
- Proposed solutions



The policy coordination problem

the problem:

- for cap-and-trade programs (SO_2 , NO_x , C?), green electricity generation (either voluntary or for Renewable Portfolio Standard compliance) does not alter the cap

the question:

- do utility green electricity programs result in emissions reductions?
- if not, how can they be altered so that they do?



Is this headline news?

Implied environmental benefit of green electricity

- green electricity program names
 - PGE: Clean Wind, Healthy Habitat, Green Source
 - LADWP: Green Power for a Green L.A.

What claims can be made?

- FTC Guides for the use of environmental marketing claims
- NAAG Environmental marketing guidelines for electricity

Why look at voluntary programs?

- small % of total electricity
- cleaner accounting than for RPS/RECs



The RPS case - compared to voluntary programs

- what states think they're getting with an RPS*
 1. economic development
 - 2. GHG emissions reduction**
 3. diversification of supply
 4. more predictable generation costs
 5. far fewer undesirable externalities
- RECs show RPS compliance, but carry no capped attributes

*Rabe (2006). Race to the top: the expanding role of U.S. state renewable portfolio standards

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Emissions accounting

How do we know if reductions were delivered?

if the # of **allowances on account after settlement:**

allocated

+ carried over (banking for SO₂ only)

+ (bought – sold)

– deducted

is greater than the # **expected to be retired** based on green electricity sales.



How many allowances should be retired?

actual generation (which plants?)

divided by

actual allowances used (emissions monitoring)

equals

generation/allowance

green electricity MWh sales

divided by

generation/allowance

equals

of allowances expected to be retired



Portland General Electric and the SO₂ market

- 1.975GW generation capacity
(1.466GW coal, 0.509GW hydro)

- PGE's claims:

Renewable Power Choices for Your Home



You have the power to make a difference by selecting a renewable power option that helps reduce air pollution and protects our

natural resources.

- Do green power purchases reduce SO₂ emissions?

http://www.portlandgeneral.com/home/products/renewable_power/default.asp?bhcp=1 (accessed



PGE and the SO₂ market

(all generation)

Year	Net Generation (MWh)	Gen/ Allowance (MWh/ton)	Green Energy Sales (MWh)	Allowances expected to be retired	Allowances on account after settlement
2001	12,967,477	827			34
2002					
2003					
2004					
2005					



PGE and the SO₂ market (only coal)

Year	Net Generation (MWh)	Gen/ Allowance (MWh/ton)	Green Energy Sales (MWh)	Allowances expected to be retired	Allowances on account after settlement
2001	5,951,605	380			34
2002					
2003					
2004					
2005					



LADWP and the L.A. NO_x market (RECLAIM)

- Los Angeles Department of Water & Power
- 4.33GW in-basin NG generation capacity (2005)
- LADWP's claims* :

The Green Power for a Green LA Program gives us all the opportunity to support cleaner energy resources for Los Angeles. By signing up, you can actually help bring more renewable power to LA - electricity that is cleaner than fossil fuels and nuclear energy. Green Power means cleaner air and a greener Los Angeles for us and for our children.



- Do green power purchases reduce NO_x emissions?

* <http://www.ladwp.com/ladwp/cms/ladwp000851.jsp> (accessed 3/5/08)



LADWP and the L.A. NO_x market (RECLAIM)

Year	Net Generation (MWh)	Gen/ Allowance (MWh/ton)	Green Energy Sales (MWh)	Allowances expected to be retired	Allowances on account after settlement
2000					
2001					
2002					
2003					
2004					



Meanwhile, on the way...

- C cap-and-trade (?)
- more states (and possibly a national) RPS

Proposed solutions:

- 3rd party emissions allowance 'trust fund'
 - utilities required to deposit allowances based on sales
- allowance retirement mechanism in cap-and-trade rules
- tie RPS compliance to emissions allowances (re-bundle attributes with RECs)



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