



Environmental and Energy Study Institute

Carol Werner, Executive Director

June 27, 2007

To: The Honorable John D. Dingell
Chairman, House Committee on Energy and Commerce

The Honorable Rick Boucher
Chairman, Subcommittee on Energy and Air Quality

Regarding: EESI Recommendations for Federal Electric Portfolio Standards

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The Environmental and Energy Study Institute appreciates the opportunity to respond to your May 24, 2007 letter requesting input on legislative proposals for Congress to enact federal “portfolio standards” that would require retail electricity providers to obtain a certain percentage of the power that they deliver from designated energy sources, such as renewable energy and energy efficiency. EESI’s views on program design issues are given below, in a point-by-point response to your letter.

1. Purpose of Portfolio Standards Proposals

a. Adopting one or more Federal “portfolio standard” requirements is advisable for several reasons:

- avoid free-riders

The lack of a national portfolio means that states with portfolio standards are bearing the cost to produce clean energy, with reduced emissions of air pollution such as mercury, SO_x and NO_x, while adjacent states enjoy the benefits without sharing the costs, a classic “free-rider” problem.

- prevent predatory trade-offs

In some cases lower-cost renewable energy in a state with a portfolio standard is sold to another state with a portfolio standard, rather than being sold in-state. This means that the first state must buy higher-cost renewables to satisfy its portfolio, creating inequity between states and introducing economic inefficiencies.

Nevada and New Mexico’s RPS mandates, for example, permit geothermal power. But Arizona’s RPS mandate excludes it. This inconsistency gives rise to a scenario in which Arizona’s baseload geothermal generation can be exported to neighboring states, while Arizona’s

regulated utilities must either purchase more expensive solar, wind and biomass to meet the state's mandate or accept non-attainment of the RPS goal.¹

- create a more consistent price for renewable energy credits, which would establish a more predictable financing environment for investors.

Spot renewable energy certificate (REC) prices to vary substantially across regions and across renewable technologies. For example, according to Lawrence Berkeley Laboratory, the wholesale price for wind-derived RECs ranges anywhere from \$1.75 per MWh in California up to \$35 per MWh in the Northeast. The current patchwork of state RPS compliance schemes is already creating winners and losers among regulated utilities solely on the basis of their geographical location. A national RPS would help establish a uniform REC trading market allowing renewable generators to sell their RECs to retail suppliers anywhere in the nation, and give regulated utilities the flexibility to invest in renewable resources wherever their development is most cost competitive.

b. It is appropriate for the Government to impose generation source conditions or energy savings requirements on load-serving utilities because it is in the national interest to reduce greenhouse gas emissions. In 1992 the United States signed and ratified the United Nations Framework Convention on Climate Change (UNFCCC) -- to reduce global warming and to cope with whatever temperature increases are inevitable. States and local governments (and private companies) have been taking action on climate change and energy portfolio standards, putting a patchwork of policies in place across the nation. They have been calling for national policy to provide greater certainty and consistency. A national policy is needed.

c. The specific purpose of a Federal portfolio standard is to lower net emissions of criteria pollutants, to lower net emissions of carbon dioxide and other greenhouse gases, to reduce the burden on overstressed transmission lines and improve the resilience of the electricity grid by promoting local, distributed generation, to provide cost certainty to consumers, to provide a buffer against high price spikes of natural gas, to reduce reliance on foreign sources of energy, and to spur job creation in the United States. Portfolio standards can also reduce the price of natural gas by offsetting demand for it thereby relieving market pressure on price and improving its affordability as an industrial feedstock and for home heating purposes, etc. Finally, portfolio standards can help drive technology development that benefits the public good but would not have happened without the creation of markets by the standard.

d. A portfolio standard remains necessary and advisable because a greenhouse standard alone does not address all of the purposes for implementing a portfolio standard as enumerated in (1c) above. A portfolio approach seeks to encourage competition among renewable developers to meet the targets in a least-cost fashion. It should be seen as a complementary measure which could both be implemented more quickly than an economy-wide mandate and should indeed facilitate such a measure.

e. Analysis of portfolio standards:

¹ Renewing America: The Case for Federal Leadership on a National Renewable Portfolio Standard (RPS). Christopher Cooper and Dr. Benjamin Sovacool. Network For New Energy Choices. Report No. 01-07 • June, 2007 http://www.newenergychoices.org/dev/uploads/RPS%20Report_Cooper_Sovacool_FINAL_HILL.pdf

We recommend the following five resources, which are referred to below in the answers to (i)-(vi)

[A] Renewing America: The Case for Federal Leadership on a National Renewable Portfolio Standard (RPS)

Christopher Cooper, Senior Policy Director

Dr. Benjamin Sovacool, Senior Research Fellow

Network For New Energy Choices. Report No. 01-07 • June, 2007

http://www.newenergychoices.org/dev/uploads/RPS%20Report_Cooper_Sovacool_FINAL_HILL.pdf

[B] Impacts of a 15-Percent Renewable Portfolio Standard

Energy Information Administration (EIA). U.S. Department of Energy

June 11, 2007.

[http://www.eia.doe.gov/oiaf/servicerpt/prps/pdf/sroiaf\(2007\)03.pdf](http://www.eia.doe.gov/oiaf/servicerpt/prps/pdf/sroiaf(2007)03.pdf)

[C] Clean Energy Blueprint: A Smarter National Energy Policy for Today and the Future

Steven Clemmer, Deborah Donovan, Alan Noguee, and Jeff Deyette.

Union of Concerned Scientists, 2001.

<http://www.ucsusa.org/publications/>

[D] Renewables Portfolio Standards: A Factual Introduction to Experience from the United States

Ryan Wisner, Christopher Namovicz, Mark Gielecki, Robert Smith

Lawrence Berkeley National Laboratory

LBNL-62569. April 2007

<http://eetd.lbl.gov/ea/emp/reports/62569.pdf>

[E] Energy Policy Recommendations to the President and the 110th Congress

National Commission on Energy Policy. April 2007

http://energycommission.org/files/contentFiles/NCEP_Recommendations_April_2007_4656f9759c345.pdf

(i) economic costs [A], [B], [C], [D]

(ii) greenhouse gas reduction [A], [B], [C],

(iii) electric reliability, security, grid management [A], [C],

(iv) jobs and economic development [A], [C],

(v) utility capital investment [A],

(vi) other factors [A], [C], [D], [E]

2. Portfolio Inclusions and Exclusions

a. Energy sources should be as clean and environmentally-sustainable as possible on a lifecycle basis. Net emissions of carbon should be as close to zero as possible. The sources should not endanger national security. The standard should include only renewable energy sources.

b. The portfolio standard should include all renewable energy sources (wind, concentrating solar power, solar hot water, solar photovoltaic, biomass, geothermal, incremental hydropower, wave,

tidal, current and hydrokinetic hydropower, landfill methane). The standard should exclude all fossil fuels because they are non-renewable, i.e., depletable, and are sources of greenhouse gas emissions which scientists say must be cut up to 80 percent by 2050 from present-day levels. Nuclear power should be excluded because its fuel, uranium, is non-renewable and nuclear power emits greenhouses gases in its fuel lifecycle. In addition, nuclear power has significant cost, health, and national security risks.

c. There should be tiers for certain renewables that have great promise but are not as far along the development curve and thus have higher costs than others. In addition, some technologies may have an inherently higher cost due to materials costs, but lend themselves to peak power applications where peak electricity generated is worth more. Solar photovoltaics (PV) provides one such example. Solar PV may in fact be cost effective at peak, but this is often not recognized or perhaps well-known, and a portfolio tier for PV would help grow awareness of this important technology. Should the portfolio include energy efficiency, it should be separated from the renewable energy portion, so that energy generation and energy efficiency each have their own tier. Otherwise, on a strict cost basis it is likely that energy efficiency resources will dominate in the early years, which would discourage market growth for the sustainable energy generation resources and technologies that are needed in the long run. There should be a design that will ensure robust energy efficiency gains as well as a significant change in the generation mix.

d. Threshold date: The portfolio standard should focus on bringing new sources of energy online to meet new load and to offset carbon-dioxide intensive fossil fuel power generation. At the same time, states that have already taken action through their Renewable Portfolio Standards (RPS) should receive credit for early action. Some states without RPS have installed renewable power due to favorable tax conditions, or to sell into an adjoining state with an RPS requirement. It would be appropriate to adopt the threshold dates in already existing RPSs on a state-by-state basis, and to allow existing renewable power to count in states without an existing portfolio standard. A tier system can also be used, with existing renewables comprising “Class I” resources, and new renewables comprising “Class II” resources.

e. Solar thermal (hot water) energy systems that reduce the consumption of electricity should be included in the portfolio standard because they provide a clean, reliable, cost-effective and non-polluting energy service. Useful thermal energy from power generation or industrial applications should receive credit in some way as recovery of waste heat and applications of combined heat and power systems a district heating should be encouraged because of the improved efficiency and reduced pollution benefits they offer.

f: Energy efficiency standard: how would savings be measured and verified?

--The term ‘deemed savings’ means an estimate of the average per unit savings from installation of specific common energy efficiency measures. Deemed savings estimates shall be based on field studies or billing analyses of savings at a sample of sites where the specific measure is installed.

-- The term ‘base quantity’, with respect to a retail electricity or natural gas distributor, means the total quantity of electric energy or natural gas delivered by the retail electricity or natural gas distributor to retail customers during the most recent calendar year for which information is available.

3. Percentage Requirement and Timing

- a.** target percentage: 20% by 2020, 25% by 2025, no sunset
- b.** given 10-20 year contracts and financing horizons an appropriate ultimate year may be 2030
- c.** A linear ramp is appropriate and used by many existing state RPS. A combination of linear for “Class I” renewables and non-linear for Class II renewable may be appropriate.
- d.** There should be no off-ramps.

4. Relationship to State Portfolio Standards and Utility Regulation

- a.** We support (i), setting a minimum standard for all states. The standard should not preempt states which already have or want to have a higher standard. Every state does have renewable resources and, in fact, EIA’s analysis shows how much potential there is for biomass in the Southeast. There is also significant potential for biomass in the Northeast. It is important to increase renewable energy now.
- b.** Compliance cost pass-through should be allowed

5. Utility Coverage

- a.** Exemptions for small generators as determined by FERC.
- b.** This should be up to FERC to work out.
- c.** No discretionary exemptions for states or utilities are required. While the proposed Senate RPS exempts Hawaii because it is in a unique situation, Hawaii has abundant renewable energy and its development would allow the state to back out expensive petroleum imports.

6. Administration and enforcement

- a.** federal or state government enforcement? The Federal Energy Regulatory Commission (FERC) should provide enforcement.
- b.** how should federal and state enforcement work for states that have existing RPS? This should be up to FERC to work out in consultation with the states.
- c.** What penalties should apply? \$50/MWh. The penalty needs to be high enough to spur real compliance and not have utilities “buy their way out” of requirements.

7. Credits and trading

- a.** Yes, tradable credits should be utilized to facilitate least cost compliance.

- b.** Credit trading should be allowed on a national basis.
- c.** No cap on credit values.
- d.** Initial credit allocation: to generator
- e.** what relationship should standard credits have to other trading programs? If attributes (RE, SO_x, CO₂) are unbundled then they can be traded separately, creating potential additional revenue streams.
- f.** what requirements for contract length and credit rights ownership? 20 year contracts would provide certainty for capital investment.

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