Compatibility of Energy Efficiency and Renewable Energy in Portfolio Standards

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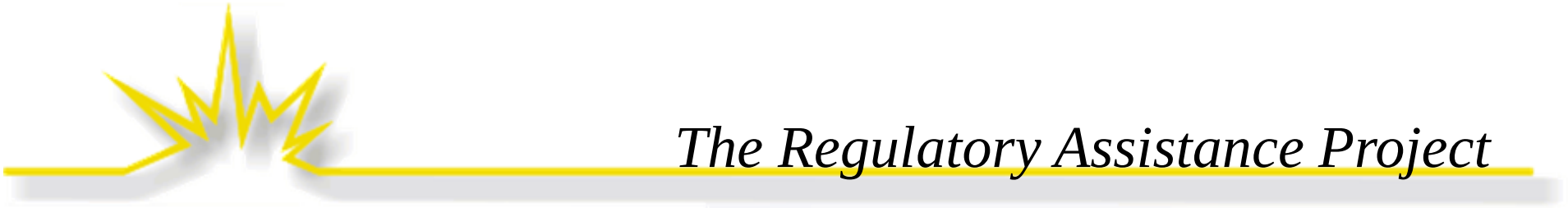

The Regulatory Assistance Project

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About the Regulatory Assistance Project

- RAP is a non-profit organization providing technical and educational assistance to government officials on energy and environmental issues. RAP Principals all have extensive utility regulatory experience.
  - Richard Sedano was commissioner of the Vermont Department of Public Service from 1991-2001 and is an engineer.
- Funded by foundations and the US Department Of Energy. We have worked in nearly every state and many nations.
- Also provides educational assistance to stakeholders, utilities, advocates.

Portfolio Standards should push, guide new investment

- Energy Efficiency
- Renewable Energy
- Clean Energy (EE, RE) (low C)

- Performance Standard for emissions (NO_x, CO_2)can work the same way, but we won't consider such standards today

Assumption

- Portfolio subject (i.e. RE, EE, NOx) is a commodity
  - An RE kWh is the same anywhere
  - A saved kWh due to EE is the same anywhere
  - An avoided unit of NO_x is the same anywhere

Synthesis

- If we can relate a produced kWh of RE…
- With a saved kWh of EE…
- Then we can have an effective portfolio standard for both

- Is this combination useful?

Problems

- Producing a kWh of RE is generally more expensive than saving a kWh through EE
  - In a combined EE/RE clean energy standard, RE will likely be minimized and EE will likely be maximized
  - If we want both, $$ will gravitate to the less expensive

Problems

- Verifying a kWh of RE is generally easier than verifying a kWh saved through EE
  - EM&V already hard
  - Especially when the stakes are raised by making EE a tradable commodity
  - Timing and Quantity of the EE resource affected by numerous factors during and after program implementation
  - Reliability of commodity system is threatened with EE as a part of it

Problems

- What if adding EE that ought to be happening anyway to a clean energy standard just waters down the RE requirement?
  - Well, if it helps get a valuable bill passed…

Experience

- Tradable white tags seem to be promising in the European Union
- A few states allow tradable white tags
  - Trading has been light
  - Perhaps regulated entities within states are too homogeneous for trading to add an advantage
  - And ESCOs don’t seem to find the market sufficiently attractive

Timing: new nuances in energy markets

- Energy management is more important in view of the production pattern of wind and solar power – programs needed to yield:
  - Less load when renewable production lags
  - More load when renewable production surges
- The timing compatibility of EE and RE matters to the value of both.
  - Does a combined standard promote useful storage?

About Portfolio Standards

- Blunt instruments
- Even though timing of production affects value, distinctions are lost when all kWhs are the same
- Combining EE and RE only appears to render the standard less meaningful

Why Combine EE and RE in a National Standard…

- When there is a lot of EE to do everywhere?
- When just a moderate effort everywhere will produce 10+% savings over ten years?
  - And current proposals only demand 4%
- It seems that EE is being added just to reduce the RE obligation and assuage concerns of states which perceive themselves to be short indigenous resources

Conclusions

- A mixed portfolio standard will maximize EE portion since it is cheaper
- Value in energy management programs that increase load at times of high renewable production, and the challenge of M&V, indicate that EE is a more complex commodity than RE and is best kept separate
  - Consider a national wires charge for EE to support state programs?

Conclusions

- A combined standard may have political value
  - I leave that to the experts to evaluate

Thanks for your attention

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- RAP Mission: ***RAP is committed to fostering regulatory policies for the electric industry that encourage economic efficiency, protect environmental quality, assure system reliability, and allocate system benefits fairly to all customers.***