Transmission to Everywhere



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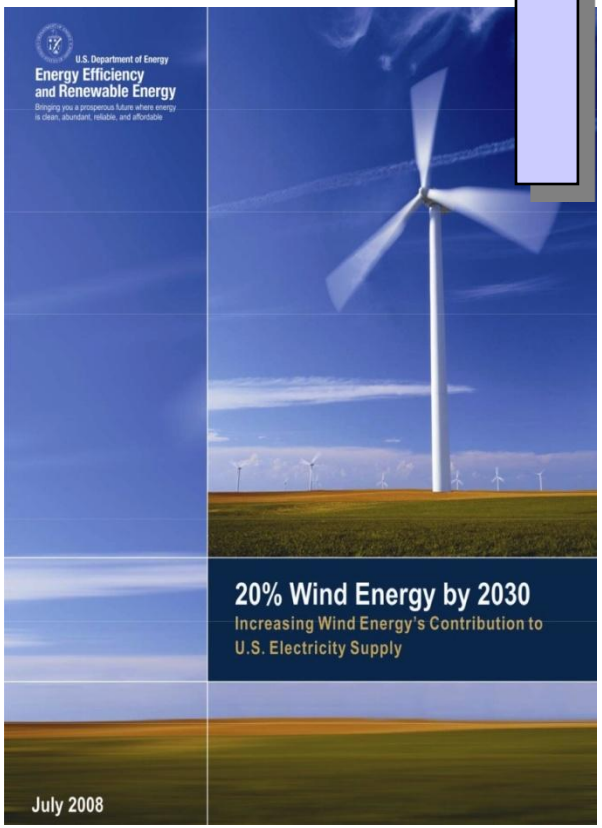
Current Transmission Issues
The Institute for Regulatory Policy Studies

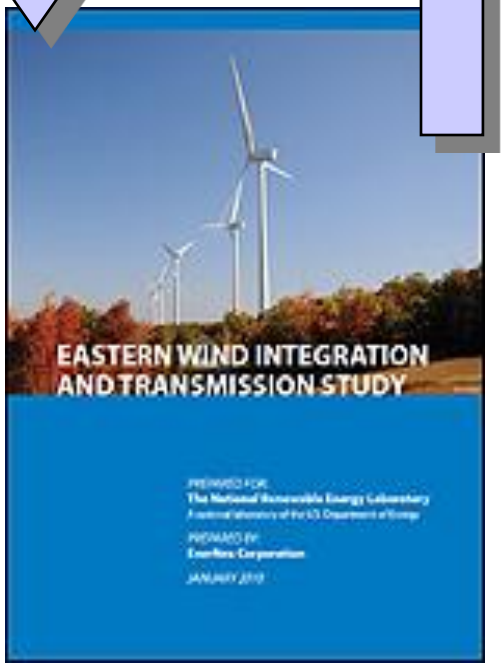
October 14, 2010
Springfield, Illinois

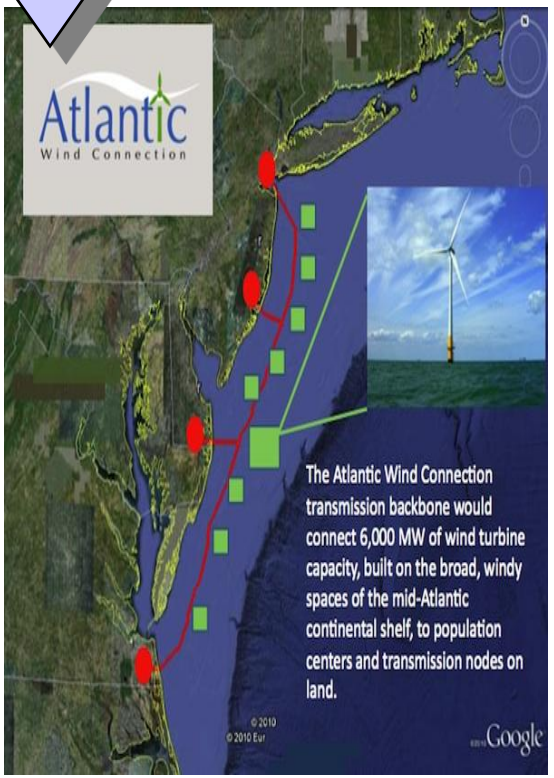
National Imperatives

- Energy diversification
- Jobs creation and economic development
- 20% wind power by 2030 (305,000 MW)
- Significant offshore wind expansion (54,000 MW)
- Transmission expansion for renewables

System Planning







National Plans

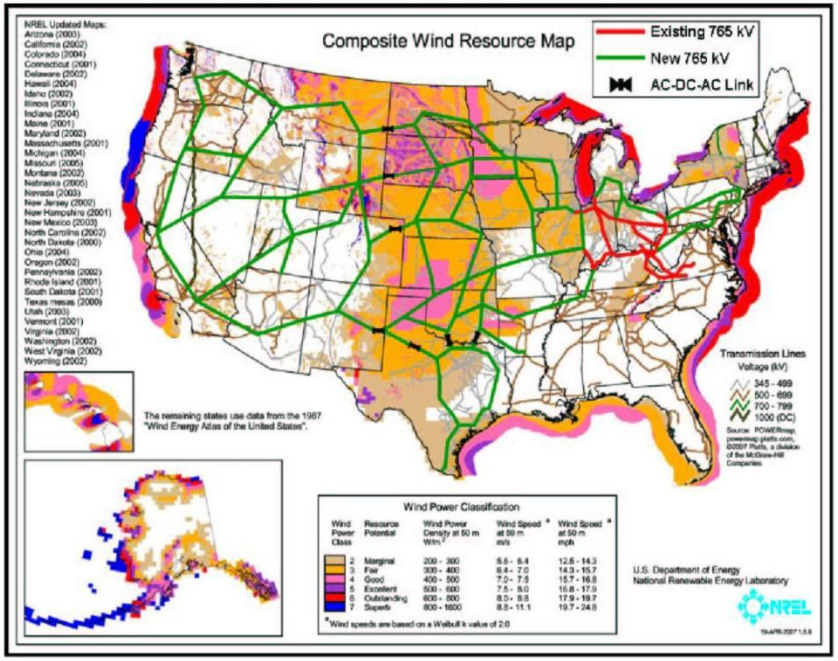


Exhibit 1: Conceptual 765 kV backbone system for wind resource integration (edited by AEP).

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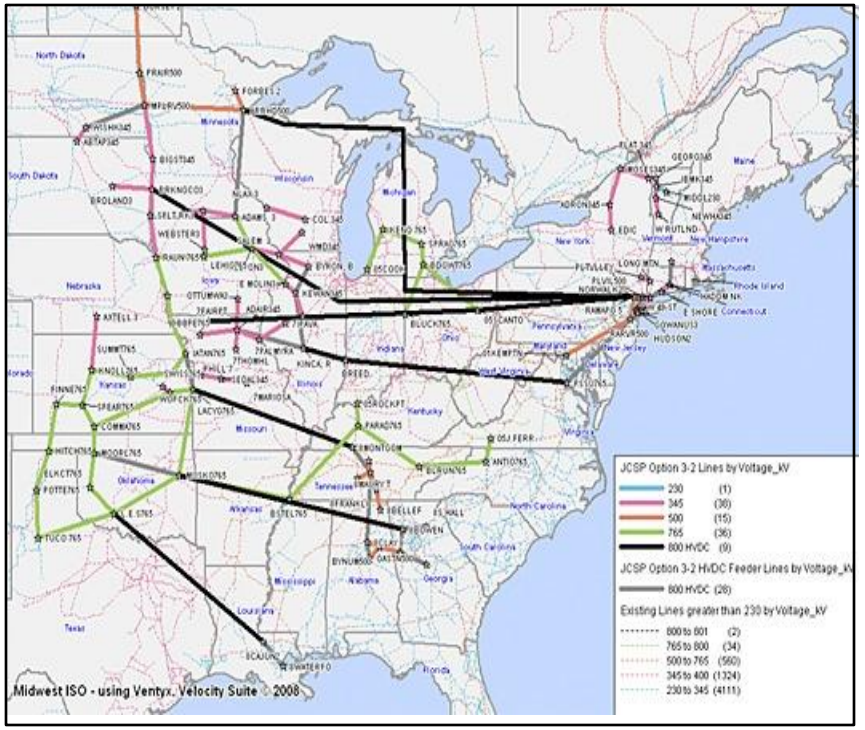
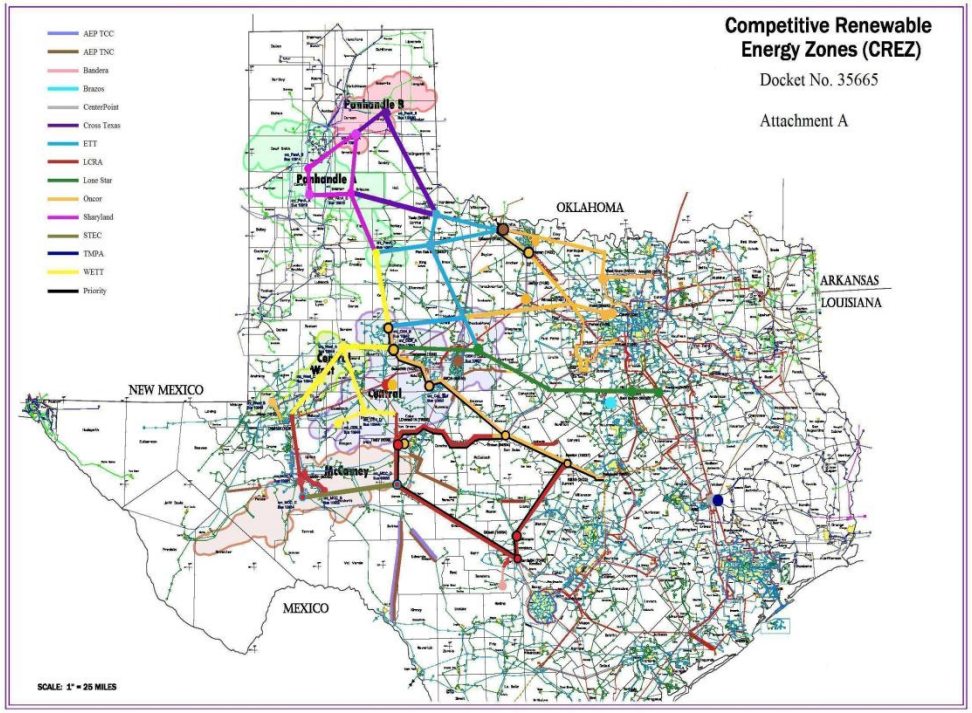


...and by Region



TX:

wind onshore:	18,456 MW
wind offshore:	0 MW
miles:	2,300+ miles
cost:	$5 billion (345 kv)

ISO new england

NE:

wind onshore:	12,000 MW
wind offshore:	4,500 MW
miles:	4,320 miles
cost:	$19-25 billion (500 kv & 765 kv)

The push is on:

Industrial wind represents more than 90% of the proposed generating capacity of all renewable energy projects.

Image: Elk River 150mw facility, Butler County Kansas

Wind today in the US

- Total installed: 36,000 mw

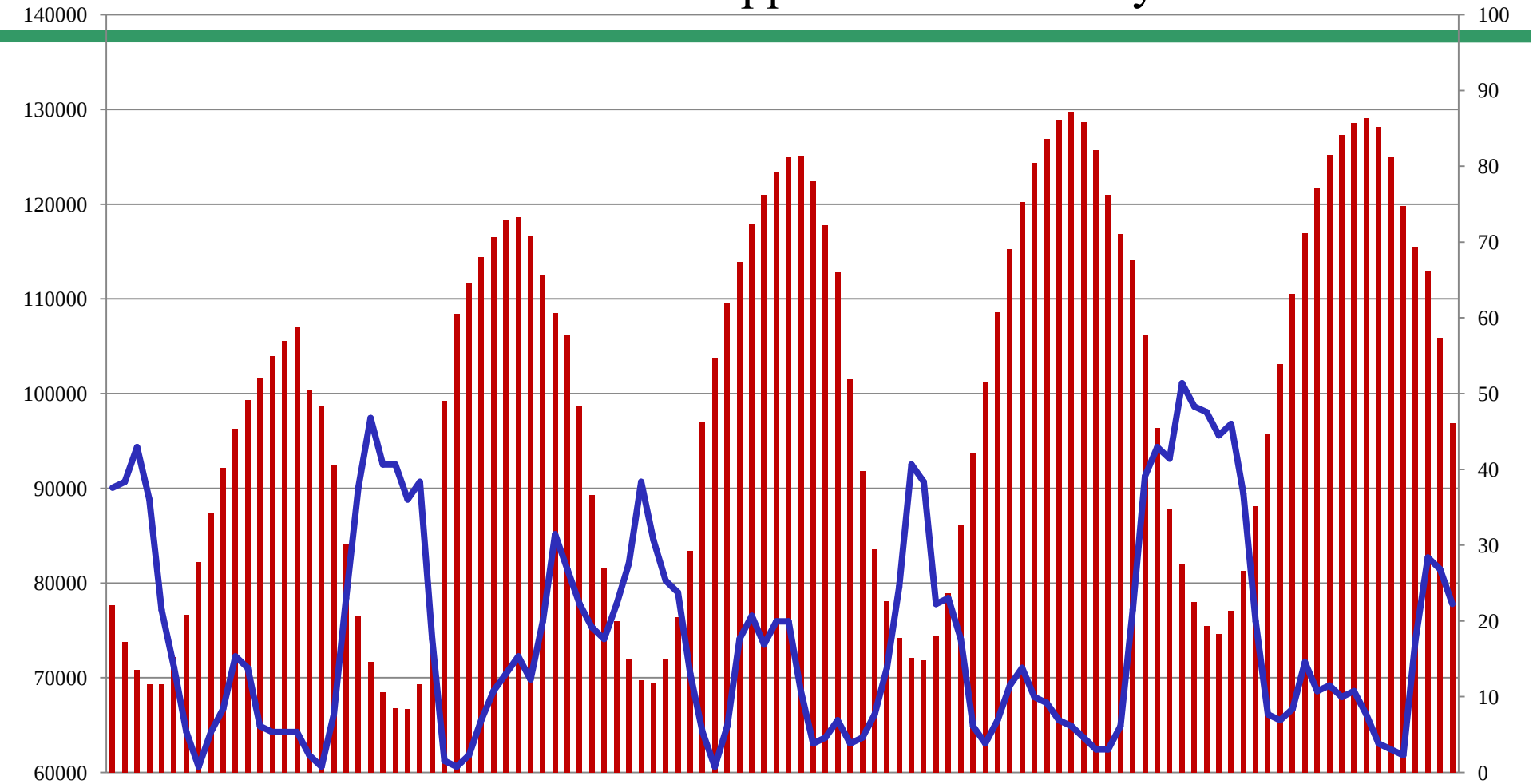
State	Megawatts
Texas	9,707
Iowa	3,670
California	2,739
Oregon	1,920
Washington	1,914
Illinois	1,848
Total	21,798

What DOE says about wind

- Wind is an energy resource, not a capacity resource.
- The capacity value of wind has been shown to range from approximately 5% to 40% of rated capacity.
- Because wind is not a capacity resource, it does not require 100% backup when the wind is not blowing.
- Wind power cannot replace the need for many "capacity resources" …If wind has some capacity value for reliability planning purposes, that should be viewed as a bonus, but not a necessity.

Source: June 2008 DOE report "20 percent wind power by 2030"

Benton County Wind (130.5 mw) Hourly Gen…
…mapped to PJM Hourly Load



Period from July 14, 2008 to July 18, 2008

http://www.pjm.org/markets-and-operations/energy/real-time/loadhryr.aspx
http://www.ferc.gov/docs-filing/eqr/data/spreadsheet.asp

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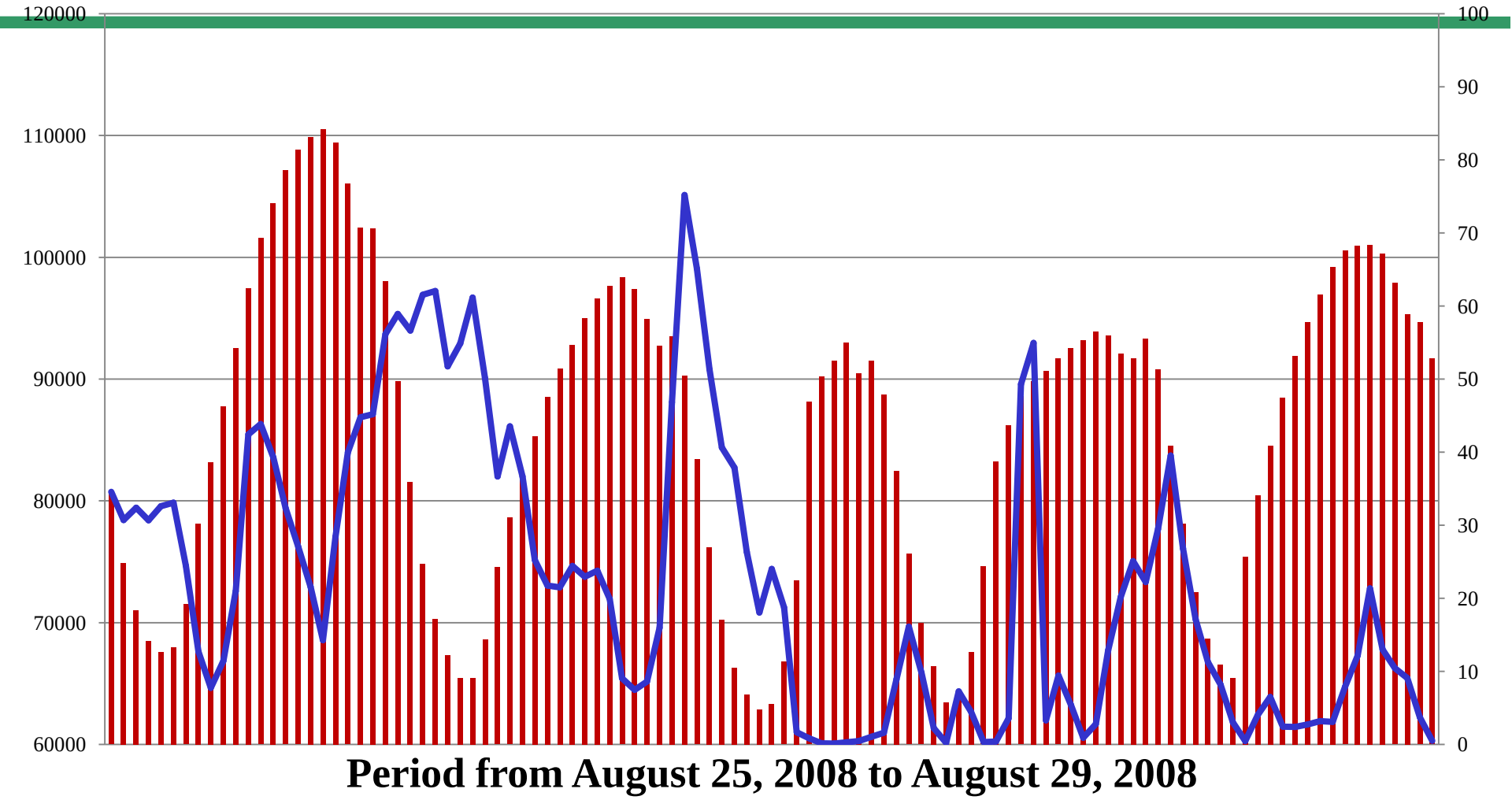

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Renewables and storage

- Well-meaning voters and legislators come up with things like 33 percent renewables in California by 2020…you really have to be a utility geek to get into the details and realize that it simply cannot be done without storage.

  --Maurice Gunderson, senior partner at the venture capital firm CMEA Capital in San Francisco

- There may be a point in the future where the policy requires renewables to bring storage along with them.

  --Mike Gravely, an energy research manager at the California Energy Commission

Renewables and transmission

- To build a transmission system on the shifting sands of broader public policy goals is to risk subjecting consumers to higher costs than they would otherwise bear, for transmission they don't necessarily need.

- We should not design a transmission system around the premise that wind resources should be concentrated where the wind blows hardest, or solar power where the sun shines the brightest, and …ask all consumers to pay the cost of getting these products to market. Let the market decide which are the best technologies and locations for renewable energy projects.

--PSEG Chairman, President and CEO Ralph Izzo
Member, Coalition for Fair Transmission Policy

RPS & the REC market

- Twenty-nine states plus DC
- Establish set-aside market for renewables
  (*Qualified renewables vary by State and subject to change)*
- Single-price system rewards energy not capacity
- Discourages competition leading to higher prices
  (Economic development)
- Arbitrary percentages, limited analysis
- Binary market: compliance met, REC values drop

Valuing a REC

- A single metric:

  1 MWh of energy equals 1 REC

- Based on a single assumption:

  1 MWh of renewable energy backs out 1 MWh fossil

Beware creative cost allocations

- Cape Wind:
  130 turbines, 468 mw installed
- Anticipated average CF: 39%
- Terms of negotiated PPA just released:
  - *Wholesale, bundle energy price: $195 MWh*
  - *3.5% yearly escalator*
  - *4% to National Grid*
  - *Energy cost to be allocated to distribution*

Point - Counterpoint

- Assertion: Company seeks to impose the above-market costs of this contract not only on Basic Service customers but also on distribution customers purchasing generation service from competitive suppliers.

--Mark E. Garrett on behalf of Associated Industries of Massachusetts

- Response: If we had to charge everybody on the standard offer, everybody would leave the standard offer and we'd have nobody to recover the costs, and that's why it's done that way with the distribution charges.

--Ron Gerwatowski, National Grid general counsel

The better policy…

Revisit the Renewables Incentives

Send the right market signals favoring renewable sources that are:

- ✓ **built closer to load**
  (locational argument)
- ✓ **better able to generate during on-peak hours**
  (time-of-day argument)
- ✓ **better able to generate during on-season hours**
  (time-of-season argument)
- ✓ **committed to delivering energy and capacity**
  (time-of-season argument)

Can we get there?

Mimic public policy in a deregulated market:

- ✓ Prices paid non-renewable generators reflect plant location and time of day production.
- ✓ The result: non-renewable generators sited closest to load, produce when load needs the power the most.

Thank You

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www.windaction.org

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