

# A Clean First Approach to New Grid Investments

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*The Regulatory Assistance Project*

Offices: Vermont ♦ Maine ♦ New Mexico ♦ California ♦ Illinois ♦ China ♦ EU ♦ India



# About the Regulatory Assistance Project

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- 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.



# Topics for this Panel

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- Incentives for beneficial investments:
  - Smart grid, storage, PHV
  - Renewables and supporting Transmission
  - Energy Efficiency
  - Disincentives for wrong investments?
- In view of climate change emergence
- Regulatory risks vis a vis beneficiaries



# Clean First

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- Energy and environment inextricably linked
  - Leading to recognition in regulation(?)
- Environmental imperatives are guiding and limiting energy investment choices
  - Smart grid can help the environment if deployed with the environment in mind
- “Enough” capacity at low cost is not enough
  - Don’t we also want the “right” capacity?



# Momentum for Clean First

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- Resource Portfolio Standards
- Energy Efficiency Targets
- Smart Grid Design Principles
  - Connection, operation of renewable supply
  - Promote demand response, end use efficiency
- Other market mechanisms
  - Energy efficiency in capacity markets
- Climate Change Mitigation



# Policy into Action

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- If public policy leads to preferences, these preferences should overlay our practice to avoid “undue discrimination”
  - Due discrimination is OK, even desirable
  - Pressure on the regulators but informed by policy
    - Clarity of purpose



# Utilities are Public Interest Entities

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- US Society has always used utilities to deliver public interest
  - Common goods that no ECON will support
    - Econ term used in *Nudge* by Thaler and Sunstein
- Recent decades: move to markets
  - Public interest purpose sometimes submerged in the great experiment
  - Markets fail to reflect a chunk of public interest



# Public Service Companies

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- Have a special responsibility
  - To make investments (incur costs) that may produce gains for others
    - Smart grid
    - Transmission
    - DG policies
- Because the service area will benefit
  - So utility costs and rates may rise to create societal value






# Regulators

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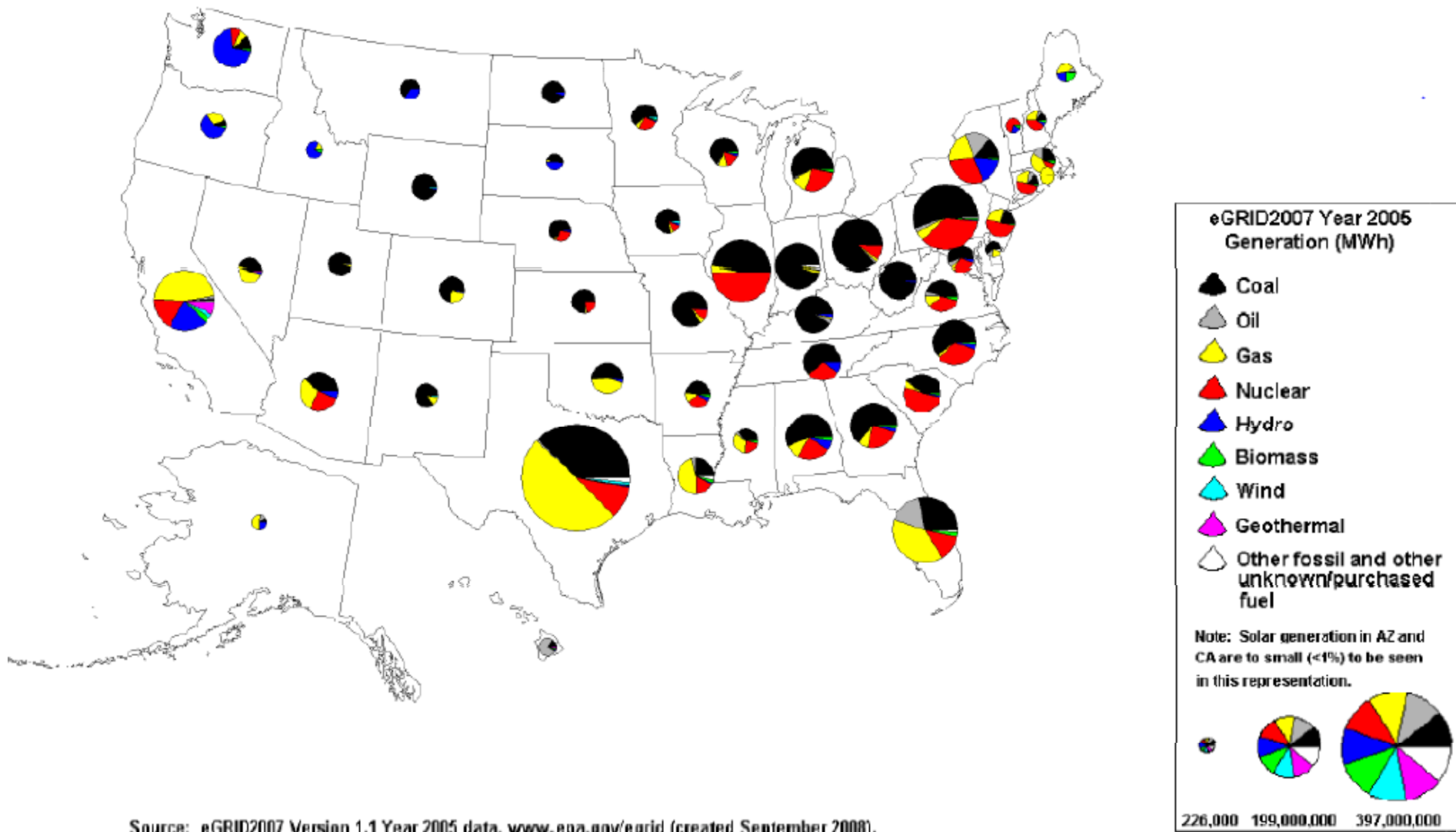
- Faced with new tasks
  - How many commissions are ready for smart grid?
  - How many commissions ready to consider national clean energy goals?
  - How many commissions are ready for massive deployment of electric vehicles?
  - How many commissions ready to justify cost/rate increases for these public purposes



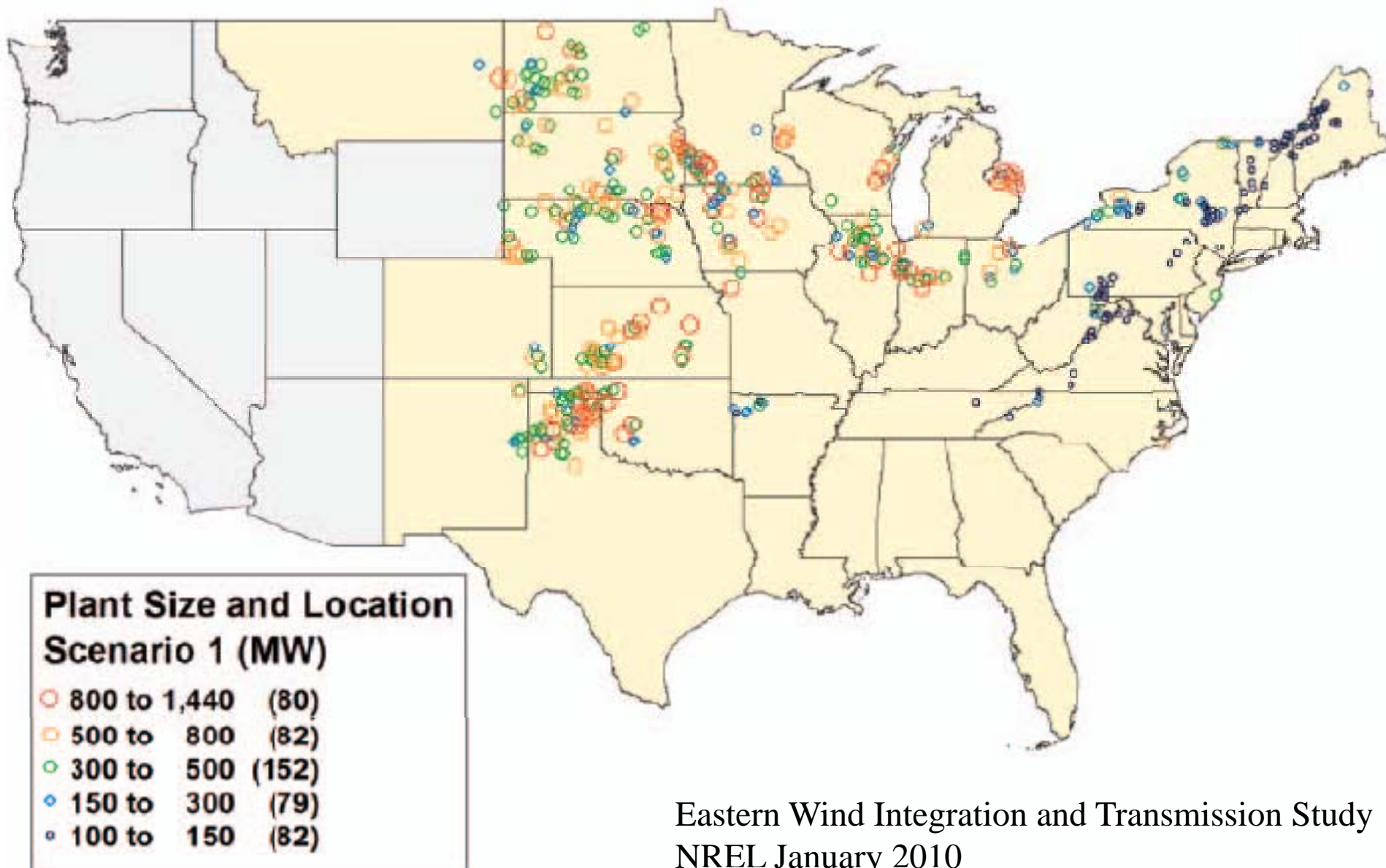
If we want to get to 20%  
wind, how would we do it?

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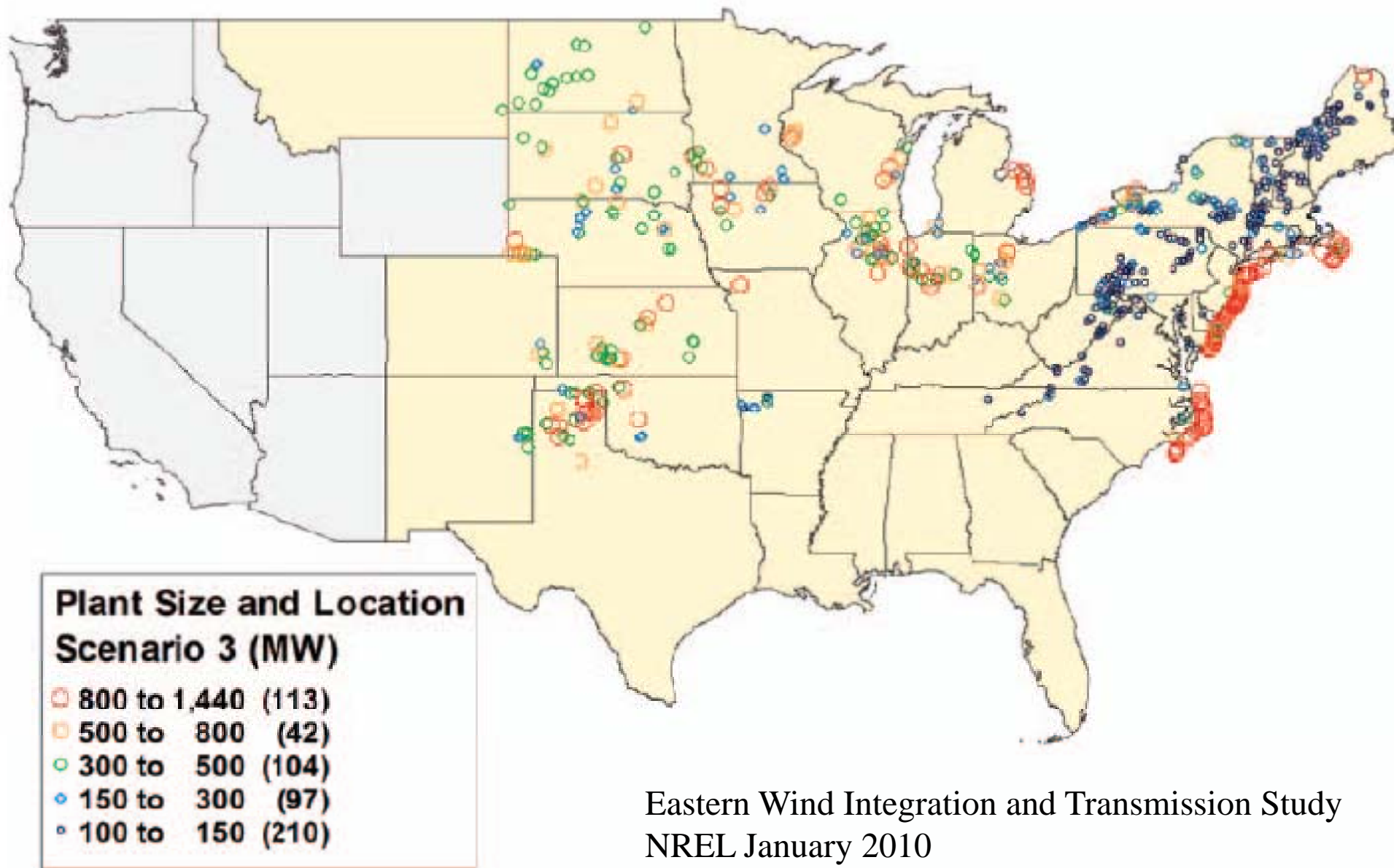
# Starting Point



Source: eGRID2007 Version 1.1 Year 2005 data, [www.epa.gov/eGRID](http://www.epa.gov/eGRID) (created September 2008).



*Figure 2-8. Installed capacity—Scenario 1*



Eastern Wind Integration and Transmission Study  
 NREL January 2010  
 Maximum Offshore Wind

Figure 2-12. Installed capacity—Scenario 3



# Where Does Clean First Lead?

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- Designated transmission for the purpose of integrating renewables owing to national interest
- Giving it distinct treatment in planning queues and cost allocation
- Operating rules for these lines would have as a priority the production of wind
  - Ancillary service markets would be redefined



# Clean First Promotes Efficiency

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## ➤ Energy Efficiency

- Available at low cost, strategic, multiple values
  - Loading order, as in California, all cost-effective
- Earning opportunity for administrator

## ➤ Economic Efficiency

- Pricing supports programs, reflects long run costs
  - Very high customer charges in conflict with both



# Will Prices Lead Consumers to the Right Choices?

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- No, not by themselves
- Prices that reflect production and societal costs are useful
  - Though the public will squeal if their expectations are disrupted
- Policy, programs, education, technical assistance, are necessary to reflect big picture values and influence choices






# There Are Customers “Out There”

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- History: large customers get specific attention, mass market customers treated en masse
- Recently: Energy efficiency forces attention to specific customers, episodically
- Future: Smart grid and price responsive demand means customers are engaged with utility system all the time



# Now comes: Electrification of Transportation

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- Necessary to meet climate goals
  - Can you say “decarbonization of electricity?”
- Need all of this working in concert:
  - renewables,
  - efficiency, and public messages
  - pricing, wholesale/ancillary service market rules
  - utility incentives,
  - clear regulatory direction
    - Or else...



# Disconnection Policy

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- Absence of federal law that conforms with climate science a handicap
  - Reducing carbon by 80% economy wide by 2050
  - And meeting intermediate goals
  - And electrifying transportation
- The US is not on track, and the longer it takes to get on track, the more pain will be required
- Clean First approximates the structure the US will need



# Recommendations

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- Utility Incentives that match public interest
  - Consumer education ratcheted up
- Market rules that match public interest
- Regulation not in conflict with itself
- Regulatory process that gets to the bottom of complex and **new** challenges and is not slave to contested cases



# Thanks for your attention

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- [rapsedano@aol.com](mailto:rapsedano@aol.com)
- <http://www.raponline.org>
- 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.*