

# Panel Discussion: Address Policy Barriers to Widespread Storage

Ron Coutu, Manager, Business and Technology Solutions  
ISO New England

The views presented here are not necessarily attributable to the ISO New England, Inc., and any errors are solely the responsibility of the author

# ISO Barriers to Widespread Storage

- Size
- Rules
- Economics

# ISO Barriers - Size

- ISO New England Operations Systems typically meant for sizes above 1 MW
- Accuracy of dispatching below that level is questionable
- ISO function is at the wholesale level which is in the thousands of MW at all times
- ISO systems are meant to handle hundreds or thousands, not ten of thousands or millions (electric vehicles)
- Current changes to dispatch software allows some control of ten of thousands of demand assets grouped into thousands of resources

# ISO Barriers - Rules

- Current rules do not expressly preclude storage (as I stated in an earlier presentation we have other storage devices)
- Current rules (and systems) generally treat storage as separate devices
  - One device that consumes energy
  - One device that produces energy
- Current rules do not create a link between “devices”
- No effort has been made to determine what rules would need to change and how to change them
- Changes the rules is a long process in the ISO world
  - Any rule change is met with question of cost versus benefit

# ISO Barriers - Economics

- Cost/Benefit Analysis for making any changes may fail in many cases
- Assume that short-term storage can only provide two service to the market
  - Shifting Energy Consumption from one period to another during the same hour(s)
  - Provide Regulation control (frequency control) to the system
- Usually within an hour or two prices do not diverge enough for short-term storage to make a material impact on market costs
  - The may not be true if more intermittent resources are running in the system

# ISO Barriers – Economics (Regulation)

- Regulation Market total dollars in 2010 was around \$14.5 million (as comparison energy was \$5 Billion)
  - Broken down further:
    - ~\$4.5M for Time on Payment (Capacity)
    - ~\$4.5M for Service Payment (Mileage or movement)
    - ~\$5.5M for Opportunity Cost (Energy Market “make-whole”)
- What could be the market benefit if all Regulation was provided by short-term storage?
  - Could displace the Opportunity Cost completely (assuming these resources would not be “dispatched” in energy market so they would have no lost energy market opportunity)
  - Let’s say they only displace that cost then potential saving to the market are \$5 Million a year.
  - That leaves less than \$10M in revenue for these resources

# ISO Barriers – Economics Questions

- Is \$5M in savings enough to incent the market participants to act on making changes to the design to get these resources?
- Is \$10M in revenue enough to incent these resources come to the market?
- These are the questions that need to be answered by our stakeholders before we can address any issues
- Our Alternative Technology Regulation Pilot program has only attracted 1-2 MW (while it had a limit of 13 MW), this only meets 1% of the Regulation Requirement
- Unless more resource provider come forward and can provide a higher percentage of the requirement, how can the market see enough savings to meet the cost/benefit ratio?
  - Cost of implementing systems and processes would not be insignificant

# What can the ISOs do to help?

