

# **Advancing Clean Energy and the Grid**

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**Climate Economy Summit**  
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# Imagine an Energy Seesaw

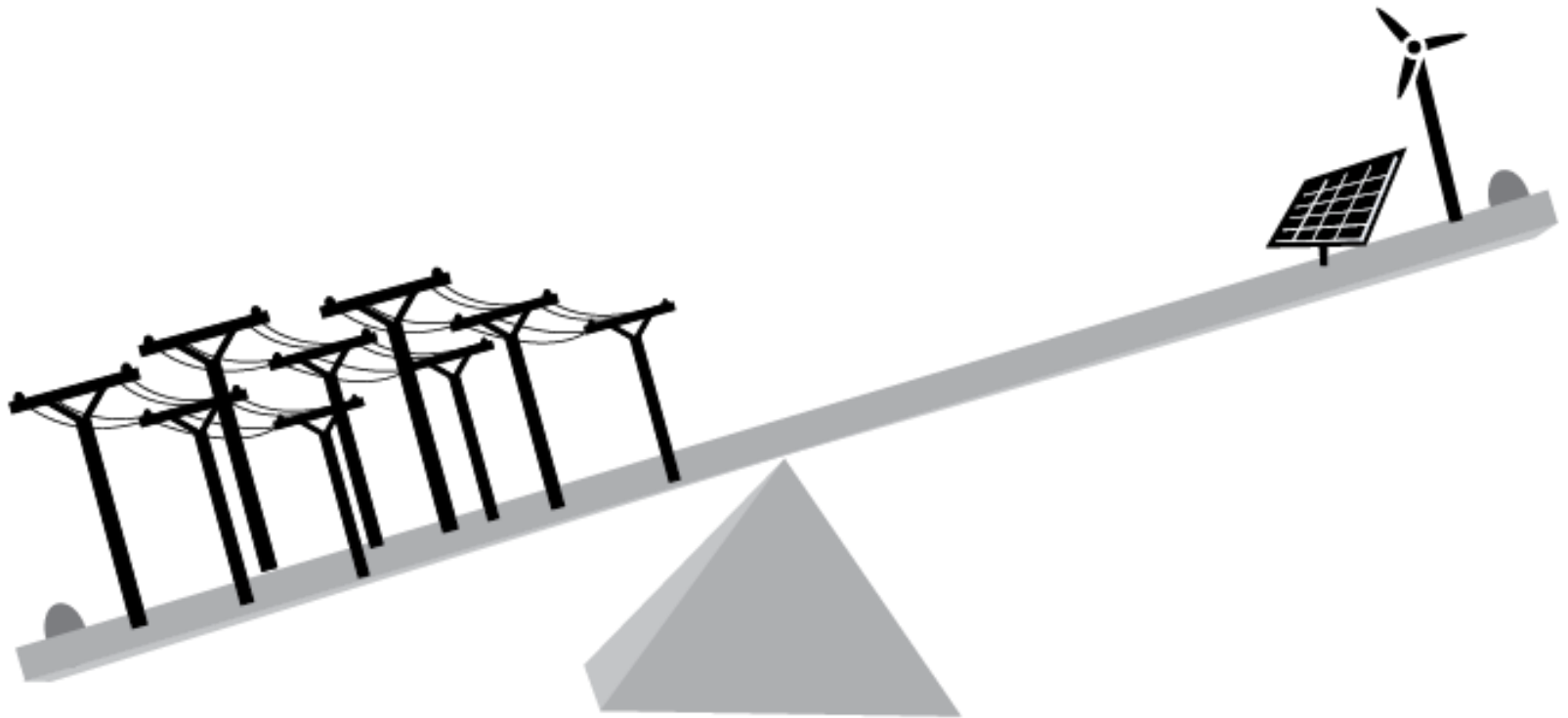


# An Energy Seesaw Seeking Balance

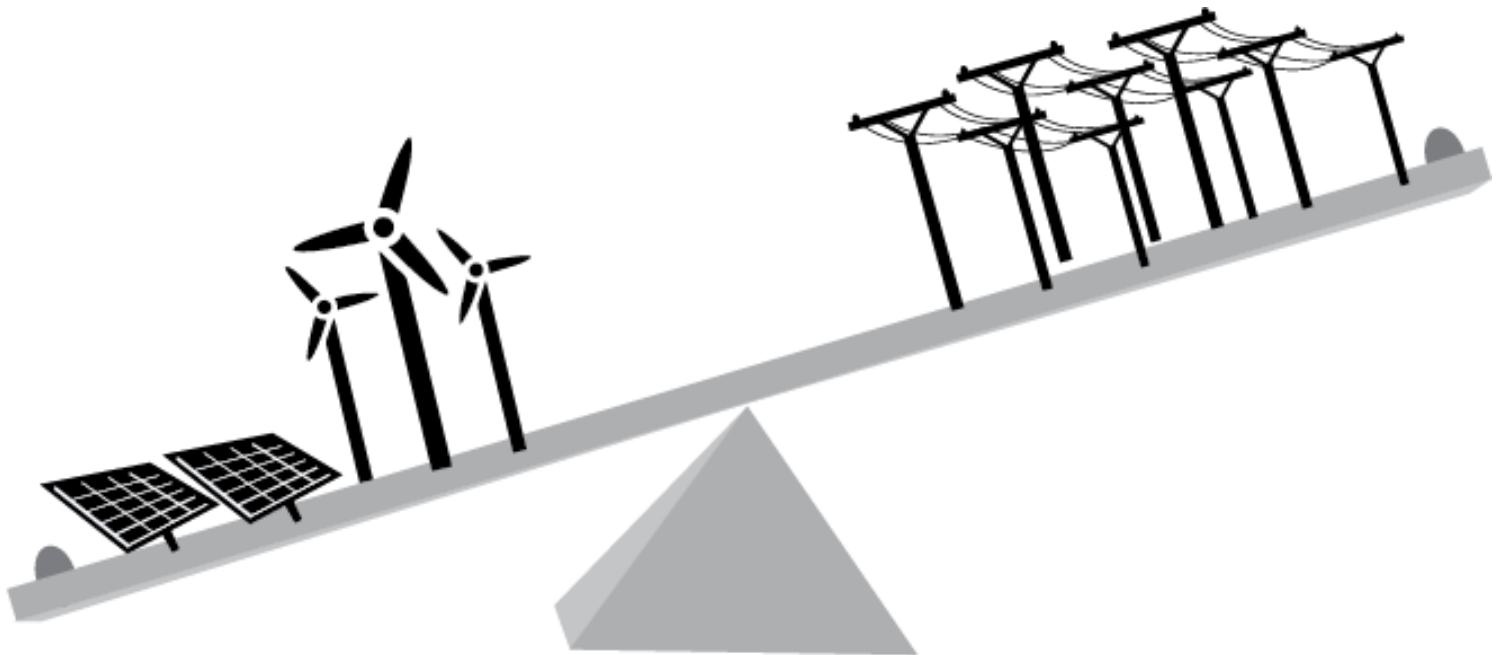
## *Balance of...*

- Supply **and** Demand
- Centralized **and** Distributed
- Costs **and** Benefits
- The Many **and** the Few
- Regulation **and** Innovation
- Long Distances **and** Close By
- Price **and** Reliability
- Partners **and** Opponents
- Energy Independence and Interconnection
- Bottom up “Behind the meter” **and** Top Down Grid Operator
- Renewables and Fossil Fuels
- Flexible **and** Brittle systems
- Virtual Power Plants and Large Infrastructure
- One-Way Distribution and 2-Way Distribution

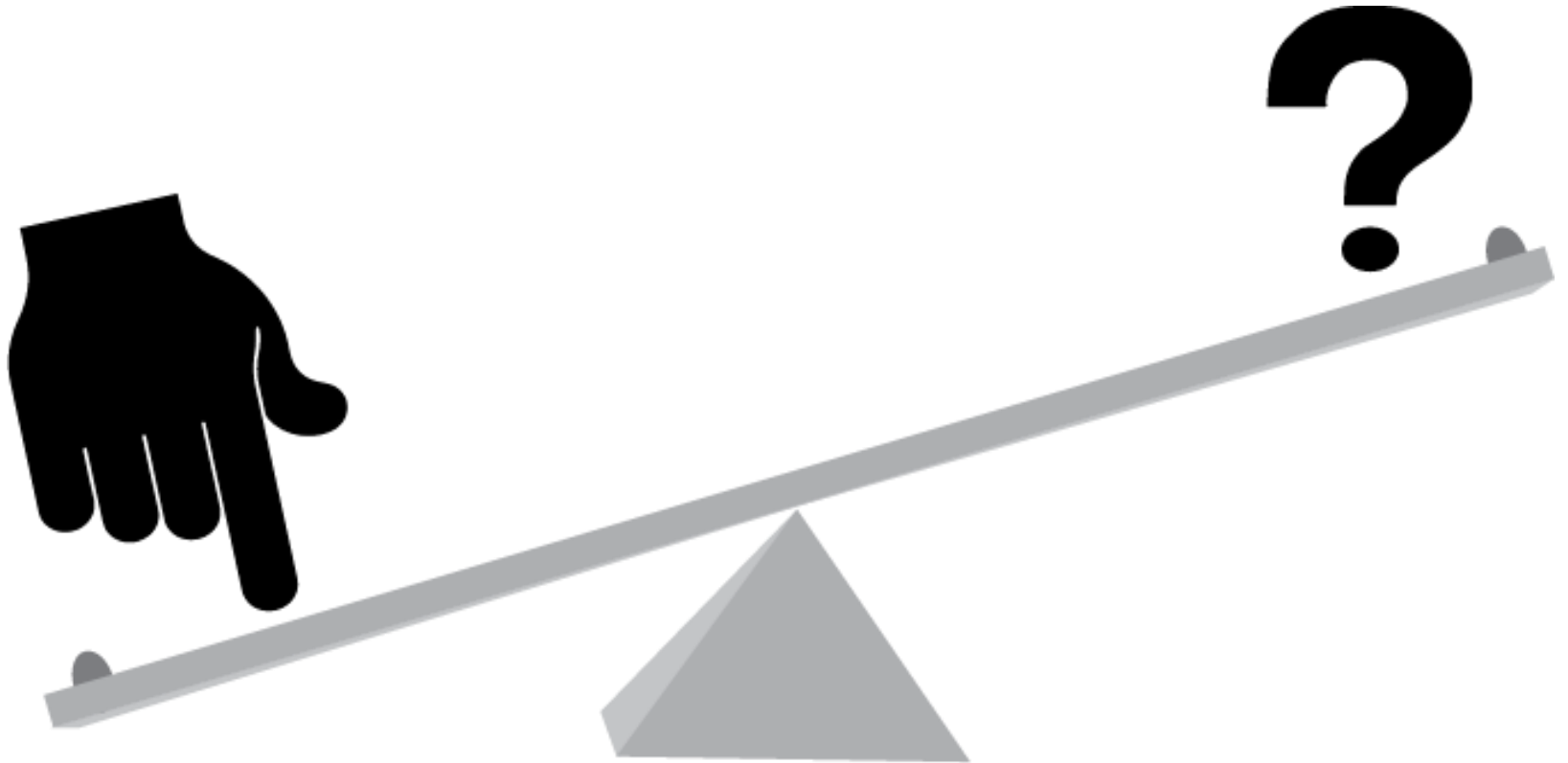
For a long time, the Utilities & Grid seemed to tip the scale...



Things changed over the years...until sometimes the  
Utilities & Grid seemed disadvantaged

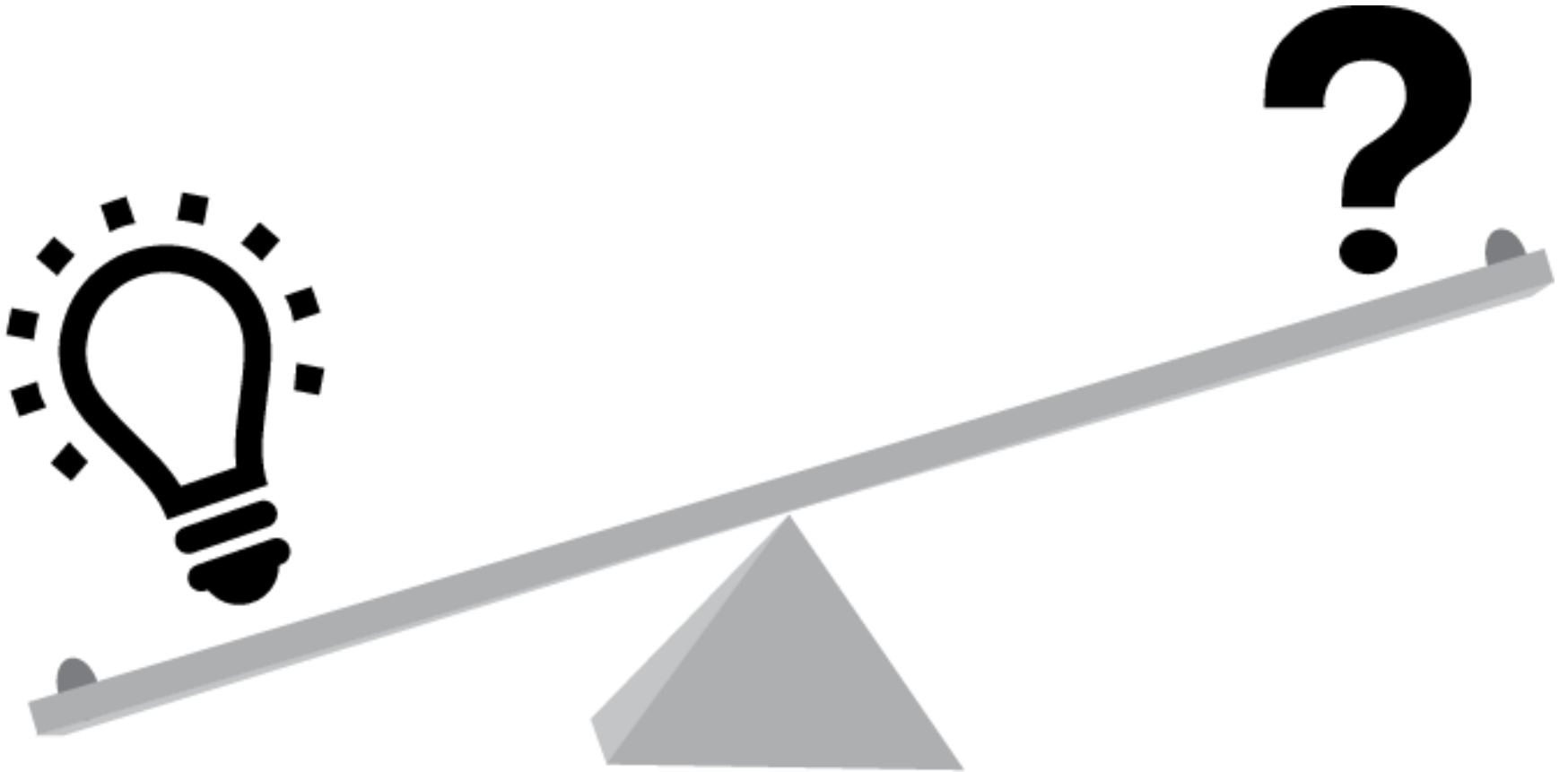


Often, it's the hand of policy that tips  
the scale...



# Innovation and New Business Models

## Tip the Scales too...



# Innovative Distributed Generation & Business Models in Vermont

- Dual-axis solar trackers
- Community solar & wind
- Combined heat power
- Rooftop solar PV
- <5 MW wind power systems
- Farm hybrid systems
- New financing models like leasing & 3<sup>rd</sup> party financing
- Feed-in tariff / standard offer
- Net metering
- Co-op utility ownership
- Co-op distributed generation system ownership



# What I Know Best

## Solar

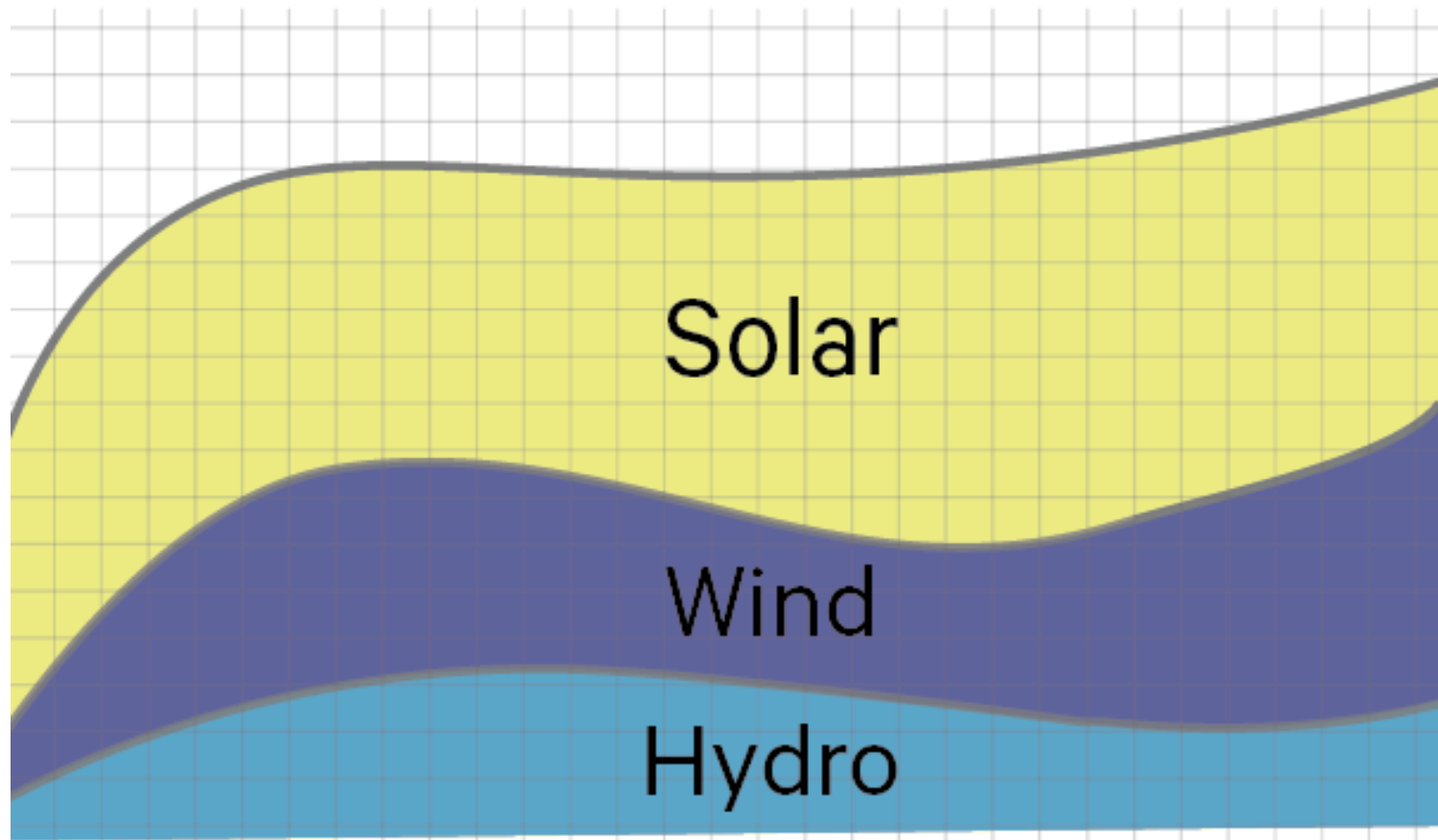


## Wind

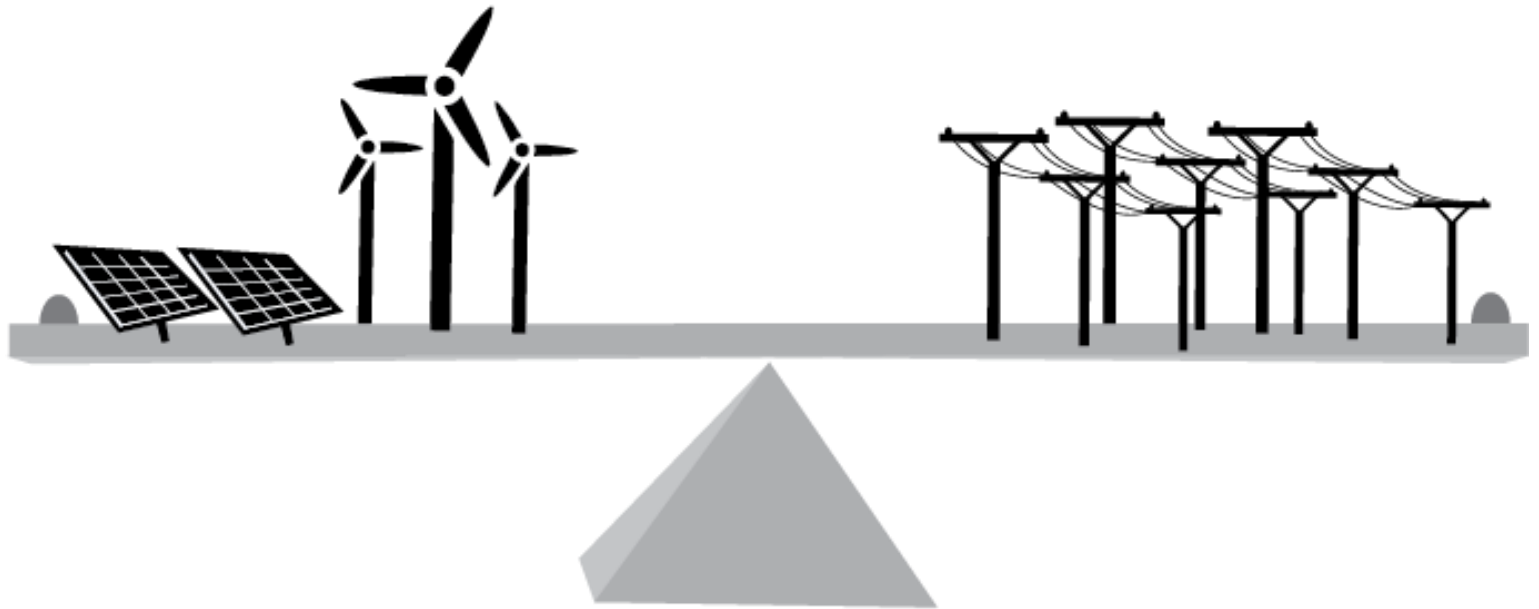


# These Innovations and New Business Models Worked

*Distributed Generation Grew in Vermont*



We need a combination of good policy and ongoing innovations for balance...



# Preparing for the Future, Working Together as Partners

- We need to upgrade the grid infrastructure to add flexibility for distributed generation. [Even the current U.S. Dept. of Energy said so in its recent report.]
- We need to encourage behavior change and enable demand side management.
- We need to price distribution system upgrades based on real costs [versus the artificially low ISO New England estimate]

**Vermont can do this. Join me...**

