Integrating Power Markets and Public Policy, and the Case for Considering Energy Efficiency in the Discussion

Cheryl Jenkins
Vermont Energy Investment Corporation

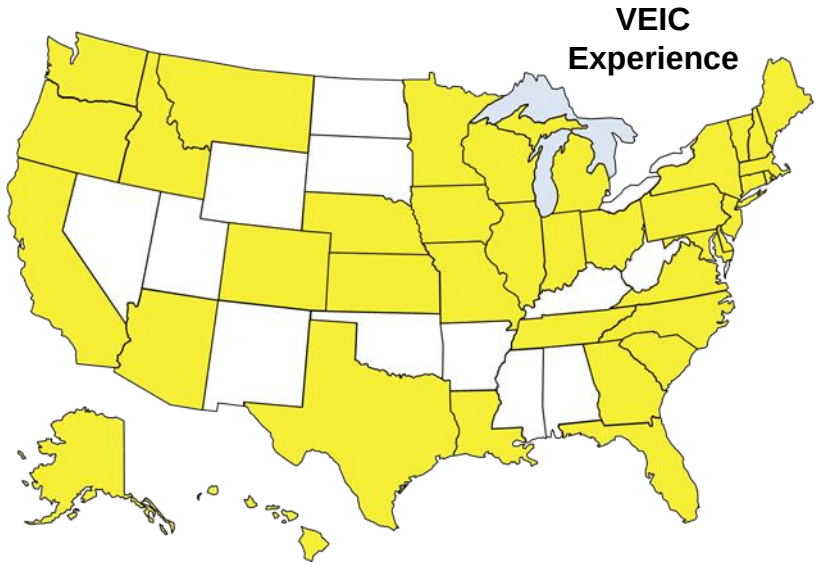
Presented at the 2017 ACEEE National Conference on Energy Efficiency as a Resource
October 31, 2017

Vermont Energy Investment Corporation

About VEIC

veic.org

- Mission-driven nonprofit
- 30 years reducing economic & environmental costs of energy (specific focus on low income)
- Over 300 staff; offices in Vermont, Ohio, & Washington DC
- Services - scope is electric & thermal; buildings & transportation:
  - Implementation of energy efficiency, renewable energy, and transportation efficiency programs
  - Program design, review, evaluation
  - Policy, planning, regulatory support



Efficiency Vermont

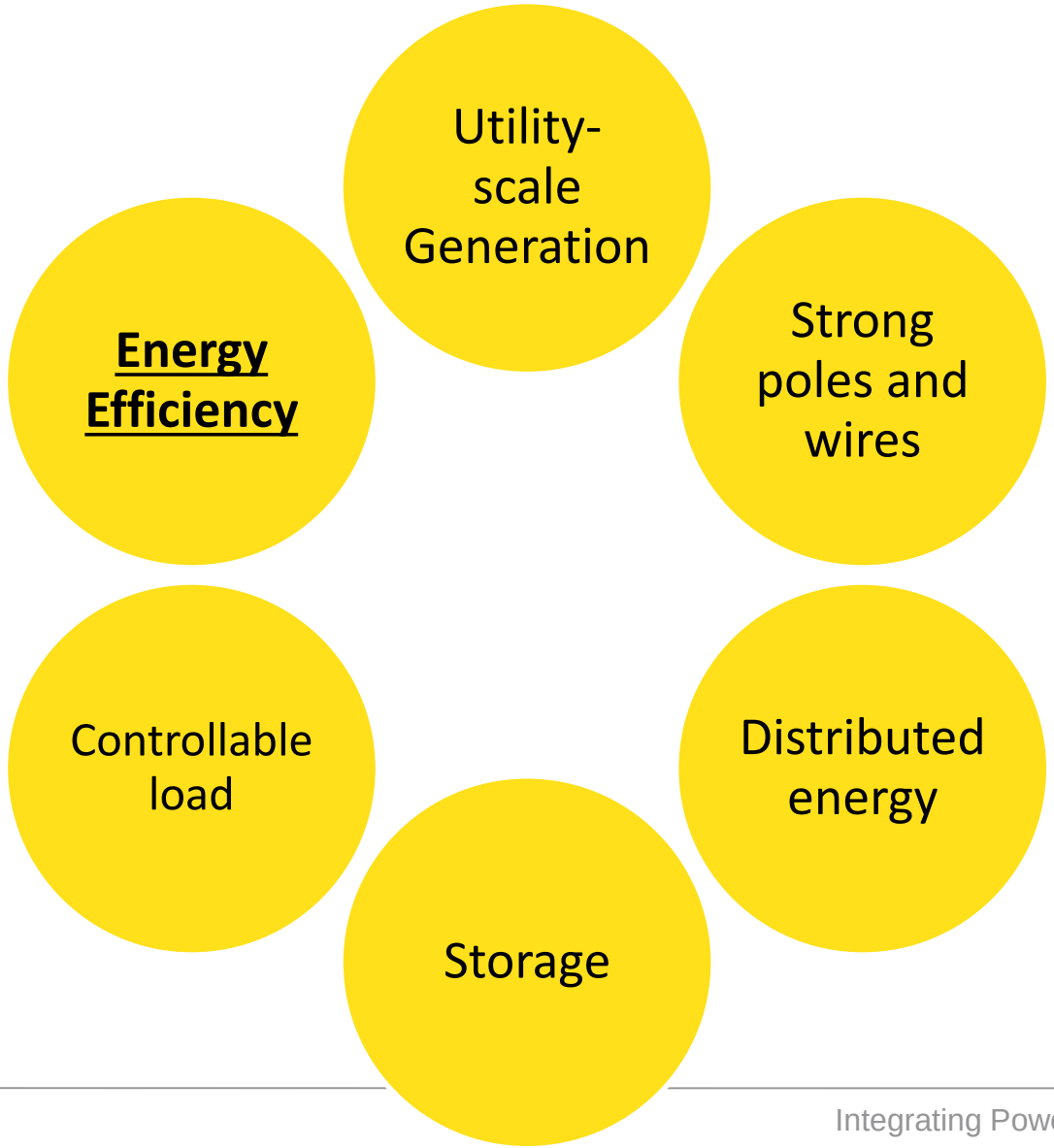
EFFICIENCY$MART

DC SUSTAINABLE ENERGY UTILITY

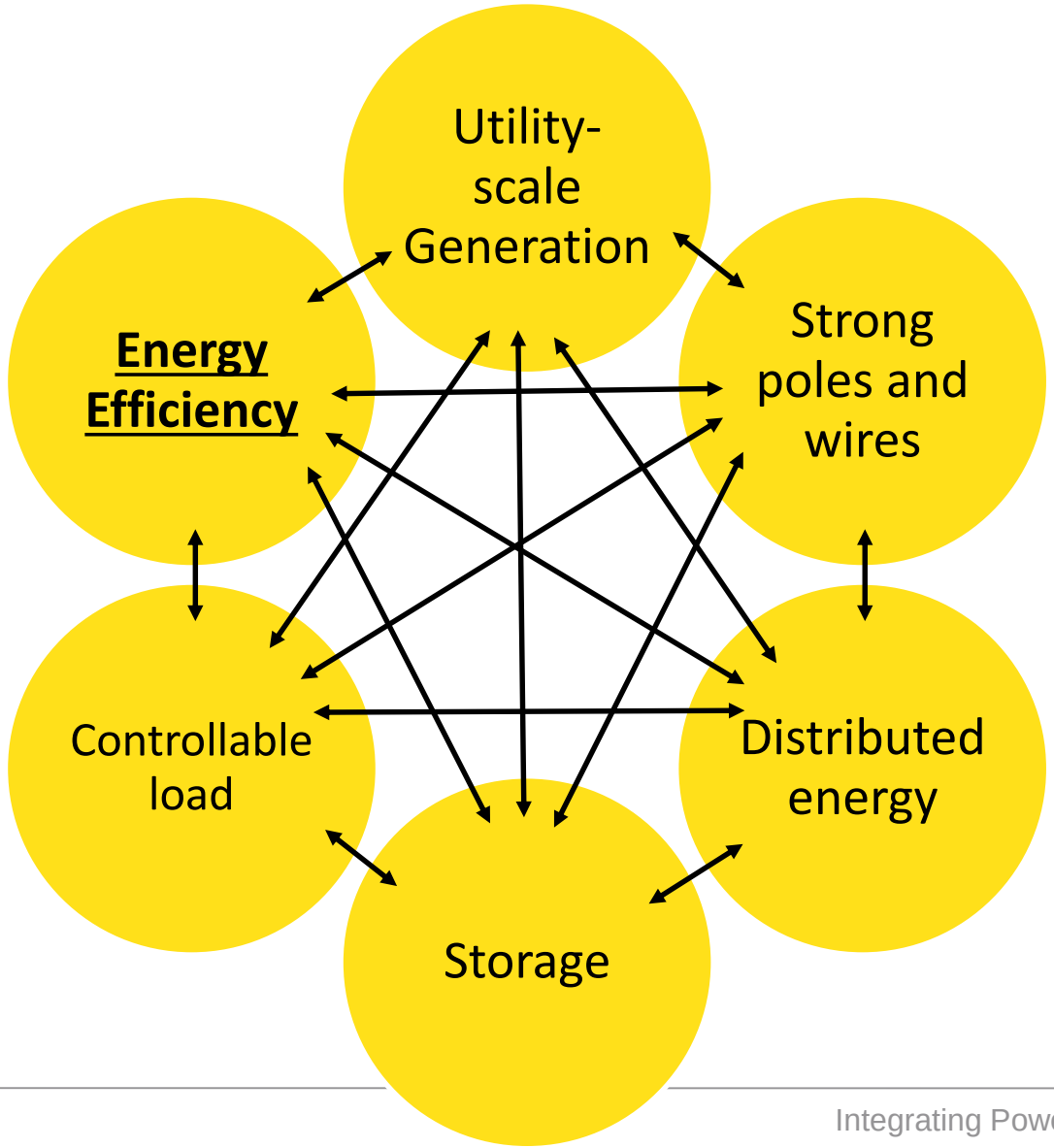
Value Components of EE – Traditional View

Category	Value Component
Bulk System	Avoided generation capacity
	Avoided energy
	Avoided transmission capacity infrastructure and losses
	Avoided ancillary services
Distribution System	Avoided distribution capacity infrastructure, O&M, and losses
Reliability	Avoided restoration and outage costs
External	Avoided greenhouse gases, air pollutants, land and water impacts

The Modern Energy System

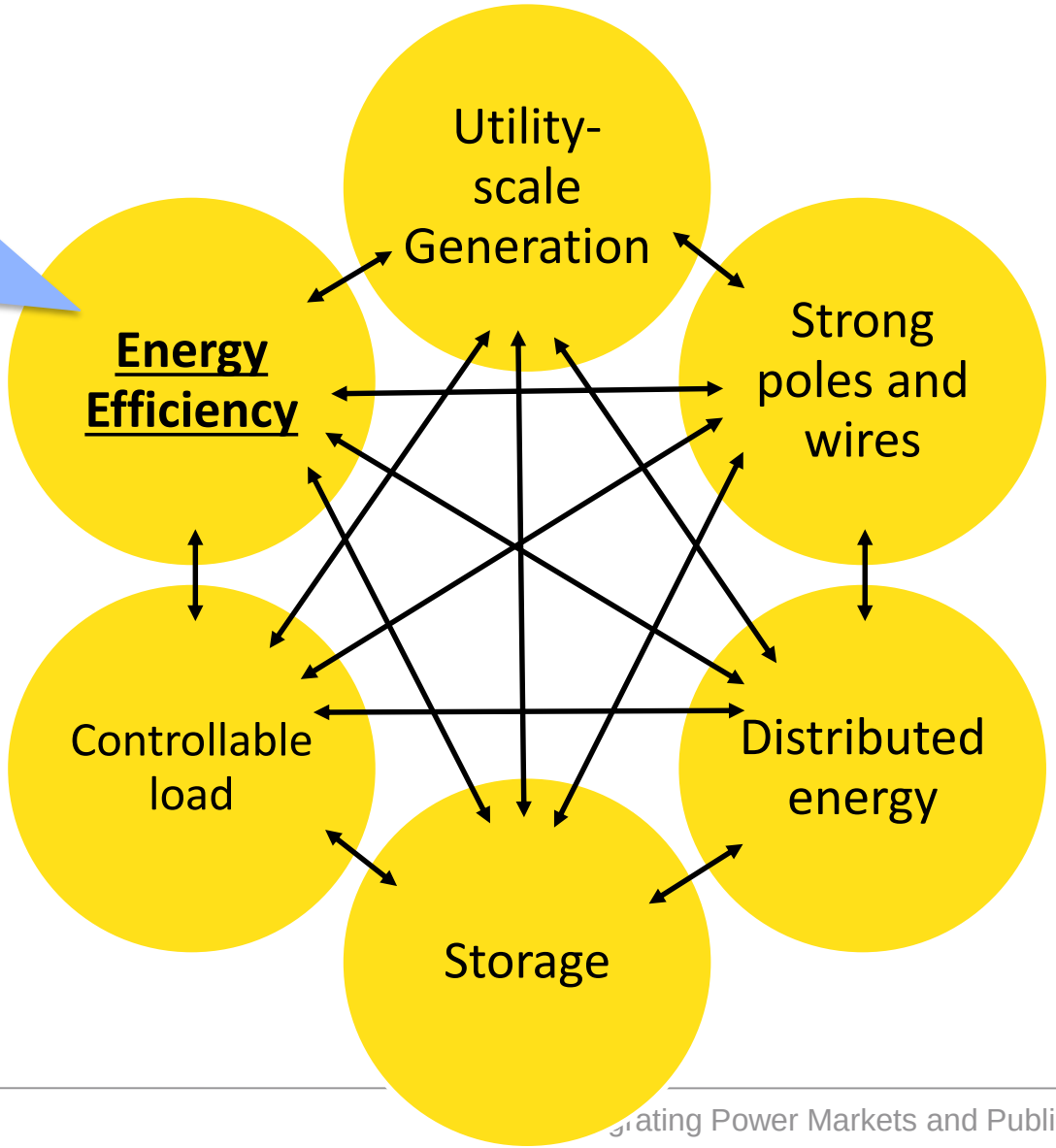


The Modern Energy System



The Modern Energy System

EE must be an informed stakeholder and an active contributor to discussions about the grid of the future



Current Issues for a Grid in Transition

- Integration of renewable resources and other new technologies
  - Intermittency, interconnection, sizing become issues
- Retirement of non-gas-fired power plants
  - Reliability, resiliency become issues
- Accommodating public policy goals within the competitive marketplace

Power Markets and Public Policy

?

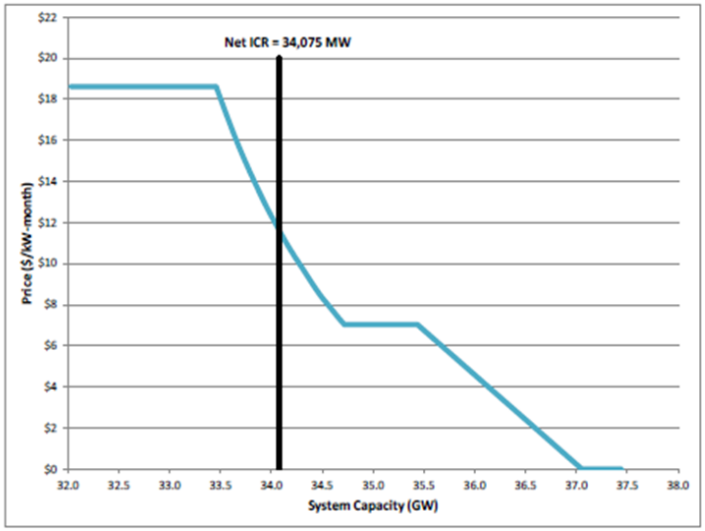
Competitive power markets are designed to ensure reliability at low cost

Public policy acts to achieve energy, environmental, economic goals

Wholesale Power Markets

ISO New England Forward Capacity Market

- Designed to ensure future system capacity needs and maintain reliability at the lowest cost
- Resources bid to provide capacity at their cost to build/run
- Market clears at the price where supply offered meets system demand
- Some features designed to encourage new, efficient resources



Public Policy

Laws, regulations in support of the public good

- Provide economic support to resources to enable compliance with these public policy requirements
- Results in development of new projects or support for existing resources that would not otherwise be market competitive
- Many also have additional grid impacts
  - Intermittent generation
  - Interconnection challenges

Recent Policy Actions

- Meeting environmental objectives – state and federal policies are driving the growth of clean-energy resources
  - Renewable Portfolio Standards
  - Tax credits
  - Carbon policies
  - Mandated use of green power
- Many also have additional grid impacts
  - Intermittent capacity
  - Interconnection issues

From ISO-NE Regional Electricity Outlook

Recent Policy Actions

- Meeting environmental (and economic) objectives – subsidies for nuclear power in Illinois, New York, Ohio
  - Zero-emission credits
  - Support provided for economically struggling plants
- Supported to meet reliability and environmental needs
  - Increasing reliance on one fuel source for power generation leads to questions about reliability
  - Provides cleaner power than fossil fuels

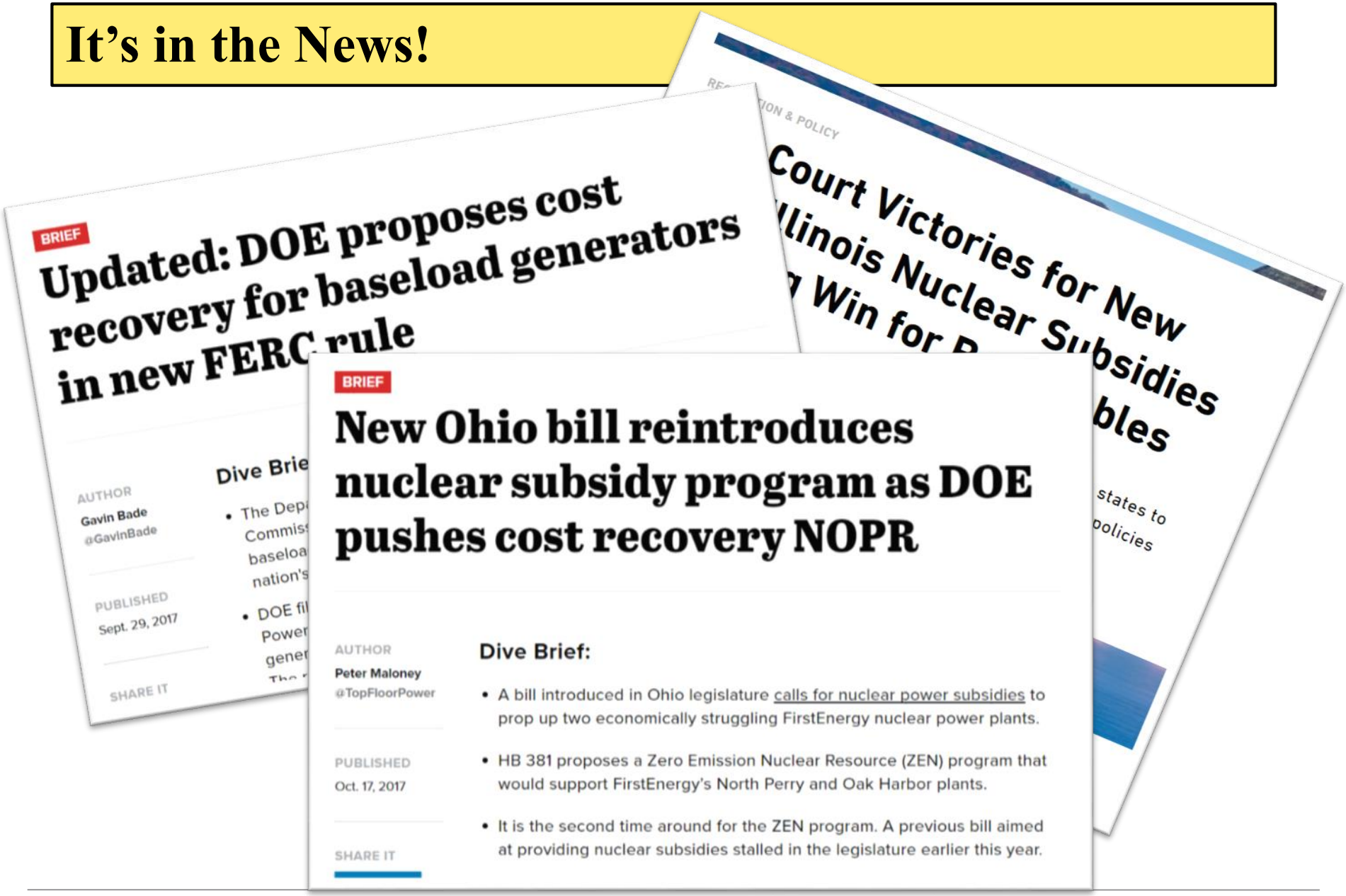
From ISO-NE Regional Electricity Outlook

Recent Policy Actions

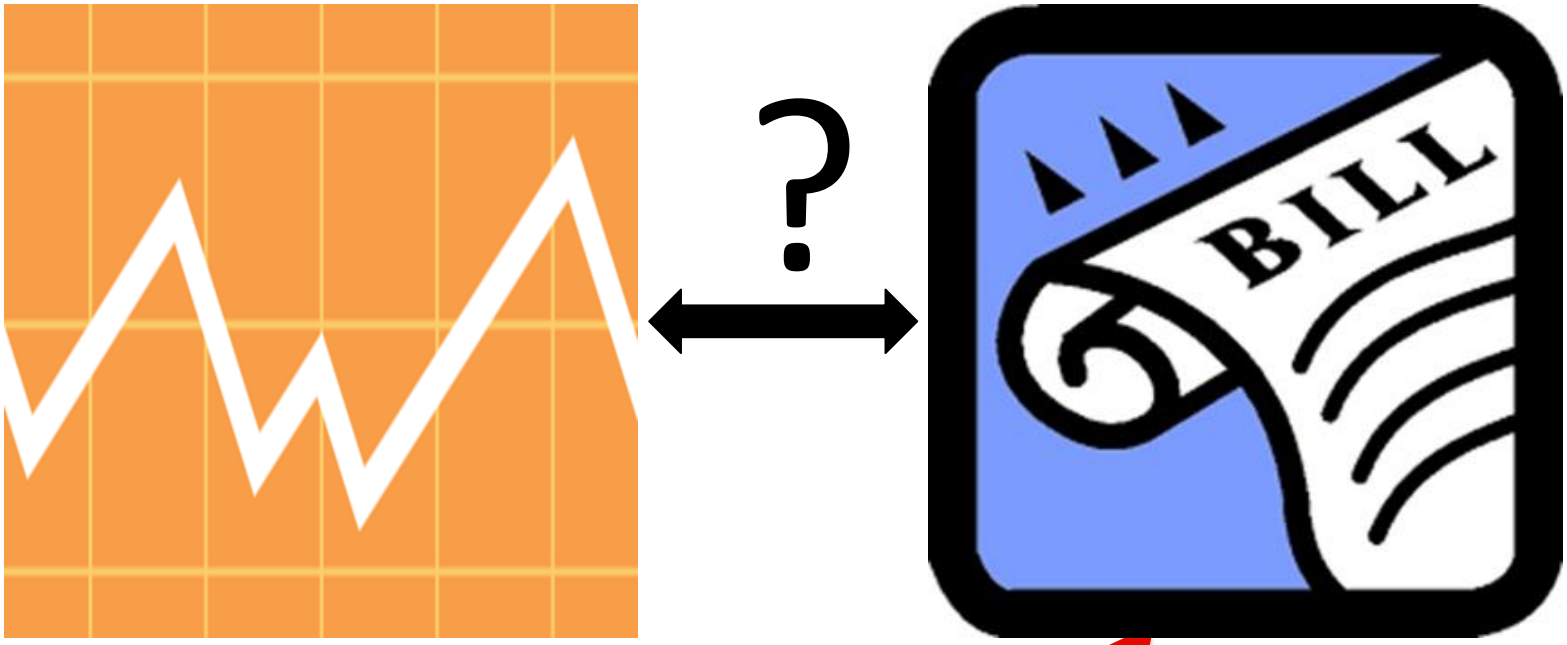
- Meeting economic (and political?) objectives – DOE NOPR proposal for subsidies for fossil-fuel generators
  - Argued to be support for baseload requirements = enhanced reliability and resiliency
  - Concern there would be long-term risks to consumers
- Support provided for economically struggling plants
  - Said to be compensating for the value of on-site fuel supplies
- Support for the coal industry?

From ISO-NE Regional Electricity Outlook

It's in the News!

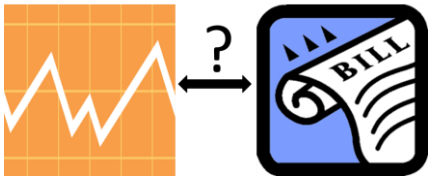


Markets and Policy: The Challenge



Out-of-Market Policy Subsidies Can Undermine the Competitive Marketplace

Markets and Policy: The Challenge



Coordination is necessary but not easy

- Adding subsidized resources to markets would result in artificially low prices – so wholesale markets preclude these resources
- Omitting subsidized resources from markets and planning results in overbuilding the system – consumers "pay twice"
  - Both result in higher costs for consumers and potentially an inefficient mix of resources
- New market mechanisms are needed to create a bridge between reliability needs, policy goals, and reasonable costs

ISO-NE: Integrating Markets and Public Policy

- The objective:

  "Find a means to execute states' policy requirements at the lowest reasonable cost without unduly diminishing the benefits of competitive organized markets or amplifying the cost to consumers of implementing state policies"

- Stakeholders have established a process to explore solutions - Some proposals to date:
  - Establish a shadow-carbon price (security constrained economic carbon dispatch)
  - Make it a Forward Clean Energy Market
  - Have a two-step market structure, where non-subsidized resources clear, and then any that want to retire provide their obligations to subsidized resources

Impact of EE in Wholesale Power Markets

ISO New England Forward Capacity Market

- Since 2006, EE can participate, equivalent to supply
- Contribution has grown from <2% to >7% of total market capacity
- Advantages:
  - Provides more-complete compensation for value of EE = $$ to providers
  - Lower clearing costs = $$ to system
  - Increases system reliability
  - Provides exposure for EE as a resource for market planning and system forecasting

→ EE should be part of market conversations!

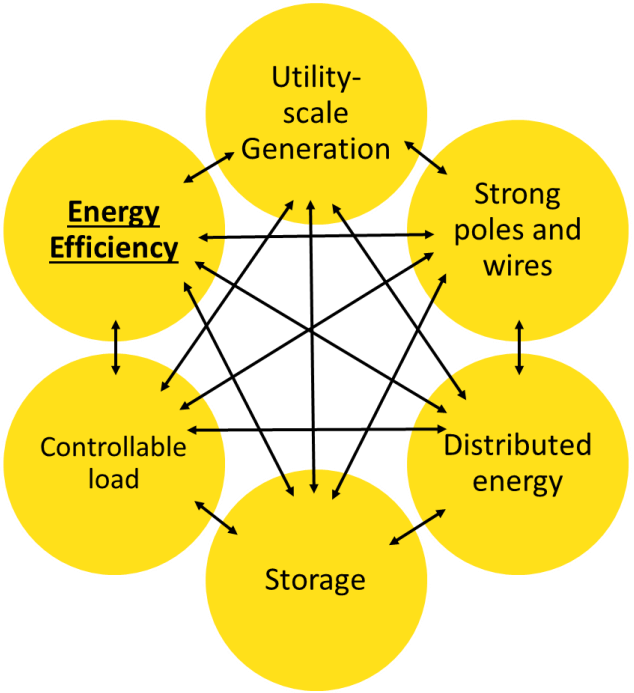
EE as a Player in Public Policy-Driven System

Resources subsidized to meet environmental, economic, system reliability objectives

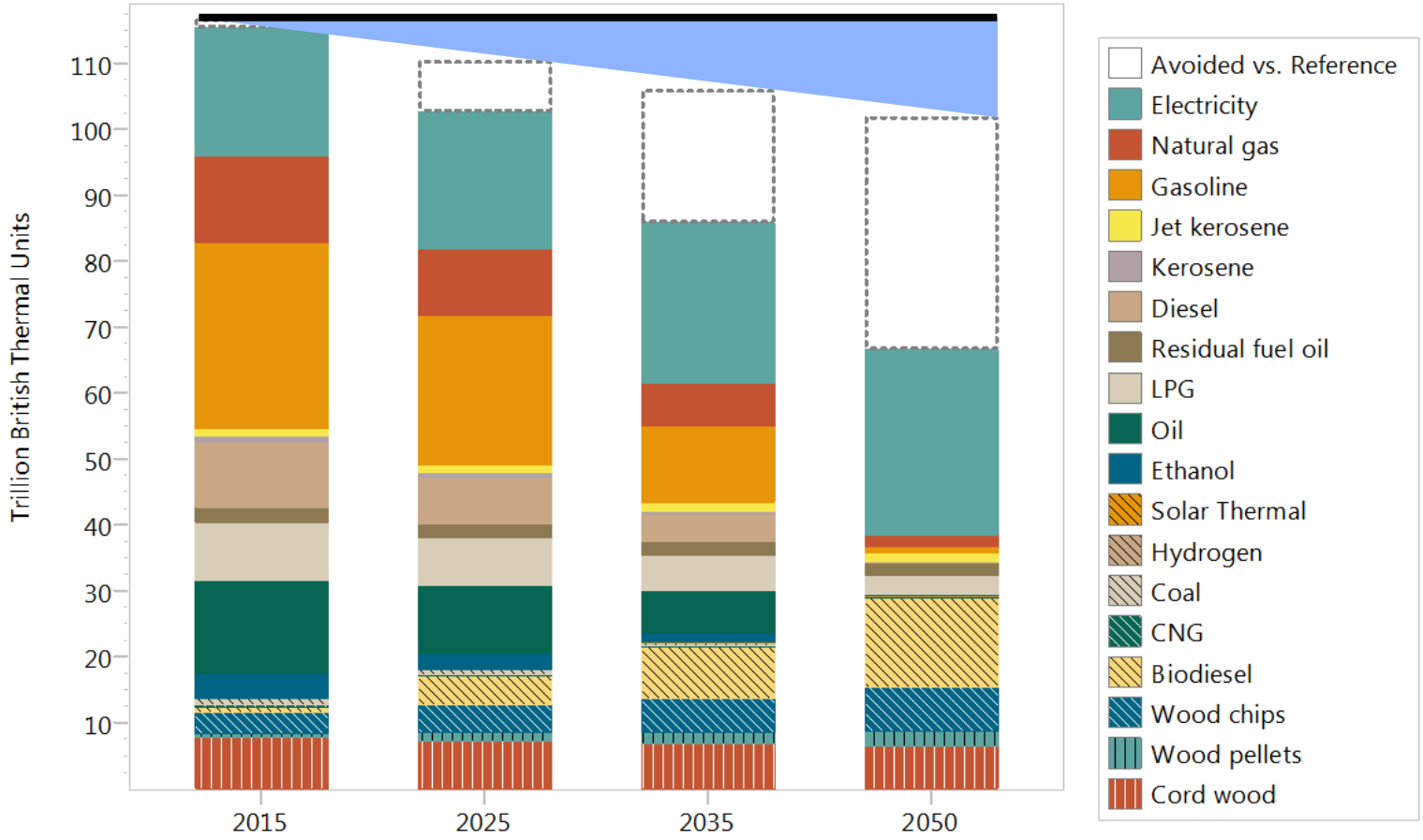
- EE contributes to all these goals <u>at low cost</u>
- Therefore, EE must be part of a comprehensive energy system solution

AND

- EE must be included explicitly as a technology alongside other options



EE: A Component of a Comprehensive System

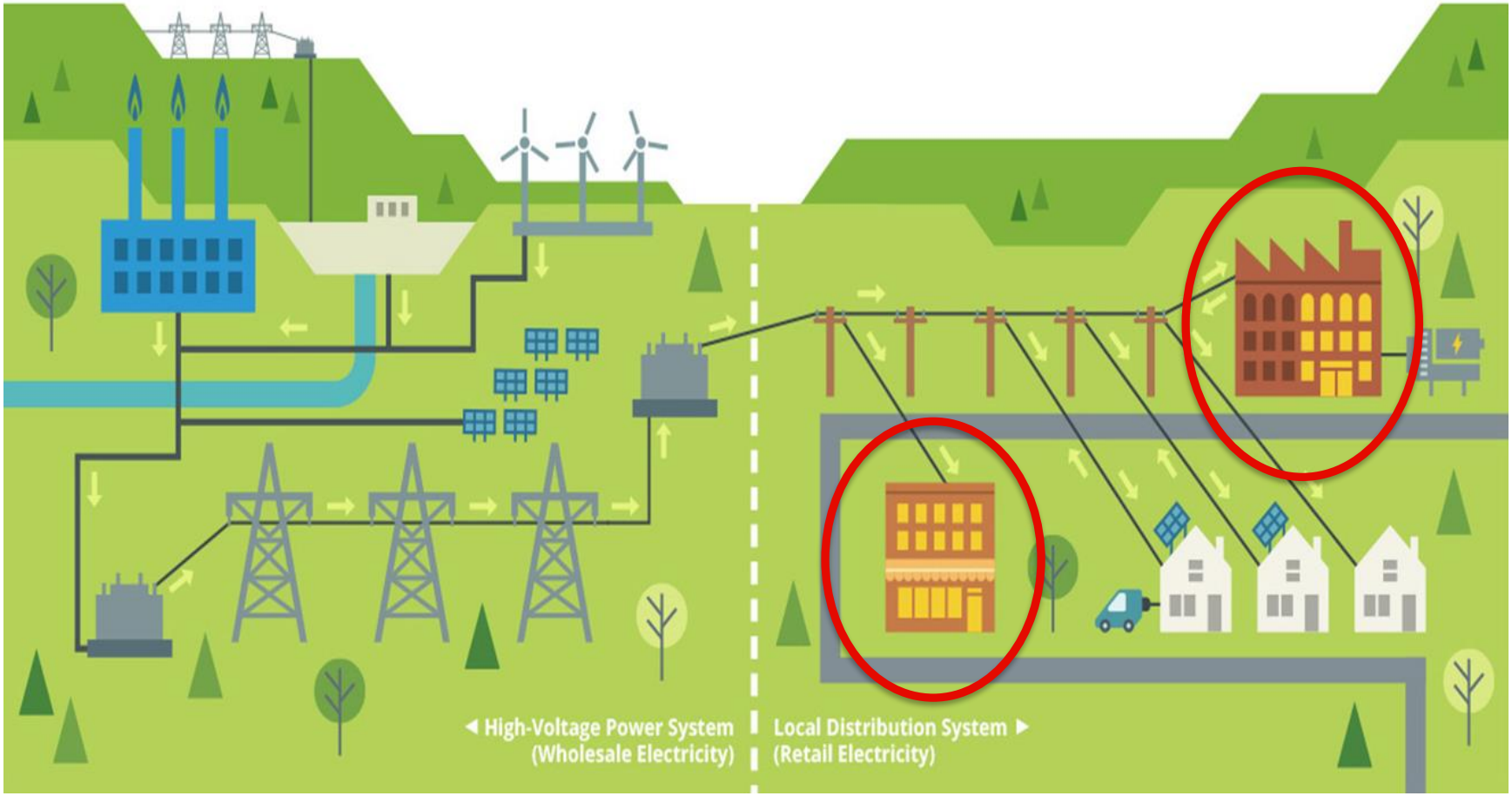


System Scenario for 2050 – Vermont Solar Pathways Report

What We Can Do

- **Be informed and be at the table…**
- Talk to your regulatory folks – make sure they understand EE and its uses and values
- State regulators and energy office staff keep up with grid issues – get to know them and make sure they understand EE and its uses and values
- ISOs have public engagement meetings – attend, and suggest topics
- Planning efforts – do everything you can to encourage comprehensive and system-wide planning and insist that EE be included as a separate resource, rather than as a baseload assumption
- Aggregate with allies for strength and a louder voice – (EDF, NRDC, Sierra Club, CLF, E4TheFuture, ACEEE)
- Speak up often – sooner or later others will begin to remember to include EE!

Energy Efficiency as a Resource



From ISO-NE Regional Electricity Outlook

Contact

Cheryl Jenkins

Vermont Energy Investment Corporation

(802) 540-7603

cjenkins@veic.org