



**VERMONT ENERGY**  
INVESTMENT CORPORATION

# **New England Forward Capacity Market: Evolution and Impact of M&V Requirements**

**ACEEE Market Transformation Workshop  
March 20, 2007**

**Chris Neme, *Vermont Energy Investment Corporation***

# Presentation Overview

- I. Big picture – what, why and when
- II. FCM M&V requirements
- III. Process for development of ISO M&V Manual
- IV. Implications for state efficiency programs

# What is the Capacity Market?

- \$ to ensure sufficient capacity available to meet demand
  - Concerns energy market not enough incentive to build capacity
- Demand and supply resources can both participate
  - Regulators price for agreeing to create market for generators

# Two Phases

- **Transition Period**
  - Pre-established prices (~\$3 to \$4/kW per month)
  - Everyone gets paid, whether capacity needed or not
  - First payment December 2006
  - Ends May 2010
- **Forward Capacity Market (FCM)**
  - Auction establishes price
  - Only those bidding at or under market clearing price get paid
  - First year is June 2010 thru May 2011...
  - ...but work to participate begins February 2007

# Key issues addressed by rules

| <b>Issues/Questions</b>                              | <b>Transition</b> | <b>FCM</b> |
|--|-------------------|------------|
| 1. Establishing Installed Capacity Requirement (ICR) |                   | Yes        |
| 2. Who is eligible to participate                    | Yes               | Yes        |
| 3. Definition of peak capacity                       | Yes               | Yes        |
| 4. M&V requirements                                  | Yes               | Yes        |
| 5. Establishing value of capacity                    | Yes               | Yes        |
| 6. Documentation of qualifications to participate    |                   | Yes        |
| 7. Bidding rules                                     |                   | Yes        |
| 8. Financial assurance requirements                  |                   | Yes        |
| 9. Penalties for non-performance                     |                   | Yes        |
| 10. Who can file for payment?                        | Yes               | Yes        |
| 11. Cost Allocation (load reconstitution)            | Yes               | Yes        |

# FCM Timeline

- 2/07: show of interest letter (intent to participate)
- 4/07: submit quals package (incl. M&V plan) for existing resources
- 6/07: submit quals package (incl. M&V plan) for new resources
- 10/07: ISO approves quals
- 10/07: financial assurance (10 days after approval)
- 2/08: auction takes place
- 6/10: first month responsible for delivering capacity

*Other auctions will take place about every 10 months to gradually get to where they occur 3 years prior to capacity delivery date*

# FCM M&V Manual – Key Requirements (1)

- Project summary
    - Who you are
    - Type of resource
    - Forecast of MW to be bid
    - Details of assumptions underlying that forecast
  - Baseline assumptions
    - Failed equipment: greater of codes/stds or standard practice
    - Early retirement: code/stds or measured baseline
    - New construction: code/stds or standard practice
- Note: standard practice must be documented in plan*

## ISO's M&V Manual – Key Requirements (2)

- M&V approach(es) to savings calculation
  - Option A: Engineering calc with some measured variables
  - Option B: System sub-metering
  - Option C: Facility metering
  - Option D: Calibrated simulation modeling
- Algorithms, assumptions, etc. in savings calculation
  - Must all be documented
  - Must all reference eval studies, industry data, etc.
  - No “professional judgement” or “negotiated agreement”

## ISO's M&V Manual – Key Requirements (3)

- Statistical Precision
  - 80/10 for each individual studies or samples, or
  - 80/10 across multiple studies or samples
- Measurement equipment specs
- Monitoring parameters
  - Minimum requirements for data to be collected by end use
  - Monitoring frequency
- Data validation

## ISO's M&V Manual – Key Requirements (4)

- Independent 3<sup>rd</sup>-party audit
- Can't use studies >5 years old
  - ...unless you can demonstrate they still apply
- Focus on gross savings, not net

## How we got here (1)

- FCM rules developed by ISO w/stakeholders
  - Rules adopted by NEPOOL February 2007
  - M&V Manual builds on those rules
- ISO drafts M&V Manual (10/06 thru 2/07)
- State Program Working Group formed (9/06)
  - to provide input to ISO
  - to begin developing some common assumptions
    - Load shapes
    - Measure lives

## How we got here (2)

- More on state program working group (SPWG)
  - Regulators and program administrators
  - Steering committee (VEIC, NGrid, Schlegel)
  - Organized/Facilitated by NEEP
  - Hired expert consultants to help
  - Very intensive work

## How we got here (3)

- Focus of ISO:
  - must work for all resource types
    - Efficiency, load control, DG, demand response
    - State programs and merchant providers
  - accuracy
  - consistency w/standards for generators
- Focus of states:
  - Recognize complexity of portfolios w/many programs
  - Can't be too burdensome
  - Improvements to accuracy commensurate w/cost

## How we got here (4)

- Numerous drafts of key elements of Manual
- Extensive negotiation between states & ISO
  - Extent of documentation requirements
  - Methods – making IPMVP structure work for programs
  - Statistical precision
- States reach compromise w/ISO staff late Feb.
- NEPOOL votes early March

# Implications of M&V Requirements

- Extensive and different than state regulation
  - Will increase evaluation costs
  - Non-trivial evaluation planning and documentation costs
- Encourages greater regionalization of evaluation
  - Share costs
  - Raise fewer questions
- May not be cost-effective to bid whole portfolio
  - Timing for first FCA reinforces this concern
- Danger of encouraging programs w/high free riders

## Other Issues for State Programs

- Adjust for ISO's different definition of peak savings
- Clarifying ownership of capacity credits
- Bidding to deliver in 2010, but contract ends 2008
  - Not issue for utility administration model
- Don't have approved budget for 2010
- Potential need for composite bids
  - Must have same summer and winter capacity
- Ramifications for bidding below 75% of CONE
- How conservative or aggressive to be in bidding
- What happens to extra money?
- Influx of competition for big customers

# Benefits of Capacity Market (1)

- Possible significant additional \$ for efficiency
  - ~\$2.50 for one CFL (over 6 year life)
  - ~\$150 for SEER 15 central A/C (over 15 year life)
  - ~50% of cost of VT annual portfolio over avg measure lives

*NPVs assuming installed 2007, \$7.50/kW-month starting 2010*

## Benefits of Capacity Market (2)

- Partnerships with new entities
  - VEIC getting inquiries from demand response providers
- Greater confidence in some savings
  - ...though wouldn't be worth cost w/o capacity market
  - M&V manual not ideal for other purposes

# Questions?

Chris Neme

Vermont Energy Investment Corporation

802-658-6060 ext. 1022

[cneme@veic.org](mailto:cneme@veic.org)