NEEP EM&V Forum Annual Meeting

Geographic Targeting of Non-Wires Alternatives to Avoid Transmission Investments

—

Vermont’s Experience

January 14, 2015
Vermont is different

- Small, rural state, ~625K pop.
- 17 distribution utilities
  - 1 investor-owned
  - 2 cooperatives
  - 14 municipals
- Statewide transmission-only utility owned by distribution utilities (73%) and public benefit corp (27%) VLITE
- Vertically integrated while rest of New England has divested
Transmission case example: $157 M Central VT upgrade avoided through Vermont’s transmission planning stakeholder process

Reliability gap graphed as a negative margin—MW below zero need solutions
When EE and expected PV resources applied to gap, transmission upgrade no longer necessary
What happened?

**Late 2011:** ISO-NE publishes preliminary study showing system concerns in Central VT

**Late 2011:** DUs & VELCO form study group per VT formal non-transmission alternatives (NTA) process to resolve

**April 2012:** ISO-NE Solutions Study proposes transmission upgrades to resolve Central VT concerns

*At this point, without VT NTA study requirement, a transmission solution would likely have been implemented*

**Nov 2012:** GMP & VELCO present study group results to ISO-NE showing potential for NTA to postpone Central VT upgrades

**Early 2013:** ISO-NE reassesses need for Central VT upgrades

**Summer 2013:** ISO-NE study confirms $157 million Central VT upgrade deferral
Full NTA analysis: study group evaluates wide range of alternative resources for cost effectiveness.
Vermont policy favors least-cost solution (wires or non-wires), requires collaborative planning & stakeholder engagement

Controversial major transmission project in 2004 led to planning legislation and Public Service Board order

- Legislation (30 V.S.A. § 218c) required prepare a **10-year** transmission plan at least every three years beginning July 1, 2006, including public outreach process
- Purpose of plan: *Identify potential need for transmission system improvements as early as possible, in order to allow sufficient time to plan and implement more cost-effective nontransmission alternatives to meet reliability needs, wherever feasible.*
- PSB Docket 7081 established stakeholder process through negotiated settlement
  - Requires **20-year** long-range transmission plan
  - Goal: *Full, fair and timely consideration of cost-effective non-transmission alternatives*
  - Created Vermont System Planning Committee—statewide reliability planning stakeholder body
Vermont System Planning Committee structure

**Six sectors** with equally weighted votes

**Advisory votes on...**
- Affected utilities
- Solution selection
- Cost allocation
- Implementation strategy

**Binding votes:** (where utilities disagree)
- System level (bulk vs sub)
- Lead utility assignment
VELCO/VSPC planning cycle

VELCO Plan (based on ISO-NE analysis) identifies system deficiencies.

Detailed NTA studies provide greater detail and precision about constraints, analysis of locational effectiveness and relative costs of NTA resources.
VSPC NTA analysis process

• **Step 1: Screening**
  – All projects screened during Long-Range Plan development using adopted NTA screening tool

• **Step 2: Full NTA analysis if “screened in”**
  – All “affected utilities” led by “lead utility” (as defined by 7081 MOU) required to participate

See screening tools at: [http://www.vermontspc.com/about/key-documents](http://www.vermontspc.com/about/key-documents)
In 2013 feed-in-tariff proceeding, distribution-level issues were added to the process and VSPC better integrated EE & DG in planning

- Utilities develop “reliability plans” for any identified transmission or distribution reliability issue. Plans address:
  - Reliability plan requirements (Docket 7081)
  - Energy efficiency geographic targeting
  - Standard offer (feed-in-tariff) geographic targeting (7873) where “sufficient benefit” to the grid exists

- VSPC now charged with recommending both supply side and demand side geographic targeting to PSB annually

- VSPC enables transmission project vetting, one-stop, multi-stakeholder engagement
Clearly defined process ensures proper analysis

(there will not be a test)
Provided GT guidance to stakeholders in 2012, but more work needed for effectiveness

2012 Plan included map *roughly* depicting relative benefit to transmission grid of new generation or load reductions by location

- Color coding very rough, drawn by hand

Zones of benefit based on ISO-NE VT/NH NTA analysis

Benefits much more precisely analyzed in context of full NTA studies
Observations about VT example and process

- EE plays a big role but fills the gap in combination with other resources, which are growing rapidly.
- Integrated look at DG & EE is critical: no one element caused the result.
- Project need is based on forecast, which has many assumptions; could change rapidly in volatile times; regular reassessment needed.
- Benefits of a robust stakeholder process:
  - Regulatory certainty
  - Stakeholder buy-in
  - A little more certainty of the need
- Biggest policy issue: no level playing field for NTA vs transmission funding.
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