

MEETING NOTES

Vermont Department of Public Service (PSD)
Innovative Rate Design Study
Rate Design Initiative Workshop No. 2, January 28, 2020

General Notes

- Stakeholders want to see total energy costs as a Key Performance Indicator (KPI) to illustrate impacts of varying conditions and scenarios
 - There was pushback that power supply costs are the appropriate KPI. The current emphasis on electrification and comparative advantage of clean electricity suggests a broader measure of energy services might appropriately be the focus rather than a narrow focus on power supply. Stakeholders think it should be about total energy costs
- The Stakeholders also suggested resiliency and performance of the grid as a KPI
 - There was an interest in attempting to define or note how Distributed Energy Resources (DER) technologies improved or contributed to the resiliency of the grid. If quantifiable, that contribution to resiliency could be considered.

There seemed to be general agreement that our objectives, as reflected in the KPIs, should not be constrained by what can be readily built into the LSAM model.

LSAM Model Assumptions

- It is important to note what is dynamic in the model (i.e., internal to the workings of the model or endogenous) vs. input/assumptions (solar adoption is dynamic, informed by inputs and market, while EVs/Home electrification is more user defined (external to the model) as a projection/input). Identifying dynamic vs. inputs provides an opportunity for others to review, refine, and support the data underlying some of the projections or calculations.
- There was a question on how behind the meter (BTM) solar photovoltaic (PV) vs. utility scale solar PV is integrated in model. Both are included, but going forward the econometric forecast informs the BTM PV adoption. Utility scale solar PV is an input (externally defined).
- Distribution costs discussion / input to LSAM:
 - VEC – rural issues exist integrating or accepting larger amounts of DER. There are portions of the system that require investment, such as longer runs that must be upgraded to serve loads.
 - GMP – recently completed an integrated resource plan (IRP). The IRP showed that major investments were not likely in their initial planning horizon to support greater adoption of DERs. However, GMP would like a distribution engineer to re-confirm.

- There was a discussion on DER actually providing benefit to the grid and providing value for resiliency vs. is there a cost to upgrading the distribution system to provide for all the DER coming to the system. Is there the potential that strategic siting of DERs may support the avoidance or delay of investments in the system?
- Greenhouse Gas (GHG) Inputs/Assumptions:
 - Include fuel oil as fuel source / GHG emission rates for electrification of heating systems.

LSAM Model Overview for Breakout

- There was a discussion regarding the model's inclusion of the compensation or quantification of the utility's purchase of excess generation. This amount will offset the savings realized from PV in the wholesale costs or purchases.

Reporting out from Breakout Discussion and Scenario

The groups evaluated a 2030 scenario with increasing EV and DER penetration on the system, then designed rates to attempt to mitigate the negative impacts and achieve a more optimal or win-win result for utilities and the customers. Overall, the group's results mirrored one another. Most groups realized or came to the result that a larger ratio of on- to off-peak periods in time-of-use (TOU) rate options were required to realize more optimal system performance.

Group 1

- How effective were you? Were the results as expected?
 - GMP wanted a 10:1 ratio for on- /off-peak
 - \$0.50/kWh on, \$0.05/kWh off-peak
 - Summer: 18 Hours Ending (HE) thru midnight
 - Non-summer: 6am-9am and 18 HE thru midnight
 - Total system costs down 6.5%, retail load went down 11%
 - Average rate went up 4.5%
 - Public relations is a concern

Group 2

- Thought 5x ratio for on- /off-peak was too aggressive
- Shorten the TOU hours to focus on fewer, or more targeted hours
- Rather 8.4% increase reduced to 5.9%, kept 4x ratio on- /off-peak
- Used 6pm-9pm hours on-peak in the summer, which seemed effective
- Keeping peak hour window smaller in the winter did not have as much of an impact

Group 3

- \$0.60/kWh on-peak, \$0.05/kWh off-peak
 - Summer peak: 4pm-8pm
 - Summer mid-peak: 2pm-3pm
 - Non-summer: 6am-8am, 3pm-7pm
 - Mid-peaks around the on-peak periods
 - Still dialing in rates / peak and off-peak hours
 - New RNS (transmission) peaks are 30+% increased, pushing to 8pm-9pm period

Group 4

- Input VEC Tier 2 rate
 - Similar results to the default even changing pricing signals in customer charge
 - \$0.50/kWh on-peak, \$0.05/kWh off-peak
 - Net result was 4.5% increase
 - Slightly increased monthly charge to \$20 (From \$14 and \$19)

Group 5

- Increased difference on- /off-peak (\$0.50/kWh on-peak, \$0.02/kWh off-peak)
- Changed policy variables
 - Increased EV (75% market penetration by 2040)
 - Increased at-work charging to 100%
- Shifted on-peak to 6pm-10pm

Group 6

- Tried to scale the model to 16MW, which didn't work smoothly

Steering Committee Session After Workshop

- Feedback that there's diversity in the room, and there might be more focus on assumptions development as opposed to tinkering with the model itself.
- Mike Burke from GMP would be a good resource to discuss Distribution Cost impacts.
- The group felt there were diminishing returns on modeling. We should transition to focus on rates / rate structures (how to best use the Stakeholder group time).

- It was suggested the Steering Committee develop bookend scenarios in the model for rates / rate structures. This would inform eventual strategic or innovative rate making decisions.
- The group and Stakeholders likely need more confidence in model. This should come from Technical Advisory Group.
- TOU Rates alone will not get us to Carbon reduction. We should think about multiple approaches or a number of tactical actions to achieve a broad goal.
- For rate making, flexible loads we should think about the concept of different tranches – 1) at Customer level control, 2) at Utility level control, 3) at Third Party level control (manage dynamic rates).

Action Items from Steering Team Meeting

- Need greater control over EV adoption scenarios. EV assumptions and input flexibility to be added to LSAM Add-In.
- Carbon assumptions will be vetted by Jared Duval at Energy Action Network.
- Andy to develop a list of LSAM Assumptions to disseminate to group for feedback and/or refinement.
- Need to clarify the rate pressure being calculated in LSAM, what it means as a portion of total Utility costs.
- NewGen to think about how we are adding dynamic rates.
- NewGen and PSD to further evaluate and define possible distribution cost impacts to input into model.
- NewGen to consider how to improve the user interface on the model.