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STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK



Read-Ahead
Assessing Performance of Demand Flexibility Workshop
March 17, 2021 — 12:30 p.m. to 2 p.m. EST

The objective of this workshop is to identify paths to resolve three key measurement and verification (M&V) issues for next-generation demand flexibility: barriers related to analysis and reporting, barriers to data access, and overlaps between demand flexibility programs, rate designs and markets. Workshop participants will inform how public utility commissions, state energy offices, utilities, regional grid operators, and other service providers and stakeholders can achieve robust performance assessments of the grid services that demand flexibility provides. Our collective conclusions will support the U.S. Department of Energy's (DOE) [Grid-Interactive Efficient Buildings initiative](#).

This is the second of two workshops. The first workshop identified M&V-related barriers and the most pressing actions needed to address them, including a preliminary discussion of who should take responsibility for implementing each of the actions. Together, the workshop discussions will inform steps DOE and others can take to mitigate high priority M&V barriers, with the ultimate goal of securing confidence in performance assessments of demand flexibility as a grid resource.

The workshop discussion will address the questions on the following pages. For background, see the introductory [presentation](#) and [read-ahead packet](#) for the first workshop, held in January. Other useful resources are the SEE Action Network report, [Performance Assessments of Demand Flexibility from Grid-Interactive Efficient Buildings: Issues and Considerations](#), and the Active Efficiency Collaborative's [Guiding Principles for Next-Generation Performance-based Utility Program Models](#).

Agenda

Participants will submit comments using the Zoom chat function, "raise hands" to speak, and provide input on key questions through polling.

- 12:30 p.m. EST** **Welcome and Stage Setting** – Clay Nesler, on behalf of Alliance to Save Energy
- 12:35 p.m. EST** **Opening Remarks** – Monica Neukomm, DOE Building Technologies Office
- 12:40 p.m. EST** **Summary of First Workshop Findings** – Kelly Parmenter, Berkeley Lab consultant
- 12:50 p.m. EST** **Discussion** – All participants, facilitated by Clay Nesler
- 2:00 p.m. EST** **Adjourn**



Workshop Discussion Topics

This workshop will discuss and define actionable solutions to key M&V issues in scaling up demand flexibility. The discussion will be organized around three primary questions that begin with “How.”¹

While we will primarily focus on next-generation demand flexibility, our discussion will include issues related to current applications of demand flexibility in order to “connect the dots” to future issues with more complex demand flexibility applications.

Following are the three primary questions we will address at the workshop, with a series of discussion questions for each one.

1. How can we standardize and simplify M&V approaches (for example, standardized baselines, calculation methods and reporting), and what strategies will encourage consensus around these approaches among utilities, RTOs/ISOs, regulators, aggregators, energy service companies and other service providers? (See Appendix 1)

Discussion questions:

- What differences need to be addressed during the standardization process for demand flexibility M&V — for example:
 - Different valuation of demand flexibility (e.g., high value equals high rigor, and vice versa)
 - Different demand flexibility objectives (e.g., resilience, extreme weather response, or deferral of investments in generation, transmission or distribution)
 - Different demand flexibility modes and combinations (e.g., shed, shift, generate, modulate)
 - Different rates, programs and markets
- What are the steps to Standardize Approaches for M&V of next-generation demand flexibility? (See left column in Appendix 2 for a draft process.)
 - What steps are missing?
 - What steps should be removed or changed?
- What barriers must be overcome in developing guidance for standardizing M&V approaches — for example, a tendency of group efforts to result in “least common denominator” solutions, difficulty coming to consensus, and different jurisdictions assigning different value to demand flexibility resources?
- What research, development, and demonstration do we need to do to inform standardizing M&V approaches?

¹ Example M&V guidelines include [IPMVP](#), [Uniform Methods Project](#), [M&V 2.0](#), [EnerNOC/CEE DR Baseline white paper](#), [NAPDR M&V for DR report](#) and [DOE/FEMP M&V Guidelines for Performance-Based Contracts](#).



2. How can we improve data access — including enhanced use of Advanced Metering Infrastructure (AMI) and technologies such as building automation systems, submeters, and other sensors and devices — while ensuring data accuracy, security, and privacy; interoperability; and equitable solutions?

Discussion questions:

- Does current AMI implementation have limitations with respect to demand flexibility M&V? If so, are these limitations with the metering technology, backend data integration or other aspects?
- Do we need technology solutions (such as building automation systems, submeters, and other sensors and devices) to improve access to data for M&V in areas that do not have AMI? Do we need any of these technology solutions in locations that already have AMI? Is there a difference in how you respond to these questions for residential buildings vs. commercial/industrial buildings?
- What are the steps to improving data access for M&V of next-generation demand flexibility? (See middle column in Appendix 2 for a draft process.)
 - What steps are missing?
 - What steps should be removed or changed?
- What barriers must be overcome in developing guidance for data access — for example, trade-offs between cost, data security, privacy and interoperability?
- What research, development, and demonstration do we need to do to inform recommendations for improving data access, while ensuring data accuracy, security, and privacy; interoperability; and equitable solutions?

3. How can we improve coordination between utility programs and rate designs? How can we improve coordination between utility programs and RTO/ISO markets?

Discussion questions:

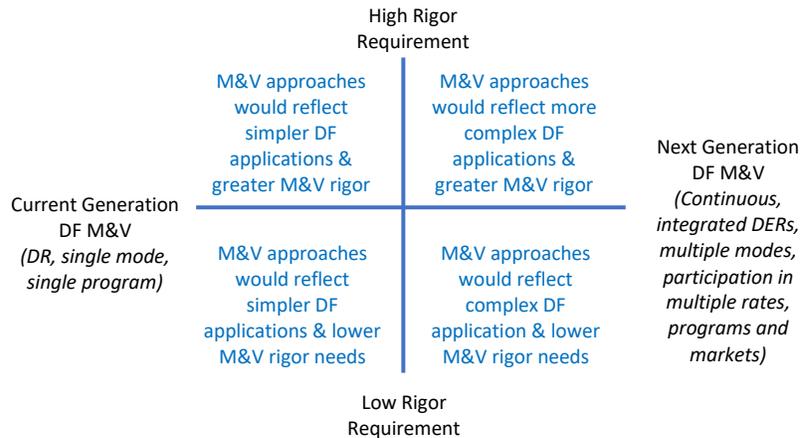
- What are the M&V issues (for example, baseline impacts and potential for double-counting) associated with multiple programs and rate designs offered by a *single* utility?
- What are the M&V issues associated with improved coordination between *multiple* entities (for example, a utility operating in an RTO/ISO region) with different goals and constraints, such as resources and regulations?
- What steps are needed to Improve Coordination for M&V of next-generation demand flexibility? (See right column in Appendix 2 for a draft process.)
 - What steps are missing?
 - What steps should be removed or changed?

Closing Questions

- If one or more working groups are established to address the issues we discussed today, what entity should lead the formation and facilitation?
- What additional comments do you have on the pathways for resolving the M&V issues we discussed today?

Appendix 1. Simplifying Approaches to Analysis and Reporting

Simplifying approaches should start with mapping which approaches to use for (1) different applications (e.g., different demand flexibility (DF) modes and combinations, whether for programs, rates, or markets and in various combinations) and (2) different rigor requirements (e.g., relative to value of the resource in the jurisdiction, size of the program/budget). M&V guidelines for current generation DF and next generation DF could include requirements for low and high rigor cases. See diagram below.



Developing simplified approaches could consist of the following steps (see Appendix 2):

- Identify technical experts and stakeholders for working group.
- Convene working group to define objectives, roles and responsibilities.
- Compile and summarize prior work on metrics, baselines, and M&V protocols that is relevant to DF M&V. Catalog existing case studies.
- Define simple versus complex DF applications and define criteria for low rigor versus high rigor M&V.
- Develop initial guidelines for DF performance assessments that begin with simple M&V practices common to M&V for current generation DF (i.e., well-established metrics, existing baseline constructs, assessments of individual modes, use of existing smart meter data, individual building level analysis, participation in single utility program).
- Conduct demonstration projects for “simpler” DF M&V practices and disseminate results.
- Use lessons learned from demonstration projects (*as well as from other new research and advancements that take place in parallel*) to update guidelines so that they also cover the more sophisticated practices needed for M&V of next generation DF (e.g., new metrics; new baseline constructs; assessing multiple modes in combination; using data from building automation systems, submeters and additional sensors; aggregation of buildings; assessing participation in multiple programs, rates and markets; and assessing performance in real time).
- Conduct demonstration projects for more sophisticated DF M&V practices, disseminate results.
- (*Iterate above steps as needed to develop M&V solutions that address more complex DF.*)
- Establish formalized guidelines/standards for M&V of grid services provided by DF.
- Provide technical assistance along the way.

Appendix 2. Draft Process Flow Diagram

STARTING WITH SIMPLE M&V AND ADDING SOPHISTICATION TO MEET THE NEEDS OF NEXT GENERATION DEMAND FLEXIBILITY PERFORMANCE ASSESSMENTS

