# Evaluation of Energy Efficiency Programs by the States Common Purposes, Differing Approaches

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# Research Objectives

- Understand the evolving landscape of EM&V among the states
  - Update prior research from 2012
- What is the administrative framework for evaluation?
  - Who administers?
  - What oversight?
  - What stakeholder/public involvement?
- What specific evaluation practices are in place?
  - Gross vs net savings?
  - Deemed and meter-based savings?
- How are evaluation results used for decision-making?



# Methodology

- Survey of regulatory staff & evaluation professionals in 48 states + DC with ratepayer-funded energy efficiency
- Survey instrument was an Excel spreadsheet
- 28 total questions
  - Yes/no
  - Multiple options
  - Some open-ended answers
- Auto-filled some data from NESP's DSP (Database of Screening Practices) and asked respondents to validate
- 44 out of 49 states responded to survey

#### Section One - Evaluation Overview Time to Complete: 5 Minutes or les In general, how is the task of evaluating utility-funded energy efficiency programs handled in your state? (i.e., the task of determining how much energy savings has been achieved by the programs) Specifically ... a. In your state, are evaluations overseen by utilities, state commissions, or a separate entity? Utility Commission (i.e., who do the evaluators report to?) "Other" could mean an efficiency-sp b. Are evaluations done separately for each utility, or are they done on a combined / state-Separate by wide basis? Utility Statewide Independent c. Who conducts the actual evaluation studies? Contractors d. Are evaluation reports publicly available? (e.g., filed in public dockets) If yes, how would an interested person or organization access them? e. Is there an opportunity for other parties to be involved with the evaluation process? (e.g., customer groups, environmental groups, state agencies, stakeholder collaboratives) If "Yes", please explain:

f. What is the overall role of the Public Utilities Commission or Public Service Commission with respect to evaluation? (please briefly describe)







Survey Results: Evaluation Administration



# Administrative Framework

- Utilities have a predominant role in administering EM&V
  - 57% of states reported evaluations are administered fully or partially by utilities
- Commissions administered EM&V in 39% of states
- Other administrators included:
  - State EE utilities (ie. Efficiency VT, Efficiency Maine)
  - Nonutility program admins (i.e. Energy Trust of Oregon)





# Role of Regulatory Commissions

- In 93% of states, the commission plays a role in EM&V
- 59% of states have a more formal role
  - 43% approves evaluation plans
  - 16% directly manages evaluation
- Commission provides general oversight in remaining 34%





#### Who conducts evaluations?



- Most (78%) evaluations are conducted by independent evaluation contractors
- This helps minimize bias and assure independent judgment in evaluation methodology



#### Public Involvement in Evaluation



- Majority (74% of states) allow for public comment and input during evaluation process
- 95% of states make evaluation results publicly available



#### Evaluation Methods



#### Net Versus Gross

- **18 States** (43% of respondents) reported using **both net and gross** savings calculations at various stages in EM&V
  - This is higher than in 2012 where just 9 states (21%) reported using both
- Increase in using both is likely related to tracking GHG emissions reductions





#### **Evaluation Protocols**



- Most states had EM&V protocols in regulatory documents and/or technical reference manuals (some have both and overlap)
- The use of TRMs has increased
  - 17 total states reported using them for EM&V (up from 13 states in 2012)
- Standard practices guidebooks help advance practices and create more consistency



# Use of Advanced Metering (AMI) Data



A minority of states reported using AMI data in evaluations and to determine program payments. AMI represents a significant and under-utilized resource for demand-side programs (Gold and York 2020).



# Use of Evaluation Results



Number of states responding affirmatively



# Key Takeaways

- A wide variety of approaches among the states, but some commonalities, including:
  - Underlying methodologies and evaluation techniques
  - Use of independent contractors to perform evaluations
  - >Use of evaluation results for general program oversight
  - Opportunities for public involvement
  - ➤Use of technical reference manuals (TRMs)



# Key Takeaways

- Oversight and transparency in the evaluation process are vital to improve credibility and reduce bias
  - States should work to achieve a fair, transparent EM&V process that engages with key stakeholders and the public
- New and emerging technologies, such as AMI, demand response and distributed generation/storage are less common, but playing an increasing role in EM&V





# Resources & References

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# Thank You!

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