Principles, Key Steps and Process – On-the-Ground Experience with the National Standard Practice Manual (NSPM)

Presented at the 2019 ACEEE National Conference on Energy Efficiency as a Resource

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About the National Efficiency Screening Project

NESP's mission is to **improve cost-effectiveness screening practices** for energy efficiency and other distributed energy resources (DERs).

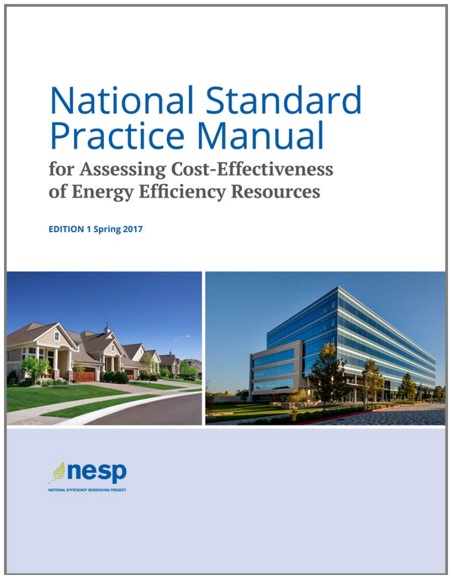
NESP joins organizations and individuals with **a common interest in improving the way that utility customer-funded energy efficiency and other DERs** are assessed for cost-effectiveness and compared to other resource investments.

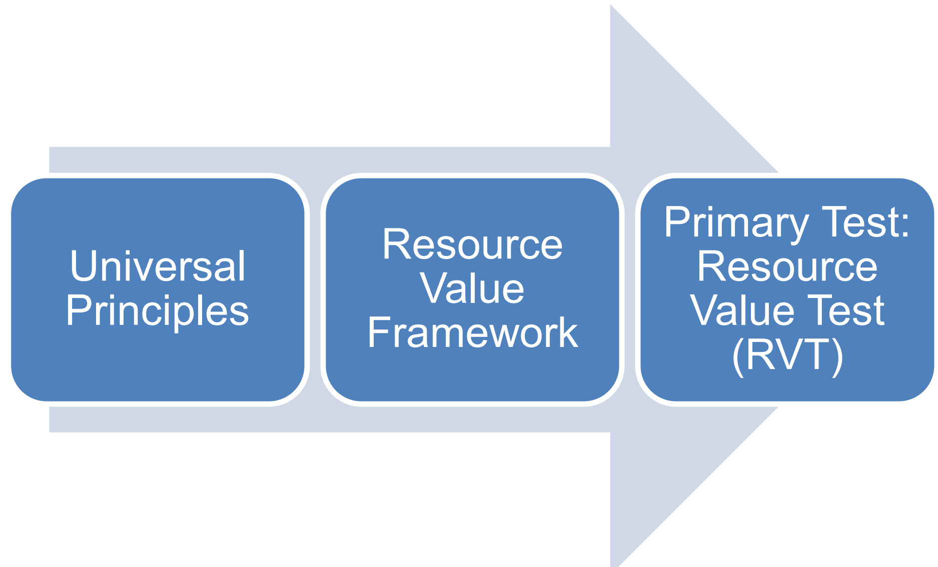
NESP is a stakeholder organization and is open to all organizations and individuals **with an interest in working collaboratively to improve cost-effectiveness screening practices.**

E4TheFuture serves as NESP coordinator under the guidance of an Advisory Group, and manages its publications. **Implementation of NSPM in jurisdictions** is undertaken directly by interested stakeholders.

NESP work includes the NSPM and the Database of State Efficiency Screening Practices (DSESP). Funding for NESP work to date is provided by E4TheFuture, Energy Foundation and the US DOE/LBL.

NSPM for EE (May 2017)

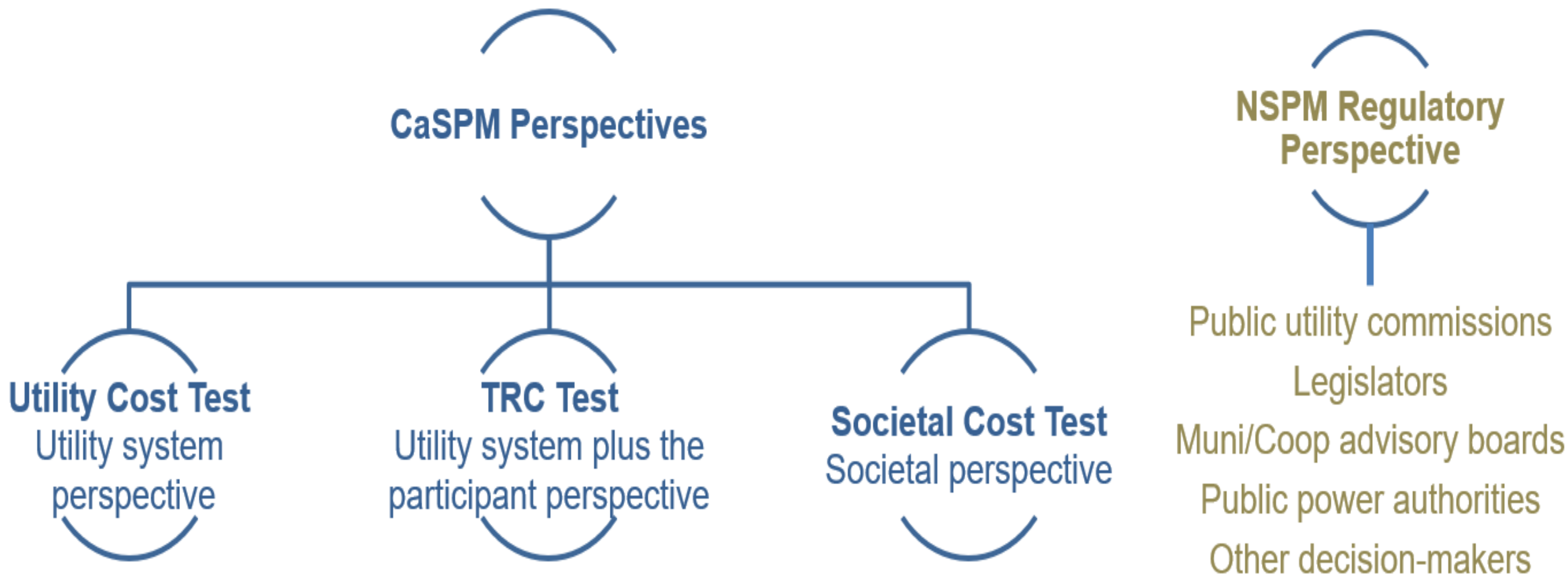




NSPM Principles:

1. Treat EE as a resource
2. Align with applicable state policies
3. Account for relevant impacts (based on applicable policies) even if hard to quantify)
4. Treat costs and benefits symmetrically
5. Conduct forward-looking analysis (that captures incremental impacts of EE
6. Ensure transparency in assumptions and results

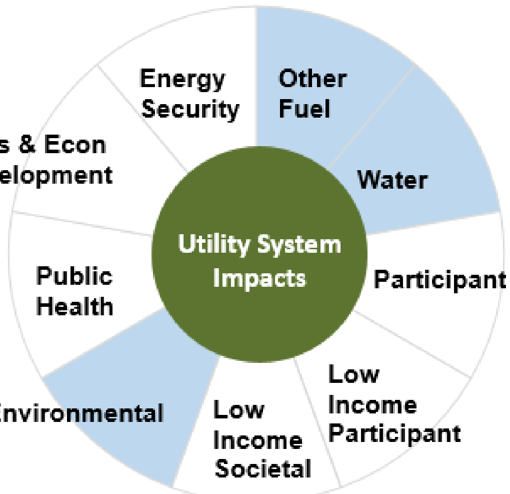
RVF – from who's perspective?



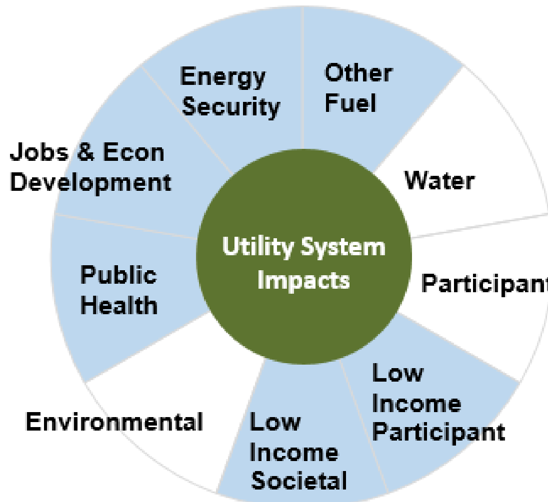
- California Standard Practice Manual (CaSPM) – test perspectives are used to define the scope of impacts to include in the 'traditional' cost-effectiveness tests
- NPSM introduces the 'regulatory' perspective, **which is guided by the jurisdiction's energy and other applicable policy goals**

Does your state's RVT = UC/PAC, TRC, or SC test? … or a state-specific test?

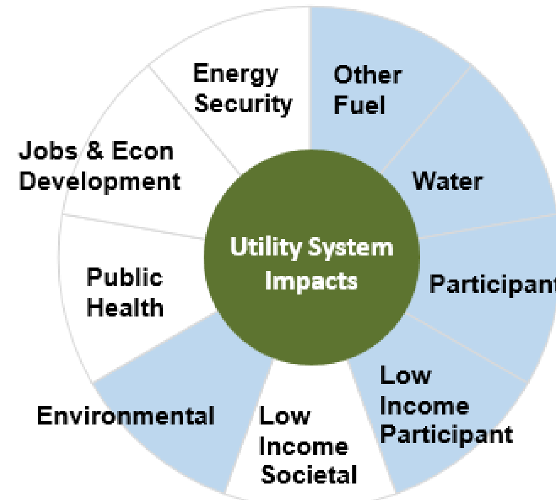
JURISDICTION 1: RVT



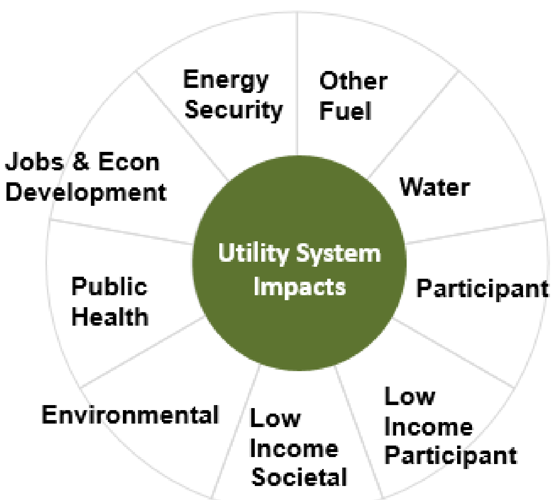
JURISDICTION 2: RVT



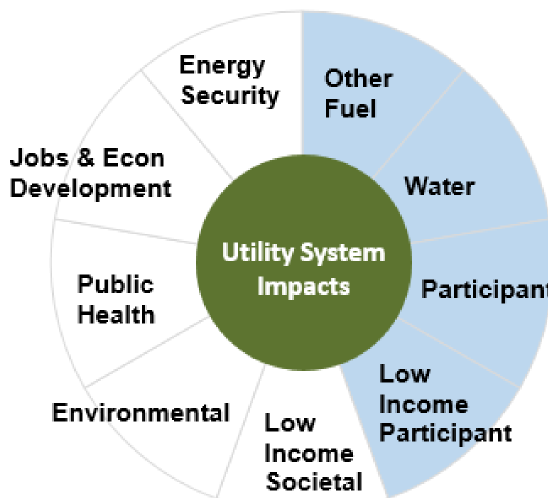
JURISDICTION 3: RVT



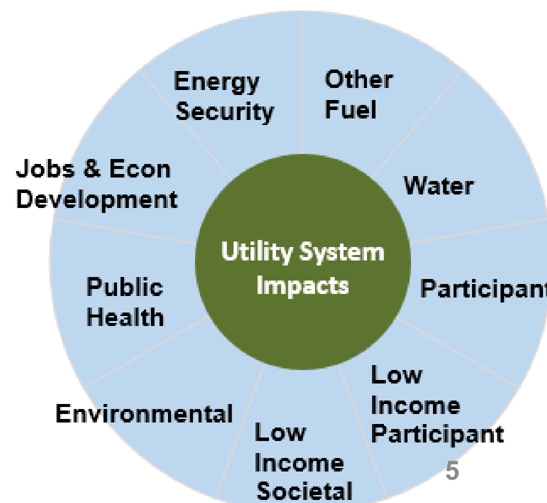
JURISDICTION 4: RVT = UCT



JURISDICTION 5: RVT = TRC



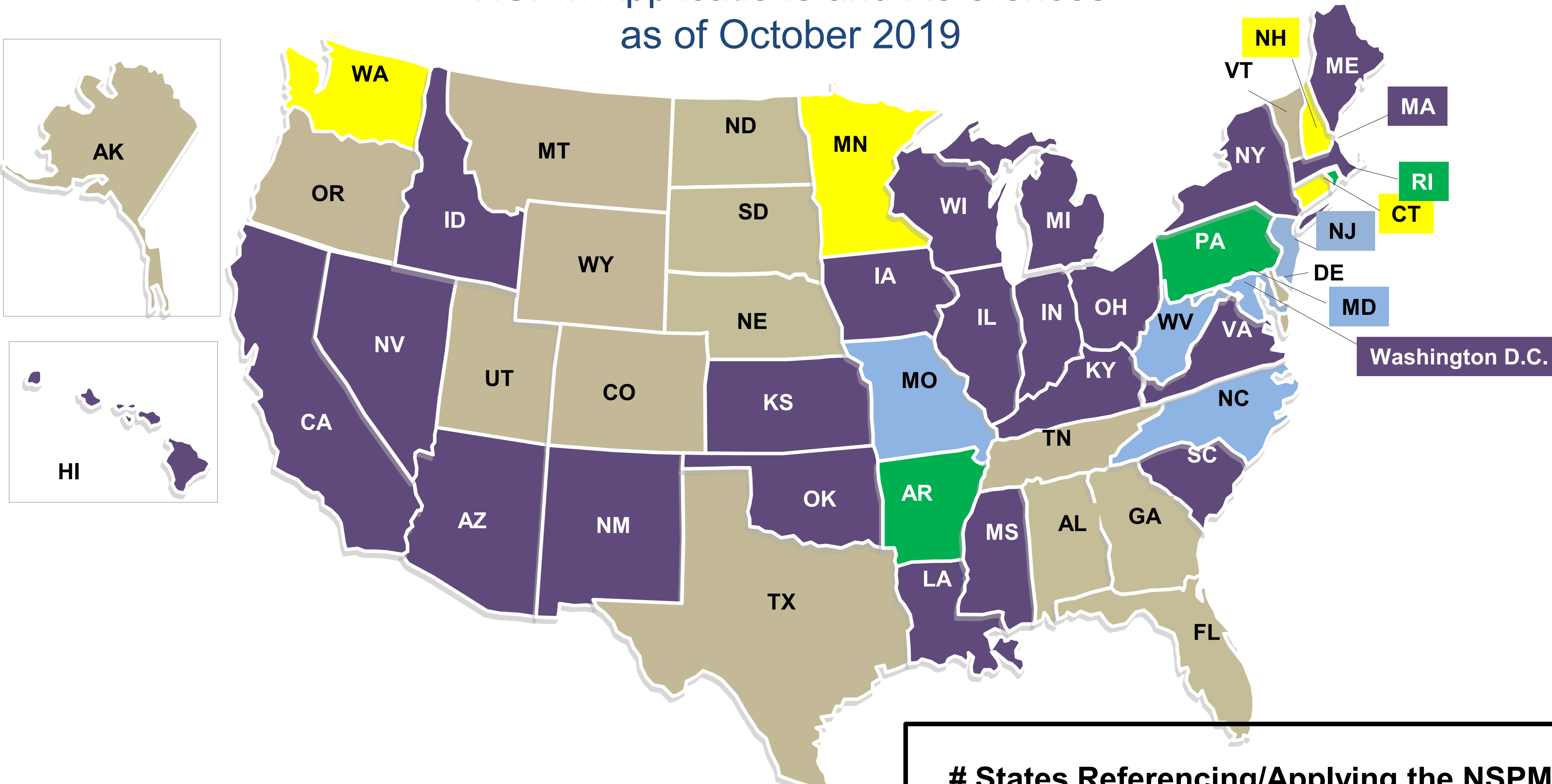
JURISDICTION 6: RVT = SCT



nesp

NSPM Progress

NSPM Applications and References as of October 2019



 # States Referencing/Applying the NSPM

3	PUC Order (final/tentative) on use of NSPM/RVT
4	Actively applying NSPM to review current test
5	In process of learning about the NSPM
22	References made in PUC/legislative proceedings

Let’s take a closer look at NSPM ‘on-the-ground’ experience

- Arkansas
- New Hampshire
- Washington
- Minnesota

Case Studies available at: https://nationalefficiencyscreening.org/resources/case-studies/

State process for applying NSPM

What we are generally seeing…

6-9+ months

State outreach
- Webinar and/or
- In-person meeting
- Stakeholders/ PUC

2-3 months

PUC staff directive/order
- Apply the NSPM
- Can we improve CE testing?
- Report back…

6-12 months

PUC staff led stakeholder process
- NSPM framework applied
- Check alignment with principles
- Develop report & recommendations

2-4 months later…

PUC Order
- Adopt/modify stakeholder recommend-ations
- Prioritize areas of focus

Implementation: PUC staff led changes to CE testing with stakeholder input

Processes take time...

Arkansas – NSPM Case Study

Arkansas Case Study - Overview

- During 2017: direct outreach to state PSC, including Commissioner joining panel at NARUC conf breakfast meeting **to share perspective on CE testing and NSPM**
- Dec 2017: a PSC order required the Parties Working Collaboratively (PWC) stakeholder group **to apply the NSPM framework** to review its current practice
- April-Oct 2018: well-facilitated PWC process reviewed state practice relative to 6 NSPM principles → **issued a** Case Study **report with recommendations to PSC** for better aligning state's test with principles
- May 2019: **PSC issued** **Orders 31 and 48, (Dockets 10-100-R and 13-002-U)** responding to PWC recommendations
- **PWC now responding to the PSC order …**

AR – Key Q's for NSPM Core Principles (1)

Principle 1: Treat Efficiency as a Resource

- Are all utility system impacts included in test (costs and benefits)?

Principle 2: Test Should Reflect State's Policy Goals

- What do state's policy goals suggest about categories of non-utility system impacts that should be included in its test? Are all of them included?
- Is the discount rate being used consistent with state policy objectives

Principle 3: Do Not Exclude (Relevant) Hard-to-Quantify Impacts

- Is quantification challenge being used as basis for excluding any relevant impacts?

Principle 4: Treat Benefits & Costs Symmetrically

- For categories of impacts included in test – both utility system and non-utility system – are costs and benefits both being fully valued?

AR – Key Q's for NSPM Core Principles (2)

Principle 5: Assess Relative to What Would Happen w/o EE

- Do analyses include only future costs and benefits (no sunk costs)?
- Do analyses value marginal utility system impacts?
- Do analyses treat free rider program costs as "baseline" (i.e. not a cost) if it includes participant impacts?
- Does BCA cover period sufficiently long to capture all EE impacts?

Principle 6: Ensure Transparency in Design & Application of Test

- Is the rationale for what impacts are included in the test clear?
- Is it clear what impacts the utilities are including in their test applications?
- Are the methodologies used to estimate values for EE costs and benefits clear and publicly reviewable (except where confidentiality is absolutely necessary)?

AR Case Study – Policy Review Excerpt

Energy Efficiency Policy/Source	Summary/Description	Legislative/Administrative Statement of Policy/Purpose	AR Policy Support for Impacts to Potentially Include in EE Cost/Benefit Analysis	AR Policy Relevance to Other NSPM & Cost-Effectiveness Issues
Energy Conservation Endorsement Act of 1977, Arkansas Code §23-3-401, et seq. [Enacted by Act 748 of 1977, effective 7/6/77 except as subsequently noted]	The primary source of statutory authority for energy efficiency policy for the State of Arkansas (the "Energy Conservation Act").	**§ 23-3-402** – The General Assembly recognizes that enormous amounts of energy are wasted by consumers of all classes and economic levels due to inadequate insulation of buildings and other inefficiencies in the use of energy. The overriding public interest in the conservation of natural gas and oil, as well as the use of alternative forms of energy, is indisputable. **§ 23-3-404** – It shall be considered a proper and essential function of public utilities regulated by the Arkansas Public Service Commission to engage in energy conservation programs, projects, and practices which conserve, as well as distribute, electrical energy and supplies of natural gas, oil, and other fuels.	• Utility system impacts • Other fuel impacts • (maybe ???) participant impacts	
Energy Conservation Act, § 23-3-405(a)(1)(A), effective 7/6/77	Gives extensive authority to the Commission to promote the development of utility energy efficiency programs.	**Section (a)(1)(A)** – The General Assembly authorized the Arkansas Public Service Commission to propose, develop, solicit, approve, require, implement, and monitor measures by utility companies which cause the companies to incur costs of service and investments which conserve, as well as distribute, electrical energy and existing supplies of natural gas, oil, and other fuels.	• Utility system impacts • Other fuel impacts	
Energy Conservation Act, § 23-3-405(a)(1)(B), added by Act 1102 of 2017, effective 7/30/17	Authority to promote EE programs for utility customers sixty-five (65) years and older or low income eligible.	**Section (a)(1)(B)** – The commission is authorized to order, require, promote, or engage in energy conservation programs and measures for the benefit of utility customers who are sixty-five (65) years of age or older or who meet the income eligibility qualifications for the Low Income Home Energy Assistance Program administered by the Department of Human Services.	• Low income impacts	
Energy Conservation Act, § 23-3-405(a)(2), effective 7/6/77	Approval of programs for elderly or low-income persons	**Section (a)(2)** – After proper notice and hearings, the energy conservation programs and measures may be approved and ordered into effect by the commission if the commission determines that the energy conservation programs and measures will be beneficial to the ratepayers of the public utilities and to the public utilities themselves.	• Utility system impacts	

AR – Alignment with NSPM Principles

	NSPM Principles					
Utility Status	**#1: Treat Efficiency as a Resource**	**# 2: Policy Goals**	**#3: Hard-to-Quantify Impacts**	**# 4: Symmetry**	**#5: Forward-Looking Analysis**	**# 6: Transparency**
Overall Portfolio	◕	●	◑	◑	◕	●
AOG	◕	●	◑	◑	●	●
BHEA	◕	●	◑	◑	●	●
CenterPoint	◕	◕	◑	◑	●	●
EAI	◕	●	◑	◑	◑	◑
OG&E	◕	●	◑	◑	◕	●
SWEPCO	◕	●	◑	◑	◕	●
Fully Met = ● Mostly Met = ◕ Partially Met = ◑ Did Not Meet = ○						

AR PWC Recommendations for PSC

1. Consider previously stated policy interest in the environmental, energy security and economic development (e.g. 2007 policies?)
2. Consider providing clarity on areas of current utility inconsistency (e.g., avoided T&D costs, use of marginal line loss rates, discount rates, handling of incentives to free riders, valuing carbon emission reductions)
3. Consider adding low income NEBs
4. Consider support for quantifying some additional participant NEBs to help mitigate current asymmetry
5. Consider requiring Arkansas utilities to better document utility system & non-utility impacts included in tests

AR PSC Response in Orders – largely adopt recommendations
Orders 31 and 48, (Dockets 10-100-R and 13-002-U)

6. PWC meetings in process to address commission order. Steps to ensure alignment with NSPM Principles not fully clear…

New Hampshire – NSPM Case Study

New Hampshire – Timeline

- **2018 - Informational meetings with PUC staff and stakeholders** on the what/why/how on NSPM…
- **March 2019 - PUC staff embarked on NSPM 7-step process** with state Benefit-Cost Working Group and consulting support (Synapse Energy Economics)
- **Working Group:** PUC staff, utilities, OCA, NGOs
- **Aug - Oct 2019 – Synapse develops draft and final report for** Working Group review/input.
- **Final report October 14, 2019.** Will be submitted to commission for review and consideration

Primary vs Secondary Tests

Primary Test answers threshold question:

- *What is the universe of resources whose benefits exceed their costs and therefore merit acquisition (in lieu of acquiring other supply- or demand-side resources)?*
- When applying a primary test, regulators should weigh its results alongside e.g., results of secondary tests; least-cost planning imperatives; rate, bill, and participation impacts; customer equity and any other important policy goals

Secondary tests help guide understanding of EE impacts by answering:

- *How best to invest ratepayer funding in energy efficiency resources?*

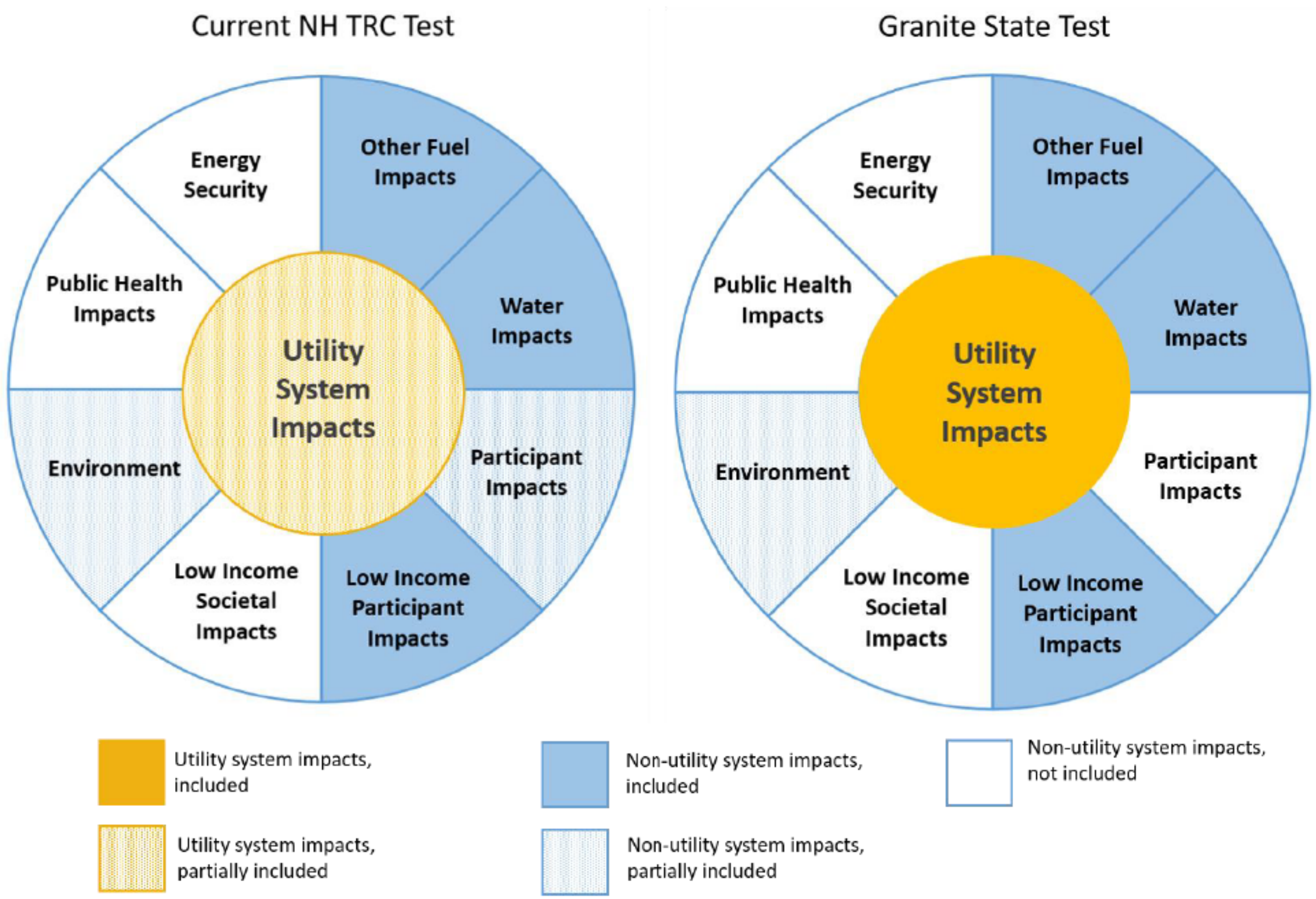
NH effort focused on both category of tests

NSPM 7-step Process

Step 1	Identify and articulate the jurisdiction's applicable policy goals.
Step 2	Include all utility system costs and benefits.
Step 3	Decide which additional *non-utility* system costs and benefits to include in the test, based on applicable policy goals.
Step 4	Ensure the test is symmetrical in considering both costs and benefits.
Step 5	Ensure the analysis is forward-looking, incremental, and long-term.
Step 6	Develop methodologies and inputs to account for all impacts, including hard-to-quantify impacts.
Step 7	Ensure transparency in presenting the analysis and the results.

New Hampshire – Primary Test
Before and After NSPM

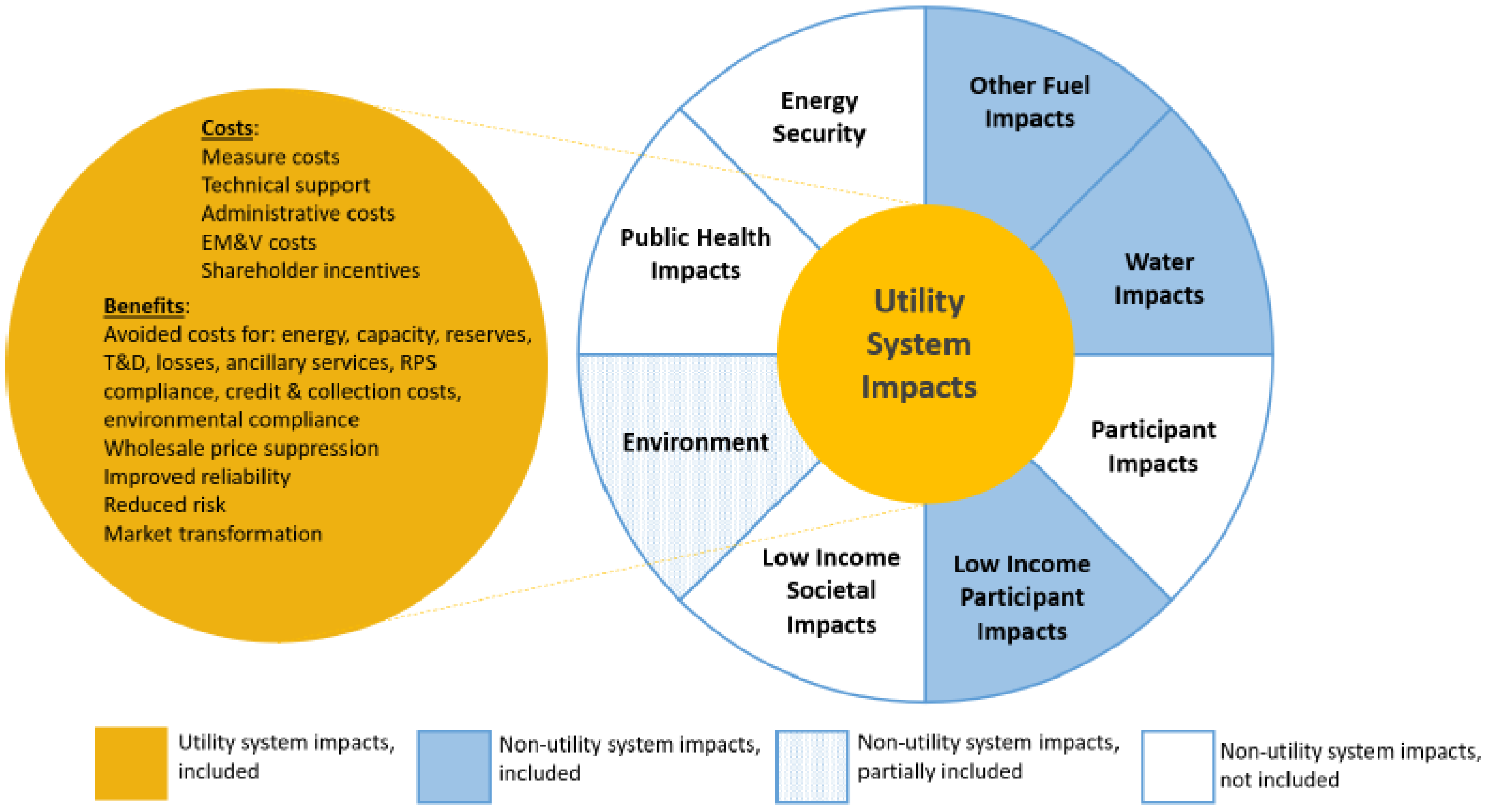
Figure 1. Current and NH TRC test and Granite State Test impacts



Source: 2019 B/C Working Group discussions.
Notes: The utilities partially account for participant non-energy benefits through a percentage adder in the current New Hampshire TRC Test. The utilities partially account for environmental externalities through a New Hampshire-specific fossil fuel proxy.

New Hampshire – Utility System Impacts
a closer look…

Figure 4. Granite State Test impacts



Source: 2019 B/C Working Group discussions.
Note: The utilities partially account for environmental externalities through a New Hampshire-specific fossil fuel proxy.

New Hampshire: Secondary Tests

A state-specific secondary test s**hould start from primary test and add or subtract** those impacts that are implied by policy goals and/or are important to stakeholders.

B/C Working Group members deliberated on several impacts

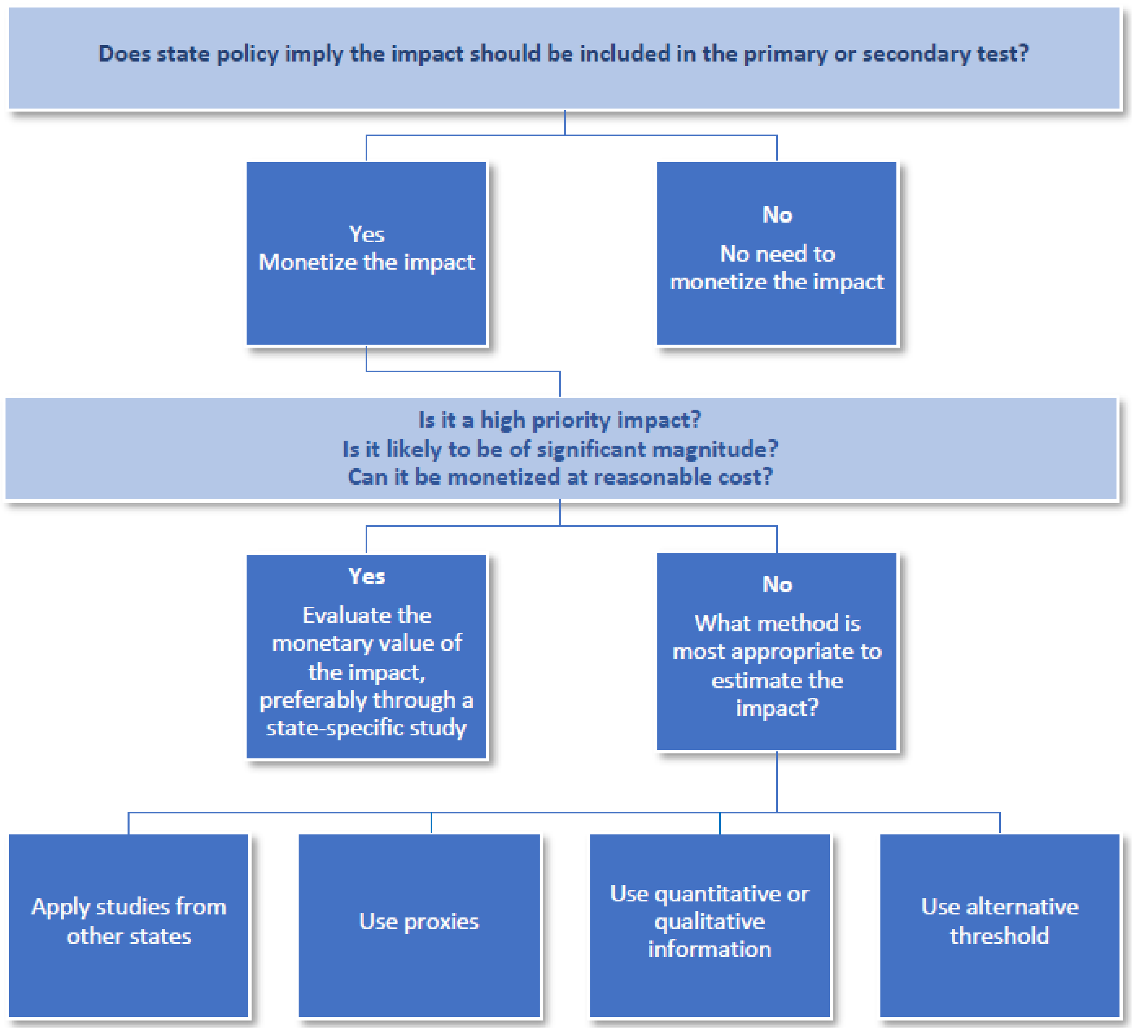
- uncertain whether the impacts should be included in the primary test but not convinced the impacts should be ignored and excluded entirely from cost-effectiveness testing.

Synapse recommendation:

- **Secondary Granite State Test** which includes all impacts in primary Granite State Test, plus: participant impacts, income eligible societal, and other environmental externalities.

New Hampshire – Methods to Account for Impacts

Figure 3. Determining how to account for energy efficiency impacts



Washington State and the NSPM

- Started formal RVF process in June 2018
- WA UTC and statewide IOU advisory group (SWAG) progressed through Step 4 of the NSPM
- UTC staff aim is to present a proposal detailing costs and benefits to include in the test, based on applicable policy goals discussed with stakeholders
- Possible outcomes - rulemaking, policy statement, or adoption through biennial plan order
- *BUT – recent passage of the WA Clean Energy Transformation Act*
  - *Act articulates new policy goals including equity, environmental benefits, risks, and resilience.*
- WA UTC now returning to Step 1 of the NSPM to address new goals

WA UTC Inventory of Policies (2018)

		Principles					Policy Goals Reflected in Laws, Regulations, Orders, etc.														
Public Service Laws and Policies:	Subject	**Efficiency as a Resource**	**Hard-to-Quantify Impacts**	**Symmetry**	**Forward-looking Analysis**	**Transparency**	Lowest-Reasonable-Cost	Industry Neutrality	Manage Risk	Maintain Reliability	Environmental: Energy and Non-energy Impacts from Emissions, Water,	Economic Development	Provide Safe Service	Public Health	Used & Useful	special consideration for low-income customers	special consideration for senior citizens	reduction of coal-fired electricity	Equity	Resource diversity	Consistent with the Council method
PURPA	Consider all costs and benefits, including environmental effects	X	X	X	X	X	X		X	X	X		X							X	
RCW 19.280.010	Integrated Resource Planning statute requires utilities to consider public policies regarding resource preference adopted by Washington state or the federal government	X	X	X	X	X	X		X	X	X									X	
RCW 19.280.010	Utilities must consider the cost of risks associated with environmental effects including emissions of carbon dioxide, among other things	X	X	X	X	X	X		X	X	X									X	
RCW 19.285	Energy Efficiency Resource Standard	X	X	X	X	X	X		X		X									X	X
RCW 19.285	Renewable Portfolio Standard		X		X	X			X	X	X	X								X	

Washington Clean Energy Transformation Act (SB 5116) may change applicable policy goals…

- Sec 4(8) "…. equitable distribution of energy and nonenergy benefits and reduction of burdens to vulnerable populations and highly impacted communities; long-term and short-term public health and environmental benefits and reduction of costs and risks; and energy security and resiliency."
- SB 5116 and HB 1257 incorporate social cost of carbon into cost-effectiveness for electric and gas
- Sec 24 Incorporate cumulative impact analysis developed by Department of Health

Breaking down the silos: NSPM for Distributed Energy Resources

- DERs as grid resources and in distribution planning → need common framework to prioritize DER investments
- States currently use different techniques, methodologies, and assumptions for DER BCA → inconsistency even within states
- NSPM for DERs project (July 2019-June 2020)
  - Single and multi-DERs: EE, distributed gen (PV, CHP), demand response, electric vehicles, storage
  - Non-wires solutions, temporal and locational BCA
  - Integrated, fuel-neutral DER investments
  - Grid-interactive EE buildings (e.g., advanced controls, sensors and data analytics) and optimizing energy use for flexible building loads
  - Use case examples

NSPM Resources

NSPM for EE: https://nationalefficiencyscreening.org/the-national-standard-practice-manual-for-energy-efficiency/

NSPM Case Studies: https://nationalefficiencyscreening.org/resources/case-studies/

NSPM and BCA Modeling:
https://nationalefficiencyscreening.org/resources/nspm-and-models/

Database of State Efficiency Screening Practices (DSESP):
https://nationalefficiencyscreening.org/state-database-dsesp/

NSPM for DERs (Overview):
https://nationalefficiencyscreening.org/the-national-standard-practice-manual-for-ders/

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