

# **National Standard Practice Manual for Energy Efficiency Cost-Effectiveness**

Prepared by  
The National Efficiency Screening Project

**National Association of Utility Consumer Advocates  
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# NATIONAL STANDARD PRACTICE MANUAL

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### New guidelines for cost-effectiveness testing

#### Drivers...

The traditional tests often do not capture or address pertinent state policies.

The traditional tests are often modified by states in an ad hoc manner, without clear principles or guidelines.

Efficiency is not accurately valued in many jurisdictions.

There is often a lack of transparency on why tests are chosen and how they are applied.

# NSPM - BACKGROUND

## NSPM Stakeholders

- National Efficiency Screening Project (NESP) includes stakeholders working to improve EE cost-effectiveness.
- Over 75 organizations representing a range of perspectives.

## NSPM Authors

- Tim Woolf, Synapse Energy Economics
- Chris Neme, Energy Futures Group
- Marty Kushler, ACEEE
- Steve Schiller, Schiller Consulting
- Tom Eckman (Consultant and formerly Northwest Power & Conservation Council)

## NSPM – BACKGROUND CONTINUED

### NSPM Review Committee

- Roughly 40 experts representing a variety of organizations from around the country.
- Provided several rounds of review/feedback on draft manual.

### NSPM Funding, Coordination, and Advisors

- Coordinated and funded by E4TheFuture
- Managed by Julie Michals, E4TheFuture
- Advisory Committee input on outreach & education
- Earlier work on the NESP and NSPM was managed by the Home Performance Coalition

**For more information:**

**<http://www.nationalefficiencyscreening.org/>**

## NSPM: Purpose

- Defining policy-neutral *principles* for developing cost-effectiveness tests.
- Establishing a framework for selecting and developing a *primary test*.
- Providing guidance on *key inputs*.

## NSPM: Scope

- Focus is on utility customer-funded energy efficiency resources.
- Addresses 1<sup>st</sup> order question: “which EE resources merit acquisition?”
- Principles and framework apply to all other resources (including other types of distributed energy resources).
- *NSPM provides a foundation on which jurisdictions can develop and administer a cost-effectiveness test, but does not prescribe “the answer”*

# What's Covered -- NSPM Outline

## **Executive Summary**

## **Introduction**

## **Part 1: Developing Your Test**

1. Principles
2. Resource Value Framework
3. Developing Resource Value Test
4. Relationship to Traditional Tests
5. Secondary Tests

## **Part 2: Developing Test Inputs**

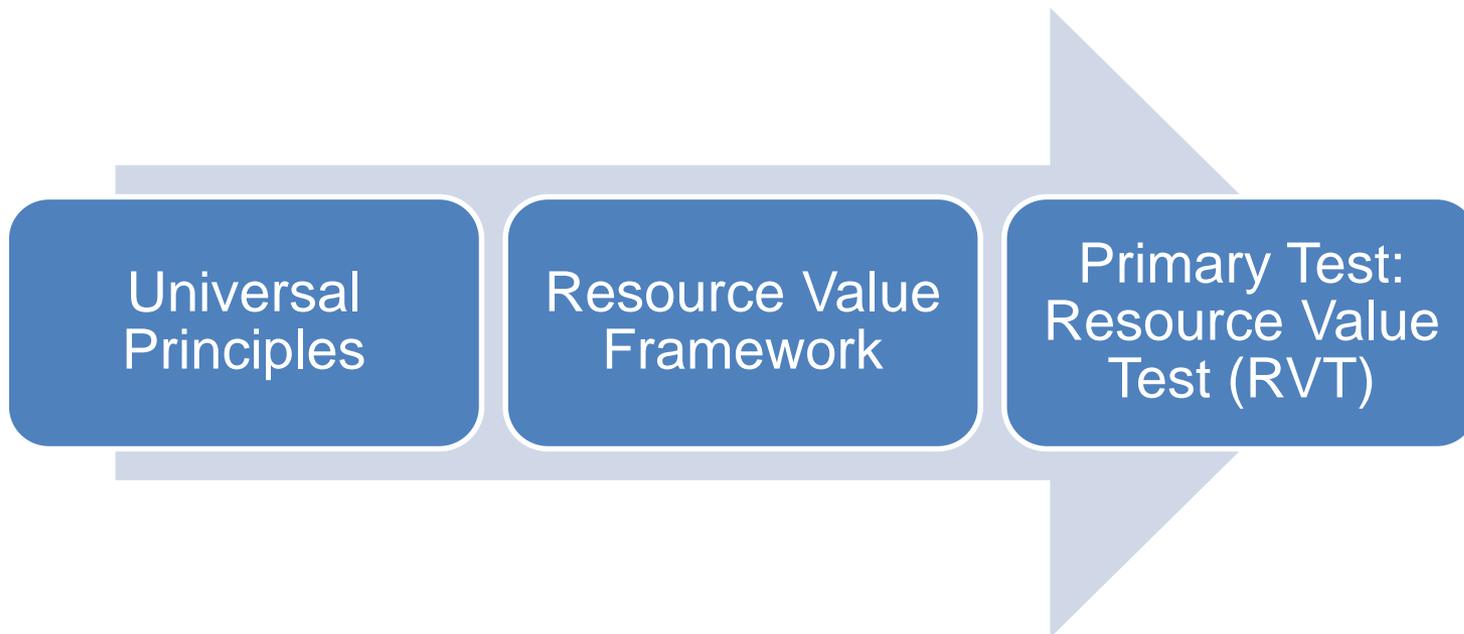
6. Efficiency Costs & Benefits
7. Methods to Account for Costs & Benefits
8. Participant Impacts
9. Discount Rates
10. Assessment Level
11. Analysis Period & End Effects
12. Analysis of Early Retirement
13. Free Rider & Spillover Effects

## **Appendices**

- A. Summary of Traditional Tests
- B. Cost-Effectiveness of Other DERs
- C. Accounting for Rate & Bill Impacts
- D. Glossary

# Part I

## Developing the Primary Cost-Effectiveness Test Using the Resource Value Framework



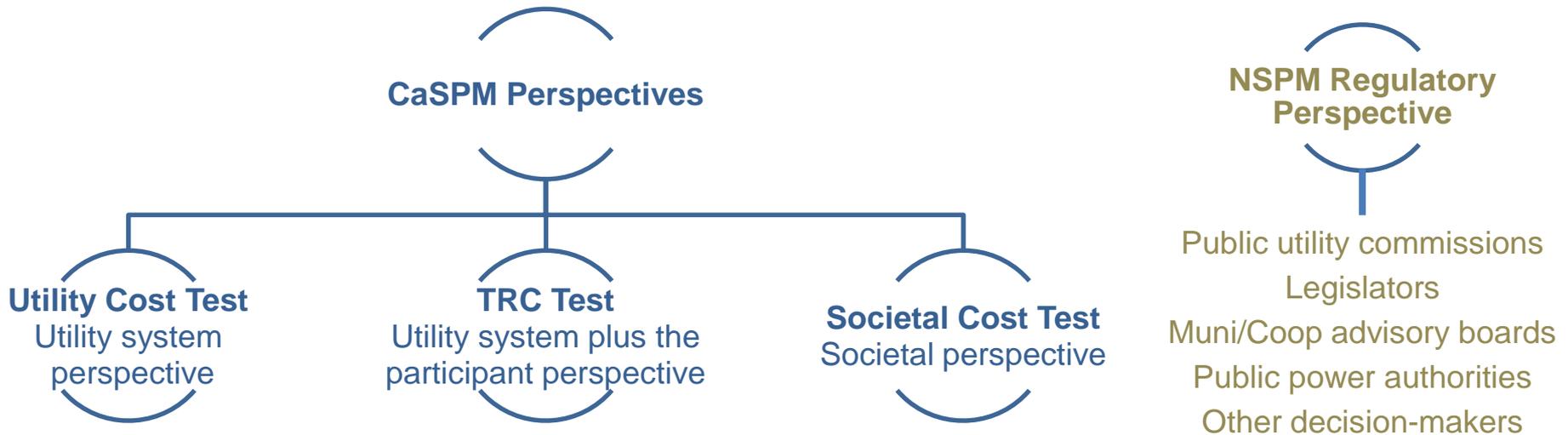
# NSPM Principles

1. Recognize that energy efficiency is a resource.
2. Account for applicable policy goals.
3. Account for all relevant costs & benefits (based on applicable policies), even if hard to quantify impacts.
4. Ensure symmetry across all relevant costs and benefits.
5. Conduct a forward-looking, long-term analysis that captures incremental impacts of energy efficiency.
6. Ensure transparency in presenting the analysis and the results.

# Implementing the Resource Value Framework Involves Seven Steps

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 <i>non-utility</i> 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.

# Cost-Effectiveness Perspectives



- 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

# STEP 1

## Identify and Articulate Applicable Policy Goals

Laws, Regulations, Orders, Guidelines	Policy Impacts Reflected in Laws, Regulations, Orders, etc.							
	Least-Cost	Fuel Diversity	Risk	Reliability/Resilience	Low-Income	Environmental	Econ Dev / Jobs	Public Health
PSC statutory authority	X			X				
Low-income protection	X		X	X	X			X
EE or DER law or rules	X	X	X	X	X		X	
State energy plan	X	X	X	X	X	X	X	
Integrated resource planning	X	X	X	X	X	X	X	
Renewable portfolio standard		X				X	X	
Climate change		X	X			X		X
Environmental protection		X	X			X		X

Each jurisdiction has a constellation of energy policy goals embedded in statutes, regulations, orders, guidelines, etc. This table illustrates how such documents might establish applicable policy goals.

**STEP 2**

## Include All Utility System Impacts

- The foundation of every test
  - Central to principle of treating efficiency as a resource
  - All utility system impacts should be included
- “Utility system” = all that’s necessary to deliver electric service, or gas service for a gas utility
- In general, the utility system impacts are those that directly affect revenue requirements

## STEP 2

# Examples of Utility System Impacts

Illustrative Utility System Costs	Illustrative Utility System Benefits
• EE Measure Costs (utility portion – e.g. rebates)	• Avoided Energy Costs
• EE Program Technical Support	• Avoided Generating Capacity Costs
• EE Program Marketing/Outreach	• Avoided T&D Upgrade Costs
• EE Program Administration	• Avoided T&D Line Losses
• EE Program EM&V	• Avoided Ancillary Services
• Utility Shareholder Performance Incentives	• Wholesale Price Suppression Effects
	• Avoided Costs of RPS Compliance
	• Avoided Costs of Environmental Compliance
	• Avoided Credit and Collection Costs
	• Reduced Risk
	• Increased Reliability

*The principle of treating energy efficiency as a resource dictates that utility system costs and benefits serve as the foundation for all tests*

## STEP 3

# Include Relevant Non-Utility System Impacts

“Relevant” according to applicable policy goals identified under Step 1 of NSPM Framework. Examples include:

Common Overarching Goals:	Provide safe, reliable, low-cost electricity and gas services; protect low-income and vulnerable customers; maintain or improve customer equity.
Efficiency Resource Goals:	Reduce electricity and gas system costs; develop least-cost energy resources; promote customer equity; improve system reliability and resiliency; reduce system risk; promote resource diversity; increase energy independence (and reduce dollar drain from the jurisdiction); reduce price volatility.
Other Applicable Goals:	Support fair and equitable economic returns for utilities; provide reasonable energy costs for consumers; ensure stable energy markets; reduce energy burden on low-income customers; reduce environmental impact of energy consumption; promote jobs and local economic development; <b>improve health associated with reduced air emissions and better indoor air quality.</b>

## STEP 3

# Decide Which Non-Utility System Impacts to Include

- Determine through transparent process open to all stakeholders.
- Stakeholder input can be achieved through a variety of means:
  - rulemaking process,
  - generic jurisdiction-wide docket,
  - working groups or technical sessions,
- Address objectives based on current jurisdiction policies
  - be flexible to address new or modified policies adopted over time.
- May wish to incorporate input from other government agencies
  - department of environmental protection
  - department of health and human services

# STEP 3

## Illustrative Non-Utility System Impacts

Impact	Description
Participant impacts	Impacts on program participants, includes participant portion of measure cost, other fuel savings, water savings, and participant non-energy impacts
Impacts on low-income customers	Impacts on low-income program participants that are different from or incremental to non-low-income participant impacts. Includes reduced foreclosures, reduced mobility, and poverty alleviation
Other fuel impacts	Impacts on fuels that are not provided by the funding utility, for example, electricity (for a gas utility), gas (for an electric utility), oil, propane, and wood
Water impacts	Impacts on water consumption and related wastewater treatment
Environmental impacts	Impacts associated with CO2 emissions, criteria pollutant emissions, land use, etc. Includes only those impacts that are not included in the utility cost of compliance with environmental regulations
Public health impacts	Impacts on public health; includes health impacts that are not included in participant impacts or environmental impacts, and includes benefits in terms of reduced healthcare costs
Economic development and jobs	Impacts on economic development and jobs
Energy security	Reduced reliance on fuel imports from outside the jurisdiction, state, region, or country

*This table is presented for illustrative purposes, and is not meant to be an exhaustive list.*

**STEP 3**

## Whether to Include Participant Impacts

- Is a policy decision (based on jurisdiction's policy goals)
  - Policies may support inclusion of certain participant impacts (e.g., low-income, other fuels, etc.), but not necessarily all participant impacts
- If participant costs are included, participant benefits should also be included (to ensure symmetry and avoid bias), even hard to quantify benefits
- Key questions to consider:
  - Why does it matter what participants pay?
  - Why should non-participants pay for benefits to participants?

# STEP 3

## Range of Participant Non-Energy Impacts

Category	Examples
Asset value	<ul style="list-style-type: none"> <li>• Equipment functionality/performance improvement</li> <li>• Equipment life extension</li> <li>• Increased building value</li> <li>• Increased ease of selling building</li> </ul>
Productivity	<ul style="list-style-type: none"> <li>• Reduced labor costs</li> <li>• Improved labor productivity</li> <li>• Reduced waste streams</li> <li>• Reduced spoilage/defects</li> <li>• Impact of improved aesthetics, comfort, etc. on product sales</li> </ul>
Economic well-being	<ul style="list-style-type: none"> <li>• Fewer bill-related calls to utility</li> <li>• Fewer utility intrusions &amp; related transactions costs (e.g., shut-offs, reconnects)</li> <li>• Reduced foreclosures</li> <li>• Fewer moves</li> <li>• Sense of greater “control” over economic situation</li> <li>• Other manifestations of improved economic stability</li> </ul>
Comfort	<ul style="list-style-type: none"> <li>• Thermal comfort</li> <li>• Noise reduction</li> <li>• Improved light quality</li> </ul>
Health & safety	<ul style="list-style-type: none"> <li>• Improved “well-being” due to reduced incidence of illness—chronic (e.g., asthma) or episodic (e.g., hypothermia or hyperthermia)</li> <li>• Reduced medical costs (emergency room visits, drug prescriptions)</li> <li>• Fewer sick days (work and school)</li> <li>• Reduced deaths</li> <li>• Reduced insurance costs (e.g., for reduced fire, other risks)</li> </ul>
Satisfaction/pride	<ul style="list-style-type: none"> <li>• Improved sense of self-sufficiency</li> <li>• Contribution to addressing environmental/other societal concerns</li> </ul>

**STEP 4**

## Ensure Symmetry Across Benefits and Costs

- Ensure that the test includes costs and benefits symmetrically
  - If category of cost is included, corresponding benefits should be too (e.g., if participant costs included, participant benefits should also be included)
- Symmetry is necessary to avoid bias:
  - If some costs excluded, the framework will be biased in favor of EE;
  - If some benefits excluded, the framework will be biased against EE.
  - Bias in either direction can result in misallocation of resources (over or under investment)
    - higher than necessary costs to meet energy needs
    - too little or too much investment in actions to achieve jurisdiction's energy related policies goals

**STEP 5**

## Conduct Incremental, Forward Looking and Long-Term Analysis

- Incremental: What would have occurred relative to baseline.
  - Has implications for avoided costs.
- Forward looking: Sunk costs and benefits are not relevant to cost-effectiveness analysis.
  - Has implications regarding the Rate Impact Measure (RIM) test.
- Long-term: Analysis should capture full remaining lifecycle costs and benefits.
  - Has implications for the length of the study period.

**STEP 6**

## Develop Methodologies and Inputs to Account for All Relevant Impacts, Including Hard-to-Quantify Impacts

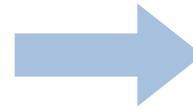
Approach	Application
Jurisdiction-specific studies	Best approach for estimating and monetizing relevant impacts.
Studies from other jurisdictions	Often reasonable to extrapolate from other jurisdiction studies when local studies not available.
Proxies	If no relevant studies of monetized impacts, proxies can be used
Alternative thresholds	Benefit-cost thresholds different from 1.0 can be used to account for relevant impacts that are not monetized.
Other considerations	Relevant quantitative and qualitative information can be used to consider impacts that cannot or should not be monetized.

# STEP 7

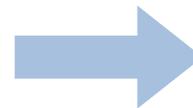
## Ensure Transparency in Reporting

### Sample Template

Efficiency Cost-Effectiveness Reporting Template			
Program/Sector/Portfolio Name:		Date:	
<b>A. Monetized Utility System Costs</b>		<b>B. Monetized Utility System Benefits</b>	
Measure Costs (utility portion)		Avoided Energy Costs	
Other Financial or Technical Support Costs		Avoided Generating Capacity Costs	
Program Administration Costs		Avoided T&D Capacity Costs	
Evaluation, Measurement, & Verification		Avoided T&D Line Losses	
Shareholder Incentive Costs		Energy Price Suppression Effects	
		Avoided Costs of Complying with RPS	
		Avoided Environmental Compliance Costs	
		Avoided Bad Debt, Arrearages, etc.	
		Reduced Risk	
<b>Sub-Total Utility System Costs</b>		<b>Sub-Total Utility System Benefits</b>	
<b>C. Monetized Non-Utility Costs</b>		<b>D. Monetized Non-Utility Benefits</b>	
Participant Costs		Participant Benefits	
Low-Income Customer Costs	<i>These impacts would be included to the extent that they are part of the Resource Value (primary) test.</i>	Low-Income Customer Benefits	<i>These impacts would be included to the extent that they are part of the Resource Value (primary) test.</i>
Other Fuel Costs		Other Fuel Benefits	
Water and Other Resource Costs		Water and Other Resource Benefits	
Environmental Costs		Environmental Benefits	
Public Health Costs		Public Health Benefits	
Economic Development and Job Costs		Economic Development and Job Benefits	
Energy Security Costs		Energy Security Benefits	
<b>Sub-Total Non-Utility Costs</b>		<b>Sub-Total Non-Utility Benefits</b>	
<b>E. Total Monetized Costs and Benefits</b>			
<b>Total Costs (PV\$)</b>		<b>Total Benefits (PV\$)</b>	
<b>Benefit-Cost Ratio</b>		<b>Net Benefits (PV\$)</b>	
<b>F. Non-Monetized Considerations</b>			
Economic Development and Job Impacts	<i>Quantitative information, and discussion of how considered</i>		
Market Transformation Impacts	<i>Qualitative considerations, and discussion of how considered</i>		
Other Non-Monetized Impacts	<i>Quantitative information, qualitative considerations, and how considered</i>		
<b>Determination:</b>	<b>Do Efficiency Resource Benefits Exceed Costs? [Yes / No]</b>		



B. Monetized Utility System Benefits	
Avoided Energy Costs	
Avoided Generating Capacity Costs	
Avoided T&D Capacity Costs	
Avoided T&D Line Losses	
Energy Price Suppression Effects	
Avoided Costs of Complying with RPS	
Avoided Environmental Compliance Costs	
Avoided Bad Debt, Arrearages, etc.	
Reduced Risk	
<b>Total Utility System Benefits</b>	



D. Monetized Non-Utility Benefits	
Economic Development and Job Benefits	
Energy Security Benefits	
<b>Sub-Total Non-Utility Benefits</b>	
<b>Total Benefits (PV\$)</b>	
<b>Net Benefits (PV\$)</b>	
<i>Quantitative information, and discussion of how considered</i>	
<i>Qualitative considerations, and discussion of how considered</i>	
<i>Quantitative information, qualitative considerations, and how considered</i>	
<b>Do Efficiency Resource Benefits Exceed Costs? [Yes / No]</b>	

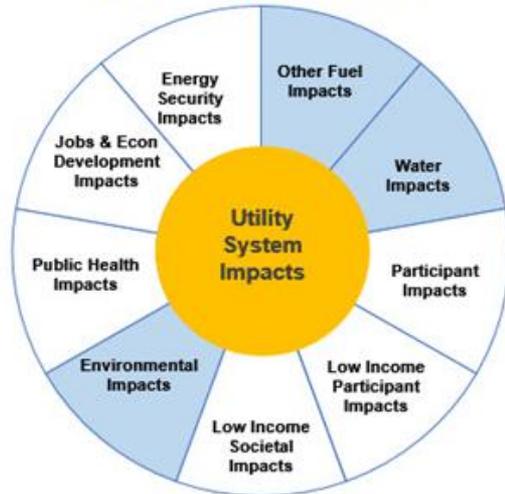
## STEP 7

# Ensure Transparency in Decisions on which Non-Utility System Impacts to Include

- Process should be open to all stakeholders.
- Stakeholder input can be achieved through a variety of means:
  - rulemaking process,
  - generic jurisdiction-wide docket,
  - working groups or technical sessions,
- Address objectives based on current jurisdiction policies
  - However, be flexible to incorporate evolution of policies through time.
- Policy goals may require consultation with other government agencies
  - Environmental protection
  - Health and human services
  - Economic development

# Relationship of Resource Value Test (RVT) to Traditional Tests – Results May Align or Not

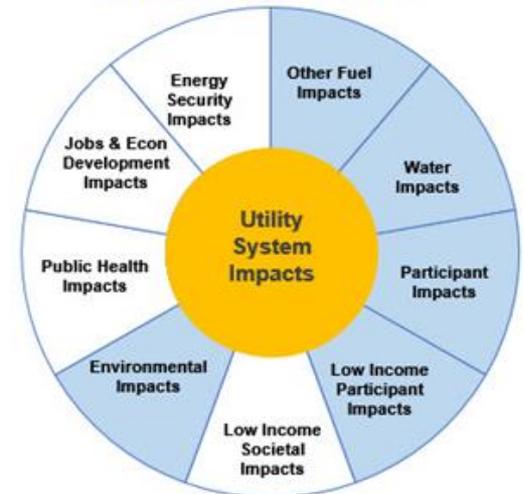
JURISDICTION 1: RVT



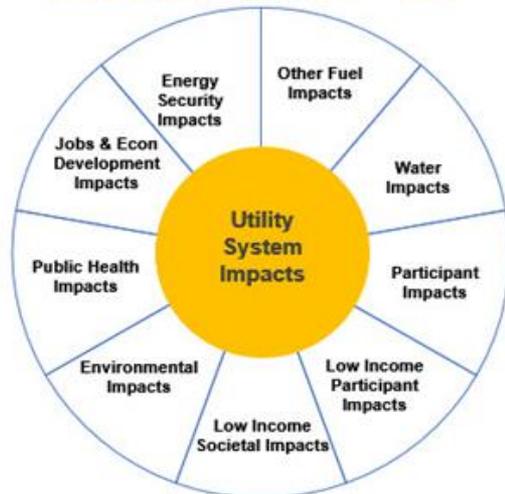
JURISDICTION 2: RVT



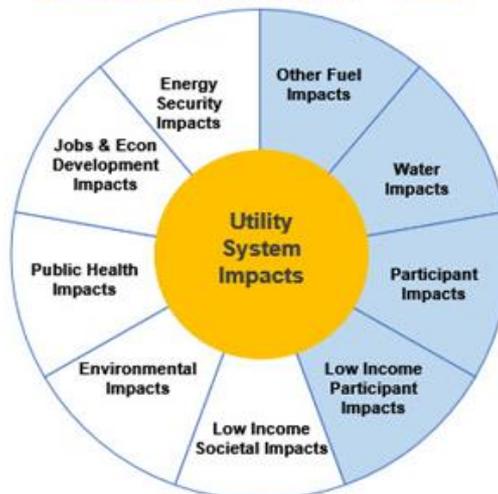
JURISDICTION 3: RVT



JURISDICTION 4: RVT = UCT



JURISDICTION 5: RVT = TRC



JURISDICTION 6: RVT = SCT



# Applying the NSPM in Minnesota

## Minnesota: Current Practices

- MN Department of Commerce hired Synapse to apply the NSPM to Minnesota cost-effectiveness practices.
- There is a large array of MN policy directives related to energy resources.
- The Next Generation Energy Act directs utilities to consider costs and benefits to:
  - the utility
  - society
  - program participants
  - ratepayers
- In practice:
  - The Societal Cost test is primary
  - The Utility Cost test is secondary
  - The Participant test is secondary
  - The Ratepayer Impact Measure test is secondary, but not really used

## Minnesota: Initial Findings

- The Utility Cost test does not include some utility benefits
  - Wholesale price suppression effects
  - Avoided costs of complying with the RPS
  - Avoided environmental compliance costs
  - Avoided credit and collection costs
  - Reduced risk
  - Increased reliability
  - Market transformation
- The Societal Cost test does not include some societal benefits
  - Other fuel savings
  - Participant non-energy benefits
    - Many stakeholders expressed reluctance to include participant NEBs
  - Public health and safety
  - Jobs and economic development
  - Energy security

## Minnesota: Initial Recommendations

- Modify the Utility Cost test to be consistent with theoretical definition.
  - Include all the missing utility impacts.
- Modify the Societal Cost test to be consistent with theoretical definition.
  - Include all the missing utility, participant, and societal impacts.
  - May require some rough estimates or proxy values.
- Decide whether one of these tests should be the primary test in MN.
  - Does one of these tests address relevant MN policy goals?
- If not, then develop a “Minnesota Test.”
  - Include all utility impacts
  - Include water and other fuel impacts
  - Include environmental impacts
  - Include jobs and economic development impacts
  - Participant impacts. Either:
    - Include both participant costs and NEBs; or
    - Exclude both participant costs and NEBs

# Applying the NSPM to Different Types of DERs

All of the principles and the concepts in the NSPM can and should be applied to other types of DERs.

However, there are some very important differences in how the principles and concepts are applied.

# NSPM Appendix B

## EE vs Distributed Energy Resources Utility System Impacts

		Energy Efficiency	Demand Response	Distributed Generation	Distributed Storage
<b>Costs</b>					
<b>Utility System</b>	Measure costs (utility portion)	●	◐	○	○
	Other financial incentives	●	●	◐	◐
	Other program and administrative costs	●	◐	◐	◐
	Evaluation, measurement, and verification	●	●	●	●
	Performance incentives	◐	◐	◐	◐
	Interconnection costs	○	○	●	●
	Distribution system upgrades	○	○	●	●
<b>Benefits</b>					
<b>Utility System</b>	Avoided energy costs	●	◐	●	◐
	Avoided generation capacity costs	●	●	●	●
	Avoided reserves or other ancillary services	●	●	●	●
	Avoided T&D system investment	●	●	●	●
	Avoided T&D line losses	●	●	●	●
	Wholesale market price suppression	●	●	●	●
	Avoided RPS or EPS compliance costs	●	◐	●	◐
	Avoided environmental compliance costs	●	◐	●	◐
	Avoided credit and collection costs	◐	◐	◐	◐
	Reduced risk	●	●	◐	◐

# NSPM Appendix B

## EE vs Distributed Energy Resources **Non-Utility System Impacts**

		Energy Efficiency	Demand Response	Distributed Generation	Distributed Storage
<b>Costs</b>					
<b>Non-Utility</b>	Measure costs (participant portion)	●	●	●	●
	Interconnection fees	○	○	◐	◐
	Annual O&M	○	○	●	●
	Participant increased resource consumption	◐	◐	◐	◐
	Non-financial (transaction) costs	◑	●	○	○
<b>Benefits</b>					
<b>Non-Utility</b>	Reduced low-income energy burden	◐	◐	◐	◐
	Public health benefits	●	◐	●	◐
	Energy security	●	◐	●	◐
	Jobs and economic development benefits	●	●	●	●
	Environmental benefits	●	◐	●	◐
	Participant health, comfort, and safety	◐	○	○	○
	Participant resource savings (fuel, water)	◐	○	○	○

# Other Types of DERS

## Existing Studies and General Interest Level

Type of DER	Existing Studies of Cost-Effectiveness	General Interest or Need
Demand Response	Several	Low – in several states
Distributed Gen - PV	Many	High – in many states
Distributed Gen – NEM (overlap with PV)	Many	High – in many states
Distributed Storage	Few	Moderate – in a few states
Electric Vehicles	Few	Moderate – in a few states
Other Environmentally Beneficial Electrification (heat pumps etc.)	Few	Moderate – in a few states
Distribution System Planning (integrated planning, optimizing DERs)	Few	High – in a few states

# Other Types of DERs

## Cost-Effectiveness Challenges

Type of DER	Challenges
Demand Response	Relatively few challenges; cost-shifting can be a concern.
Distributed Gen: PV	Cost-shifting is a big concern; cost-shifting is often not analyzed properly; DPV often driven by societal goals
Distributed Gen: NEM	Cost-effectiveness is sometimes conflated with rate design
Distributed Storage	Developing inputs is challenging, e.g., locational benefits
Electric Vehicles	Developing inputs; often driven by societal goals
Other Beneficial Electrification	Developing inputs; often driven by societal goals
Distribution System Planning (optimizing DERs, non-wires alternatives, integrated planning)	Very complex process; all the challenges above apply

# NSPM Appendices

# Appendix A

## The Traditional Cost-Effectiveness Tests

Test	Perspective	Key Question Answered	Summary Approach
Utility Cost	The utility system	Will utility system costs be reduced?	Includes the costs and benefits experienced by the utility system
Total Resource Cost	The utility system plus participating customers	Will utility system costs plus program participants' costs be reduced?	Includes the costs and benefits experienced by the utility system, plus costs and benefits to program participants
Societal Cost	Society as a whole	Will total costs to society be reduced?	Includes the costs and benefits experienced by society as a whole
Participant Cost	Customers who participate in an efficiency program	Will program participants' costs be reduced?	Includes the costs and benefits experienced by the customers who participate in the program
Rate Impact Measure	Impact on rates paid by all customers	Will utility rates be reduced?	Includes the costs and benefits that will affect utility rates, including utility system costs and benefits plus lost revenues

# Appendix B

## EE vs Distributed Energy Resources Utility System Impacts

		Energy Efficiency	Demand Response	Distributed Generation	Distributed Storage
<b>Costs</b>					
<b>Utility System</b>	Measure costs (utility portion)	●	◐	○	○
	Other financial incentives	●	●	◐	◐
	Other program and administrative costs	●	◐	◐	◐
	Evaluation, measurement, and verification	●	●	●	●
	Performance incentives	◐	◐	◐	◐
	Interconnection costs	○	○	●	●
	Distribution system upgrades	○	○	●	●
<b>Benefits</b>					
<b>Utility System</b>	Avoided energy costs	●	◐	●	◐
	Avoided generation capacity costs	●	●	●	●
	Avoided reserves or other ancillary services	●	●	●	●
	Avoided T&D system investment	●	●	●	●
	Avoided T&D line losses	●	●	●	●
	Wholesale market price suppression	●	●	●	●
	Avoided RPS or EPS compliance costs	●	◐	●	◐
	Avoided environmental compliance costs	●	◐	●	◐
	Avoided credit and collection costs	◐	◐	◐	◐
	Reduced risk	●	●	◐	◐

# Appendix B

## EE vs Distributed Energy Resources Non-Utility System Impacts

		Energy Efficiency	Demand Response	Distributed Generation	Distributed Storage
<b>Costs</b>					
<b>Non-Utility</b>	Measure costs (participant portion)	●	●	●	●
	Interconnection fees	○	○	◐	◐
	Annual O&M	○	○	●	●
	Participant increased resource consumption	◐	◐	◐	◐
	Non-financial (transaction) costs	◑	●	○	○
<b>Benefits</b>					
<b>Non-Utility</b>	Reduced low-income energy burden	◐	◐	◐	◐
	Public health benefits	●	◐	●	◐
	Energy security	●	◐	●	◐
	Jobs and economic development benefits	●	●	●	●
	Environmental benefits	●	◐	●	◐
	Participant health, comfort, and safety	◐	○	○	○
	Participant resource savings (fuel, water)	◐	○	○	○

## Appendix C

### Limitations of the Rate Impact Measure Test

- The RIM Test not appropriate for cost-effectiveness analyses:
  - Does not provide meaningful information about the magnitude of rate impacts, or customer equity
  - Will not result in lowest costs to customers
  - Is inconsistent with economic theory. The RIM test includes sunk costs, which should not be used for choosing new investments
  - Can lead to perverse outcomes, where large benefits are rejected to avoid de minimus rate impacts
  - Can be misleading. Results suggest that customers will be exposed to new costs, which is not true
- Other approaches should be used to assess rate and equity issues.

# Appendix C

## Better Options for Assessing Rate Impacts

A thorough understanding of rate impacts requires a comprehensive analysis of three important factors:

- Rate impacts, to provide an indication of the extent to which rates for all customers might increase.
- Bill impacts, to provide an indication of the extent to which customer bills might be reduced for those customers that install distributed energy resources.
- Participation impacts, to provide an indication of the portion of customers that will experience bill reductions or bill increases.

Taken together, these three factors indicate the extent to which customers will benefit from energy efficiency resources.

Participation impacts are also key to understanding the extent to which energy efficiency resources are being adopted over time.

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