



# Applying the NSPM to Minnesota CIPs Workshop #3

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# Agenda

- Discuss Straw Proposal
  - Participant costs and benefits
  - Other impacts included
  - Other impacts excluded
- Step 4: Ensure benefits and costs in primary test are properly addressed
  - Symmetry
  - No double-counting
  - All relevant material impacts
- Step 5: Establish comprehensive, transparent documentation
- Secondary tests
- Next steps for remaining workshops

# Hello! Meeting Registrant List

Name	Organization
Adam Zoet	Commerce
Adway De	Commerce
Anthony Fryer	Commerce
Audrey Partridge	Center for Energy and Environment
Baishali Bakshi	Minnesota Pollution Control Agency
Brian Edstrom	Citizens Utility Board of Minnesota
Caitlin Eichten	Fresh Energy
Chris Baker	Wildan
Chris Davis	Commerce
Cory Hetchler	Connexus Energy
Courtney Lane	Synapse Energy Economics
David Bael	Minnesota Pollution Control Agency
David Siddiqui	Oracle
Ethan Warner	CenterPoint Energy
Gregory Ehrendreich	Midwest Energy Efficiency Alliance
Grey Staples	The Mendota Group
Jamie Fitzke	Center for Energy and Environment
Jamie Stallman	Great River Energy
Jason Grenier	Otter Tail Power
Jeremy Petersen	Xcel Energy

Name	Organization
Jessica Burdette	Commerce
Jill Eide	Great River Energy
Joe Reilly	Minnesota Energy Resources Corp
Jon Vesta	Frontier Energy
Josh Mason	Rochester Public Utilities
Kathy Baerlocher	Great Plains Natural Gas
Katie O'Rourke	Minnesota Energy Resources Corp
Kevin Lawless	The Forward Curve
Kristin Berkland	Office of Minnesota Attorney General
Kurt Hauser	Missouri River Energy Services
Kyle Schleis	Connexus Energy
Laura Silver	Commerce
Maddie Koolback	Slipstream
Marty Kapsch	CenterPoint Energy
Matt Haley	Frontier Energy
Matt Wisnefske	Cadmus
Mike Bull	Minnesota Rural Electric Association
Rachel Sours-Page	The Mendota Group
Russ Landry	Center for Energy and Environment
Tim Woolf	Synapse Energy Economics
Tom Sagstetter	Elk River Municipal Utilities

# NSPM: Process for Developing a Jurisdiction's Primary Test

## Today's Workshop

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**STEP 1** Articulate Applicable Policy Goals

Articulate the jurisdiction's applicable policy goals related to DERs.

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**STEP 2** Include All Utility System Impacts

Identify and include the full range of utility system impacts in the primary test, and all BCA tests.

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**STEP 3** Decide Which Non-Utility System Impacts to Include

Identify those non-utility system impacts to include in the primary test based on applicable policy goals identified in Step 1:

- Determine whether to include host customer impacts, low-income impacts, other fuel and water impacts, and/or societal impacts.
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**STEP 4** Ensure that Benefits and Costs are Properly Addressed

Ensure that the impacts identified in Steps 2 and 3 are properly addressed, where:

- Benefits and costs are treated symmetrically.
  - Relevant and material impacts are included, even if hard to quantify.
  - Benefits and costs are not double-counted.
  - Benefits and costs are treated consistently across DER types.
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**STEP 5** Establish Comprehensive, Transparent Documentation

Establish comprehensive, transparent documentation and reporting, whereby:

- The process used to determine the primary test is fully documented.
  - Reporting requirements and/or use of templates for presenting assumptions and results are developed.
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# Straw Proposal

	Category	Impact	Straw Proposal	Map to Policy	Homework Assignment		
					Yes	Maybe	No
Utility System	Electric Utility System	All	✓	na			
	Gas Utility System	All	✓	na			
Non-Utility System	Other Fuels	Other Fuels	✓	✓	9	3	0
	Water	Water	-		7	2	3
	Participant	Participant Costs	✓	✓	7	4	1
		Participant Benefits	✓	✓	5	6	1
	Low-Income	Low-Income	✓	✓	7	3	1
Societal	Societal Impacts	GHG Emissions	✓	✓	12	0	0
		Criteria Air Emissions	✓	✓	6	5	0
		Solid Waste	Include in Other Environmental	✓	1	6	5
		Water Impacts	Include in Other Environmental		4	5	3
		Land Impacts	Include in Other Environmental		1	6	5
		Other Environmental	✓	✓	1	8	3
		Public Health	-		3	7	2
		Economic and Jobs	✓	✓	1	7	3
		Energy Security	✓	✓	6	3	3
		Energy Equity	✓	✓	5	6	1
		Resilience	-	✓	4	6	1

# Potential Participant Impacts, Including NEIs

Type	Participant Impact	Description
Participant	Participant portion of DER costs	Costs incurred to install and operate DERs
	Participant transaction costs	Other costs incurred to install and operate DERs
	Risk	Uncertainty including price volatility, power quality, outages, and operational risk related to failure of installed DER equipment and user error; this type of risk may depend on the type of DER
	Reliability	The ability to prevent or reduce the duration of host customer outages
	Resilience	The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions
	Tax incentives	Federal, state, and local tax incentives provided to host customers to defray the costs of some DERs
	Participant NEIs	Benefits and costs of DERs that are separate from energy-related impacts

NEIs	Description
Water	Changes in water consumption resulting from a DER (e.g., reductions from low-flow showerheads, spray valves, clothes washers).
Asset value	Changes in the value of a home or business as a result of the DER (e.g., increased building value, improved equipment value, extended equipment life)
Productivity	Changes in a customer's productivity (e.g., changes in labor costs, operational flexibility, O&M costs, reduced waste streams, reduced spoilage)
Economic well-being	Economic impacts beyond bill savings (e.g., reduced complaints about bills, reduced terminations and reconnections, reduced foreclosures—especially for low-income customers)
Comfort	Changes in comfort level (e.g., thermal, noise, and lighting impacts)
Health & safety	Changes in customer health or safety (e.g., fewer sick days from work or school, reduced medical costs, improved indoor air quality, reduced deaths)
Empowerment & control	The satisfaction of being able to control one's energy consumption and energy bill
Satisfaction & pride	The satisfaction of helping to reduce environmental impacts (e.g., one of the reasons why residential customers install rooftop PV)

# Discussion: Participant Impacts

## NSPM Principles

- Symmetry Principle
  - If participant costs are included, then participant benefits should be too (including NEIs)
  - If participant benefits are not included, participant costs should not be
- Hard-to-Quantify Principle
  - Relevant impacts cannot be ignored just because they are difficult to quantify

## Summary of Comments

- Stakeholders are mostly supportive of including participant impacts
- Those indicating “maybe” stated need for symmetry of costs and benefits

# Participant Non-Energy Impacts

## Points to Consider

- There are many participant non-energy impacts
- Most of them are participant benefits
- Some can be very large
- Some of them are more important to customers than energy benefits
- They vary significantly across programs
- They can be difficult to measure, quantify, and monetize
- Estimates are often approximate and uncertain



# Protecting Program Participants

- Participants are (essentially) always better off
- The Participant Cost Test can be used as a secondary test
- TRC Test and Societal Cost Test (SCT) do not fully capture participant impacts
  - In practice, participant benefits are reduced bills
  - TRC Test and SCT benefits are system-wide avoided costs, not bill savings

# Implications of Including Participant Costs and Benefits

## MN 2021 BCA - Portfolio

Test	BCR
UCT	2.86
TRC (participant costs only)	1.12

## RI 2021 BCA – Residential Programs

- NEIs typically have the largest impact on residential and low-income programs
- For RI, the UCT is not cost-effective due to the focus on oil and propane savings

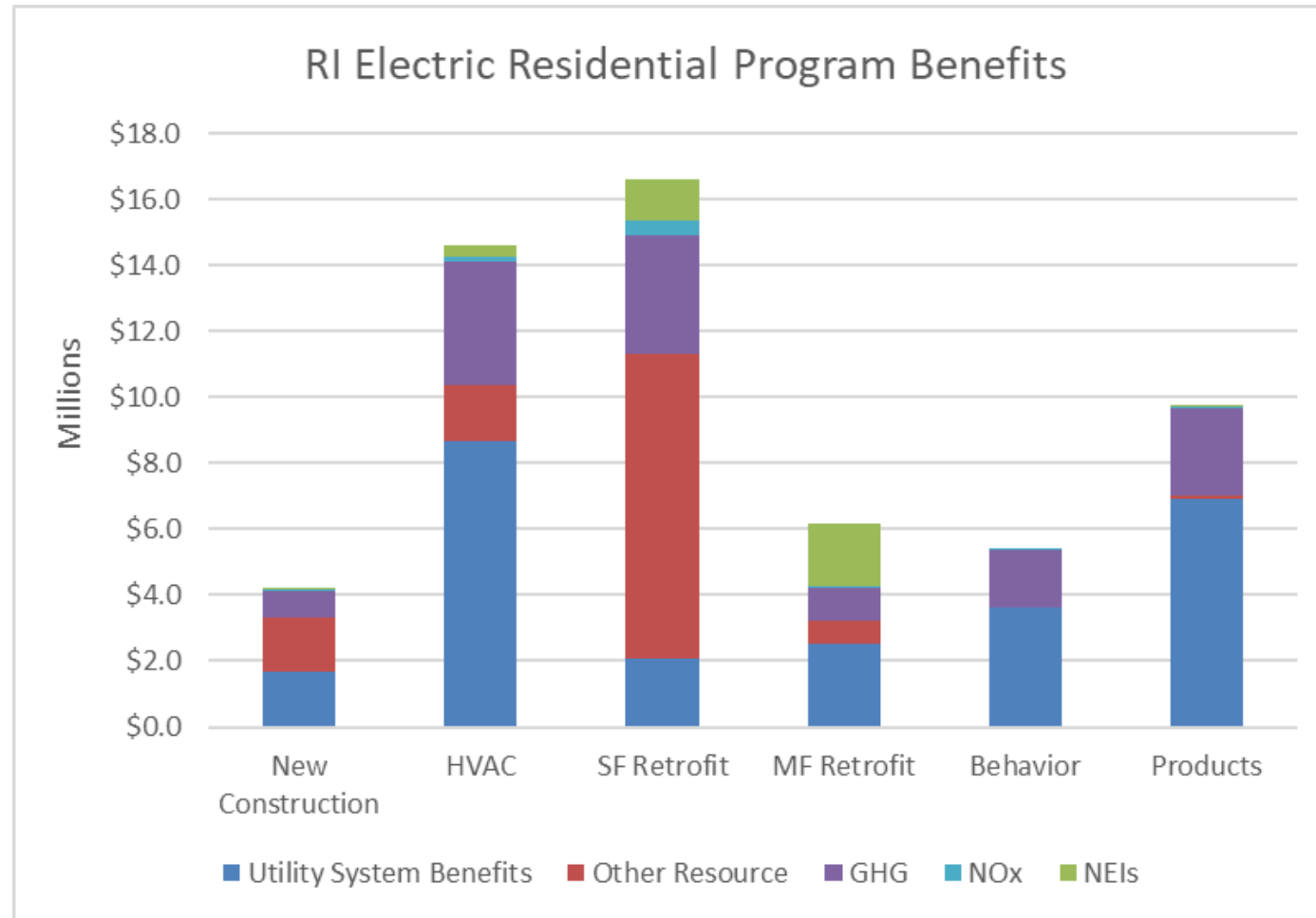
Test	BCR
UCT	0.70
TRC (participant costs only)	0.93
TRC (participant costs & benefits)	1.04

# Example: Magnitude of Non-Energy Impacts

Sector	Program	NEIs as % of Total Benefits
Residential	New Construction	2%
	HVAC	3%
	Single-Family Retrofit	8%
	Multi-Family Retrofit	31%
	Behavioral	0%
	Products	0%
Low-Income	Single-Family Retrofit	44%
	Multi-Family Retrofit	47%
Commercial & Industrial	New Construction	5%
	Retrofit	14%
	Small Business	15%

Source: National Grid Rhode Island, 2022 Energy Efficiency Plan, Attachment 5, Table E-6 (without CHP Project and Economic Benefits)

# Example: Magnitude of Non-Energy Impacts



Source: National Grid Rhode Island, 2022 Energy Efficiency Plan, Attachment 5, Table E-6 (Economic Benefits Removed)

# Options for Incorporating NEIs

- Jurisdiction and program specific studies
- Leverage existing studies that have already quantified NEIs through primary research (CA, MA, RI)
  - Factors to consider when using other state's studies: climate, housing stock, economic conditions, and inflation
  - Dollar value or percent of total energy benefits can be used
- NEI proxies
  - Typically, a percentage adder that is applied to total energy benefits for a specific program or sector

# Sample of Participant NEI Proxies

State	Adder
Colorado	10% electric 5% gas 15% low-income
D.C.	5% NEI adder 5% risk 15% low-income solar measures
Nevada	10% non-low-income 25% low-income
New Hampshire*	25% residential 10% C&I
New Jersey	5% non-low-income 10% low-income
Vermont	15% across all programs Additional 15% for low-income

\*Secondary Test

Sources: ACEEE *Guidelines for Low-Income Energy Efficiency Programs* and NEEP *Non-Energy Impacts Approaches and Values: an Examination of the Northeast, Mid-Atlantic, and Beyond*, 2017.

[mn.gov/commerce](http://mn.gov/commerce)

# Other Impacts Included in the Straw Proposal

	Category	Impact
Utility System	Electric Utility System	All
	Gas Utility System	All
Non-Utility System	Other Fuels	Other Fuels
	Low-Income	Low-Income
Societal	Societal Impacts	Greenhouse Gas Emissions
		Criteria Air Emissions
		Other Environmental (solid waste, water, land, others)
		Economic and Jobs
		Energy Security
		Energy Equity

# Discussion: Macroeconomic

## Description of Impact

- The value of any incremental economic development and jobs provided by EE
- Common practice to estimate net-job impacts in the state

## Treatment of macroeconomic impacts in a BCA

- Monetary value of macroeconomic impacts should not be added to monetary values of BCA because that would result in double-counting
- Nonetheless, job impacts can be included in a quantitative way and reported separately from BCA

## Summary of comments

- Recommended definitions: net jobs or reduced dollar drain from imported energy (also mentioned for macroeconomic)
- Not for primary test
- Difficult to incorporate



# Discussion: Energy Security

## Description of Impact

- Reductions in imports of various forms of energy help advance the goals of energy independence & security.
- Focus tends to be on costs, risks, volatility of fossil fuel imports.
- There is potential for overlap with utility system reliability and risk.

## Summary of comments

- Recommend quantifying reduced economic burden of fuel imports, reduced dollar drain
- Supported by several policies
- Concerns of double counting with low-income
- Include in utility system risk and reliability instead

# Impacts Excluded from the Straw Proposal

## Non-Utility System Impacts

- Water

## Societal Impacts

- Public Health
- Resilience

# Discussion: Public Health

## Description of Impact

- Includes health impacts that are not included in participant impacts or other societal impacts. These can include, for example, reduced incidents of asthma or healthcare costs such as societal investment required in medical facility infrastructure.
- Should be incremental to what is embedded in utility system costs (e.g., environmental compliance).

## Summary of Comments

- Concerns related to potential double counting with low-income and criteria air emissions.
- May not be appropriate for primary test
- Concerns regarding valuing the impact

# Discussion: Resilience

## Description of Impact

- The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.
- EE can increase resilience by reducing the amount of load that needs to be served to recover from an outage. It is important to avoid double-counting of risk, reliability, and resilience impacts.

## Summary of comments

- Most comments are supportive but concerns for how to quantify
- Should this be captured in reliability

# Steps 4 & 5

- Step 4: Ensure benefits and costs in primary test are properly addressed
  - Symmetry
  - No double-counting
  - All relevant material impacts
- Step 5: Establish comprehensive, transparent documentation
  - The Working Group report will provide transparency for this working group process.
  - Transparency also requires that CIP Plans and Annual Reports adequately document all the impacts included, and their values.

# Secondary Tests

- What are secondary tests used for?
  - Inform decisions on how to prioritize EE investments
  - Inform decisions regarding marginally cost-effective measures or programs

	Case 1	Case 2	Case 3
Primary test (no GHG)	2.1	0.96	0.96
Secondary test (with GHG)	Not needed	1.8	0.98
Investment Decision	accept	accept	reject

- MN Statutes already require utilities to present results for the following tests:
  - Utility Cost Test, Total Resource Cost Test, Participant Test, Societal Test
  - These are all secondary tests
- Is there a need for an additional secondary test?

# Next Steps

## Written Comments

- Written feedback on Synapse's draft Straw Proposal due by 6/29.
- Written responses should outline specific areas of agreement and disagreement with the Straw Proposal.
- Email written responses to [adam.zoet@state.mn.us](mailto:adam.zoet@state.mn.us) and [gstaples@mendotagroup.com](mailto:gstaples@mendotagroup.com)

## Final Working Group Report

- Mendota Group/Commerce will prepare and distribute a final report to the CAC prior to next meeting.
- The report will outline what was agreed to, what was not agreed to, and what will be quantified in the next phase of CAC process.

## Workshop #4 (7/20 from 10:00-12:30)

- Discuss Final Working Group Report.
- Mendota Group transitions to next phase of CAC process focused on quantifying MN's primary test impacts.
- Roadmap of the key tasks and timeline for this phase of the CAC process.
- Initial discussion of priority impacts that will work to quantify.
- Initial discussion of resources that could be used to quantify priority impacts.

# Thank You!

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## Appendix: Useful Slides from Workshop #2

# Current Status: Electric Utility Impacts

Type	Impact	Minnesota Power	Otter Tail	Xcel
Generation	Energy	Yes	Yes	Marginal Energy
	Capacity	Yes	Yes	Peak Load Capacity
	Environmental Compliance		Yes, through IRP approval	Embedded in Energy and Capacity
	RPS Compliance		Yes, through IRP approval	Embedded in Energy and Capacity
	Market Price Effects		Yes	No, but could be included if marginal energy cost measured @ load w/o EE
	Ancillary Services		Yes	Yes, in Capacity
Transmission	Capacity	Yes	Yes	Yes
	Losses	Yes	Yes	Yes
Distribution	Capacity	Yes	Yes	Yes
	Losses	Yes	Yes	Yes
General	Financial Incentives	Yes	If customer rebates, then yes	Yes
	Program Administration	Yes	Yes	Yes
	Utility Performance Incentives		Yes	No – can be quantified in incentive mechanism
	Credit and Collections		No	No
	Risk		No	No
	Reliability		Part of IRP/IDP	No
	Resilience		Part of IRP/IDP	No

# Current Status: Gas Utility Impacts

Type	Impact	CenterPoint	MERC	Xcel
Commodity / Supply	Fuel	Yes	Yes	Yes
	Capacity & Storage	Unsure, probably partially captured in commodity costs	Yes, insofar as this is captured in the PGA for the demand cost (input 4)	Yes
	Environmental Compliance	Unsure, probably partially captured in commodity costs	No. Env. damage factor represents the social cost of carbon.	Yes
	Market Price Effects	Unsure of definition		Maybe
Transportation	Transportation	If this is O&M then yes	No	No
Delivery	Delivery	If this is O&M then yes	No	No
General	Financial Incentives	Yes	No	Yes
	Program Administration	Yes	Yes	Yes
	Utility Performance Incentives	Shown in net benefits in status reports. Not used in BENCOST	Yes	No
	Credit and Collections	No	No	No
	Risk	No	No	No
	Reliability	No	No	No
	Resilience	No	No	No
Other (Specify)	Non-energy benefits adder		Yes	
	Variable O&M		Yes	
	Bill/Revenue impacts		Yes	
	Incremental measure costs		Yes	