

Applying the NSPM to Minnesota CIPs Workshop #2

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Agenda

- Introduction (10 min)
- Identify Utility System Impacts (20 min)
 - Review current utility practice
- Non-Utility System Impacts (1 hr 20 min)
 - Review of Policy Goals
 - Summary of homework results
 - Discussion of which non-utility system impacts to include
- Next steps (10 min)
 - Straw proposal
 - Next workshop

Hello! Meeting Registrant List

Name	Organization
Adam Zoet	Commerce
Adway De	Commerce
Andy Bahn	Minnesota Public Utilities Commission
Amalia Hicks	Cadmus
Anna Roberts	Otter Tail Power
Anthony Fryer	Commerce
Audrey Partridge	Center for Energy and Environment
Becky Billings	Xcel Energy
Brian Edstrom	Citizens Utility Board of Minnesota
Chris Baker	Wildan
Chris Davis	Commerce
Cory Hetchler	Connexus Energy
Courtney Lane	Synapse Energy Economics
David Siddiqui	Oracle
Ethan Warner	CenterPoint Energy
Gregory Ehrendreich	Midwest Energy Efficiency Alliance
Grey Staples	The Mendota Group
Jamie Stallman	Great River Energy
Jared Hendricks	Owatonna Public Utilities
Jason Grenier	Otter Tail Power
Jeremy Petersen	Xcel Energy
Jessica Burdette	Commerce
Jill Eide	Great River Energy
Joe Dammel	Fresh Energy
Joe Reilly	Minnesota Energy Resources Corp
John O'Neil	Southern Minnesota Municipal Power Agency

Name	Organization	
Josh Mason	Rochester Public Utilities	
Julie Michals	E4TheFuture	
Kathy Baerlocher	Great Plains Natural Gas	
Katie O'Rourke	Minnesota Energy Resources Corp	
Kavita Maini	Minnesota Chamber of Commerce	
Kevin Lawless	The Forward Curve	
Kristin Berkland	Office of Minnesota Attorney General	
Kristine Anderson	Greater Minnesota Gas	
Kyle Schleis	Connexus Energy	
Kurt Hauser	Missouri River Energy Services	
Laura Silver	Commerce	
Lisa Beckner	Minnesota Power	
Lloyd Kass	Franklin Energy	
Marty Kapsch	CenterPoint Energy	
Marty Kushler	American Council for an Energy-Efficient Economy	
Matt Haley	Frontier Energy	
Matt Wisnefske	Cadmus	
Michael Hinde	Minnesota Valley Electric Cooperative	
Michelle Rosier	Minnesota Public Utilities Commission	
Mike Bull	Minnesota Rural Electric Association	
Peter Scholtz	Office of Minnesota Attorney General	
Rachel Sours-Page	The Mendota Group	
Russ Landry	Center for Energy and Environment	
Sami Khawaja	Cadmus	
Tim Woolf	Synapse Energy Economics	
Tom Sagstetter	Elk River Municipal Utilities	

NSPM: Process for Developing a Jurisdiction's Primary Test

Today's Workshop -

STEP 1	Articulate Applicable Policy Goals Articulate the jurisdiction's applicable policy goals related to DERs.				
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.				
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, othe fuel and water impacts, and/or societal impacts. 				
STEP 4	Ensure that Benefits and Costs are Properly Addressed				
	 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. 				
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.





Utility System Impacts

Framing the Discussion: Utility System Impacts

- Utility system impacts are foundational to cost-effectiveness
 - Indicates to what extent total utility system costs are reduced or increased by a DER
- DERs should be treated as a utility system resource and account for all relevant, material impacts
 - Important to distinguish between two questions:
 - whether an impact should be included in the test
 - the value of the impact
- In some cases, we will need to determine whether certain costs are utility system, participant, or societal impacts

Current Status: Electric Utility Impacts

Туре	Impact	Minnesota Power	Otter Tail	Xcel
	Energy	Yes	Yes	Marginal Energy
	Capacity	Yes	Yes	Peak Load Capacity
	Environmental Compliance		Yes, through IRP approval	Embedded in Energy and Capacity
Generation	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
Troponiosion	Capacity	Yes	Yes	Yes
Iransmission	Losses	Yes	Yes	Yes
Distribution	Capacity	Yes	Yes	Yes
Distribution	Losses	Yes	Yes	Yes
	Financial Incentives	Yes	If customer rebates, then yes	Yes
	Program Administration	Yes	Yes	Yes
General	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

Туре	Impact	CenterPoint	MERC	Xcel
Commodity /	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
Supply	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
	Financial Incentives	Yes	No	Yes
	Program Administration	Yes	Yes	Yes
Caraanal	Utility Performance Incentives	Shown in net benefits in status reports. Not used in BENCOST	Yes	No
General	Credit and Collections	No	No	No
	Risk	No	No	No
	Reliability	No	No	No
	Resilience	No	No	No
	Non-energy benefits adder		Yes	
Other (Specify)	Variable O&M		Yes	
other (specify)	Bill/Revenue impacts		Yes	
	Incremental measure costs		Yes	

Next Steps: Utility System Impacts

- Synapse will compile information from workshops to inform straw proposal
- Workshop 3 will focus on the straw proposal
 - Stakeholders can provide feedback on proposal during workshop
- After cost-effectiveness tests are established, remaining workshops can be used to discuss methods for valuing utility system impacts
 - This process can involve determine which impacts will be monetized or addressed qualitatively
- The results of the workshops can be used to inform the next triennial plan





Non-Utility System Impacts

Non-Utility System Impact Descriptions

Table 3-3. Common	y Considered Non-Utilit	y System Impacts
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Non-Utility Impact	Description
Other fuel impacts	Impacts on fuels that are not provided by the relevant utility, for example, electricity (for a gas utility), gas (for an electric utility), oil, propane, gasoline, and wood
Host customer impacts	Host customer portion of DER costs and host customer non-energy impacts (NEI), such as impacts on productivity, comfort, health and safety, mobility, and more
Impacts on low-income customers	Impacts that are different from or incremental to non-low-income customer impacts such as energy affordability and poverty alleviation
Environmental impacts	Impacts associated with GHG emissions, criteria pollutant emissions, land use, solid waste, etc.; includes only those impacts not embedded in the utility cost of compliance with environmental regulations, which should always be treated as a utility system cost
Public health impacts	Impacts on public health; includes health impacts that are not included in host customer impacts or environmental impacts and includes benefits in terms of reduced healthcare costs
Economic development and jobs	Impacts on direct and indirect economic development and jobs
Energy security	Reduced reliance on fuel or energy imports from outside the state, region, or country

This table is presented for illustrative purposes and is not meant to be an exhaustive list or applicable in every jurisdiction.

Societal Impact Descriptions

Table 4-6. Potential Benefits and Costs of DERs: Societal

Туре	Societal Impact	Description		
	Resilience	Resilience impacts beyond those experienced by utilities or host customers		
	GHG Emissions	GHG emissions created by fossil-fueled energy resources		
Other Environmental Other air emissions, solid waste, land,		Other air emissions, solid waste, land, water, and other environmental impacts		
Societal	Economic and Jobs	Incremental economic development and job impacts		
	Public Health	Health impacts, medical costs, and productivity affected by health		
	Low Income: Society	Poverty alleviation, environmental justice, and reduced home foreclosures		
	Energy Security	Energy imports and energy independence		

NSPM Step 3: Non-Utility System Impacts

- Policy goals determine which non-utility system impacts to include in the primary test
- This step includes the following categories:
 - Participants
 - Costs, benefits, non-energy impacts (NEIs)
 - Other fuel and water impacts
 - Low-income
 - Societal impacts

Homework Summary

Which non-utility system impact should be included in the primary BCA test?

Stakeholder's initial input.

Туре	Impact	Yes	No	Maybe
Deuticinent	Participant costs	7	1	4
Participant	Participant benefits	5	1	6
Other Fuels	Other fuels	9	0	3
Water	Water	7	3	2
Low-Income	Low-income	7	1	3
	GHG emissions	12	0	0
	Criteria air emissions	6	0	5
	Solid waste	1	5	6
	Water impacts	4	3	5
	Land impacts	1	5	6
Societal	Other environmental	1	3	8
	Public health	3	2	7
	Macroeconomic	1	3	7
	Energy security	6	3	3
	Energy equity	5	1	6
	Resilience	4	1	6

Mapping Policies to Impacts (draft for discussion)

	Impact	Maps to Policy?	Rationale
Participant	Participant costs	x	Next Generation Energy Act (NGEA) of 2007 includes citizens, CIP IOU statute includes participants in review of cost-
Participant	Participant benefits	x	effectiveness
Other fuels	Other fuels	x	ECO Act clearly requires consideration of other fuels for fuel switching purposes
Water	Water (participant)		
Low-income	Low-income	x	Natural Gas Innovation Act of 2021 and CIP IOU statute specifically calls out low- and moderate-income customers
	GHG emissions	x	Key purpose of ECO Act is to reduce emissions that cause climate change
	Criteria air emissions	x	MN IRP statute: a range of environmental costs associated with electricity generation should be established
	Solid waste	х	NGIA of 2021 discusses waste reduction, CIP COU statute discusses waste heat, CIP IOU discuses waste heat and hazardous waste
	Water impacts		
	Land impacts		
Societal	Other environmental	x	NGIA of 2021: consideration of general environmental benefits and environmental attributes of resources in plans
	Public health		
	Macroeconomic	x	Energy Conservation & Optimization Act of 2021 discusses need to maximize economic value
	Energy security	x	Next Generation Energy Act of 2007 states need to reduce economic burden of fuel imports
	Energy equity	x	MN Rates statute indicates rates should be equitable
	Resilience	x	NGEA of 2007 indicates importance of protecting life, safety, and security of citizens during an energy crisis

Homework Summary with Policies

Which non-utility system impact should be included in the primary BCA test?

Stakeholder's initial input, alongside policy mapping.

Туре	Impact	Yes	No	Maybe	Maps to Policy
Deutisiaaat	Participant costs	7	1	4	~
Participant	Participant benefits	5	1	6	~
Other Fuels	Other fuels	9	0	3	✓
Water	Water	7	3	2	
Low-Income	Low-income	7	1	3	✓
	GHG emissions	12	0	0	~
	Criteria air emissions	6	0	5	~
	Solid waste	1	5	6	~
	Water impacts	4	3	5	
	Land impacts	1	5	6	
Societal	Other environmental	1	3	8	~
	Public health	3	2	7	
	Macroeconomic	1	3	7	~
	Energy security	6	3	3	✓
	Energy equity	5	1	6	~
	Resilience	4	1	6	~

Impacts Flagged for Discussion

Туре	Impact	Include/Exclude/Discuss	Rationale		
	Participant costs	Discuss	Included in policies and majority of respondents said yes or indicated maybe so long as costs and benefits are		
Participant	Participant benefits	Discuss	included.		
Other Fuels	Other fuels	Include	Majority of respondents said yes, and the ECO Act creates a clear policy goal.		
Water	Water (participant NEI)	Include	Not linked to policy goal but stakeholders indicate may be appropriate to include for water saving measures.		
Low-Income	Low-income	Include	Included in policies and majority of respondents said yes.		
	GHG emissions	Include	Unanimous support to include impact and mapped to several policies.		
	Criteria air emissions	Include	spondents either said yes or maybe so long as there is no double counting with other impacts. There is als ink to policy.		
	Solid waste	Exclude	While waste is mentioned in several polices, the linkage to EE is limited. Little support from respondents to include.		
	Water impacts	Exclude	Not linked to policy goals and majority of respondents point to measure level benefits and not societal.		
Casiatal	Land impacts	Exclude	Not linked to policy goals and limited support from respondents.		
Societai	Other environmental	Exclude	While several policies point to environmental attributes, the majority of respondents indicate key environmental impacts would be accounted for in other impacts.		
	Public health	Discuss	Not a policy goal but there is a range of respondent opinions.		
	Macroeconomic	Discuss	Linked to policy but majority of respondents said maybe.		
	Energy security	Discuss	Linked to policy goals but half of respondents are no or maybe.		
	Energy equity	Discuss	Linked to policy but majority of respondents said maybe.		
	Resilience	Discuss	Linked to policy but majority of respondents said maybe. 17		

Potential Participant Impacts

Туре	Participant Impact	Description
	Participant portion	Costs incurred to install and
	of DER costs	operate DERs
	Participant	Other costs incurred to install and
	transaction costs	operate DERs
		Uncertainty including price
	Risk	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
Participant	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	
Transaction costs	Costs incurred to adopt DERs, beyond those related to the technology or service itself (e.g., application fees, time spent researching, paperwork)	
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 & safetyChanges 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)	

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

Discussion: Participant Impacts

NSPM Principles

- Symmetry Principle
 - If participant costs are included, then participant benefit should be too (including non-energy benefits)
 - 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

Potential Next Steps

- Include participant costs and benefits and quantify NEIs prior to triennial plans.
- Exclude participant costs and benefits.
- Exclude participant costs and benefits unless and until NEIs have been quantified.

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: 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

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

Discussion: Energy Equity

Description of Impact

- No standard definition
- Pacific Northwest National Laboratory: "An equitable energy system is one where the economic, health, and social benefits of participation extend to all levels of society, regardless of ability, race, or socioeconomic status. Achieving energy equity requires intentionally designing systems, technology, procedures, and policies that lead to the fair and just distribution of benefits in the energy system."
- Difficult to monetize and address in BCA

Summary of comments

- Considered in program design, maybe best to look at separate from BCA
- Concern it could be the same as low-income and energy security
- Supported by policies but questions of how to quantify

Discussion: Energy Equity

Structural Equity	Procedural Equity	Distributional Equity
Decisions are made with a recognition of the historical, cultural, and institutional dynamics and structures that have led to energy inequities.	Offer inclusive, accessible, authentic engagement and representation in the process of developing or implementing energy programs and policies.	Energy policies and programs achieve fair distribution of benefits and burdens across all segments of a community and across generations.
Decision makers reform policies and programs that perpetuate disparities and work to build policy and program agendas that are fair, just, and equitable for current and future customers.	Community members have an active leadership role in the planning process and ensure their needs and concerns inform and drive the development and outcomes of programs, goals, and solutions.	Policies and programs effectively and equitably reach and benefit all current customers (e.g., lower energy bills, jobs, community wealth) and don't result in unfair burdens on future generations.

Discussion: Energy Equity







Next Steps

Next Steps

Straw Proposal

- Synapse and the Department will prepare a straw proposal based on the stakeholder input to date.
- Will be shared prior to Workshop #3.

Homework

- Review straw proposal.
- Be prepared to discuss proposal at Workshop 3.

Workshop #3 (Mid-June)

- Discuss Straw Proposal
- NSPM Steps 4 and 5
 - Step 4: Ensure benefits and costs identified in Steps 2 & 3 are properly addressed (symmetry, no double counting)
 - Step 5: Establish comprehensive, transparent documentation
- Secondary tests
- Next steps for remaining workshops



Thank You!

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