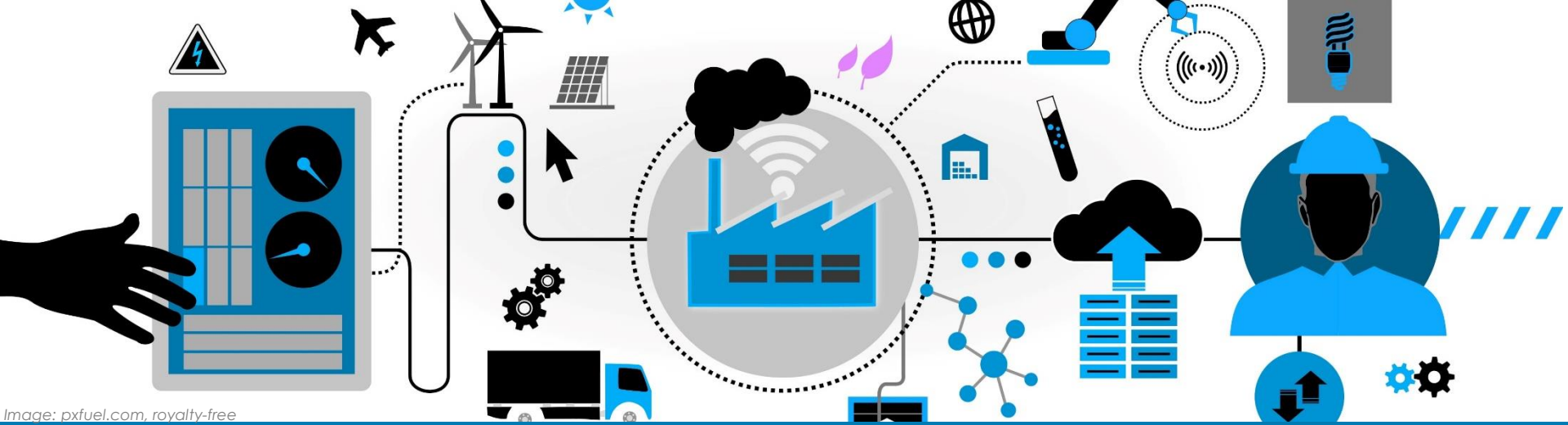


Image: pxfuel.com, royalty-free

MEEA Policy Webinar: **The NSPM for DERs – An Updated Resource for Benefit-Cost Analysis in the Midwest**

October 29, 2020

MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

Presenters

E4theFuture

Julie Michals

Energy Futures Group

Chris Neme

MN Dept of Commerce

Adam Zoet

MI EGLE

Robert Jackson

AEP Ohio

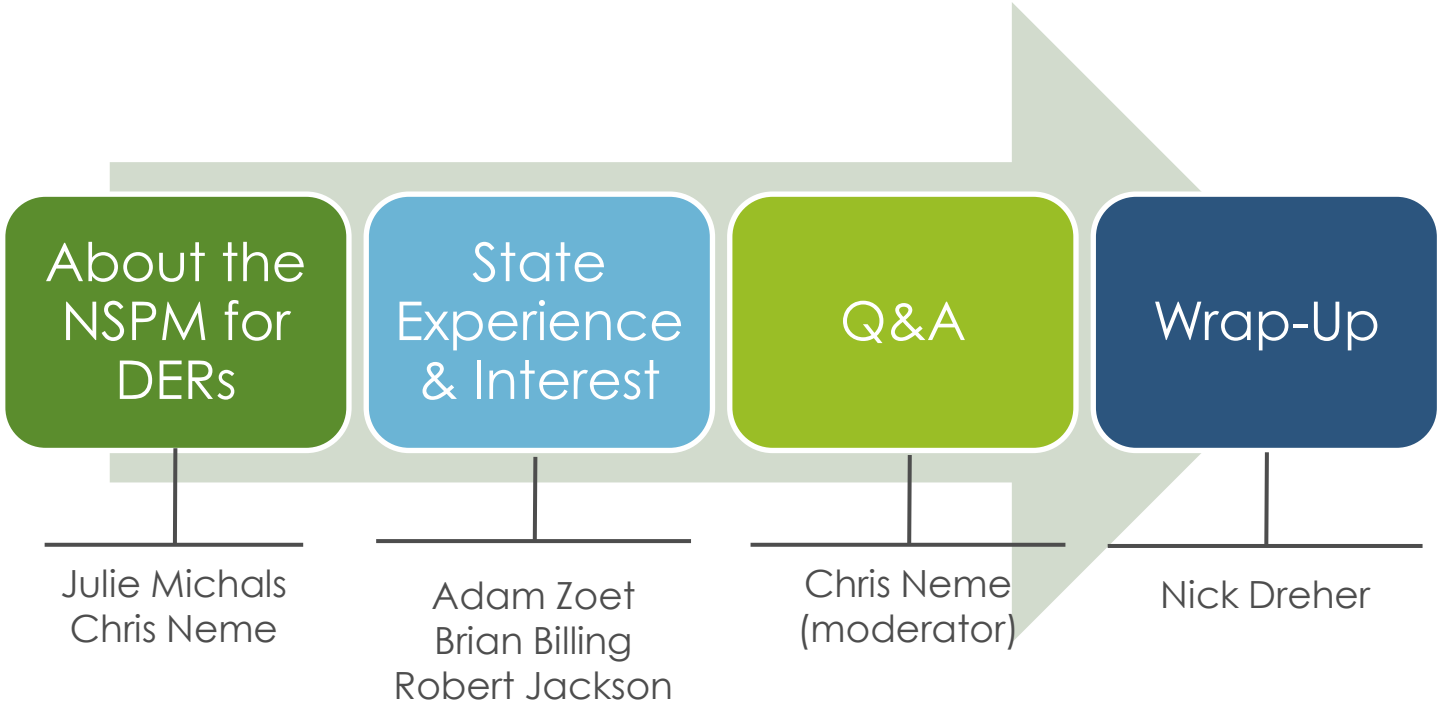
Brian Billing

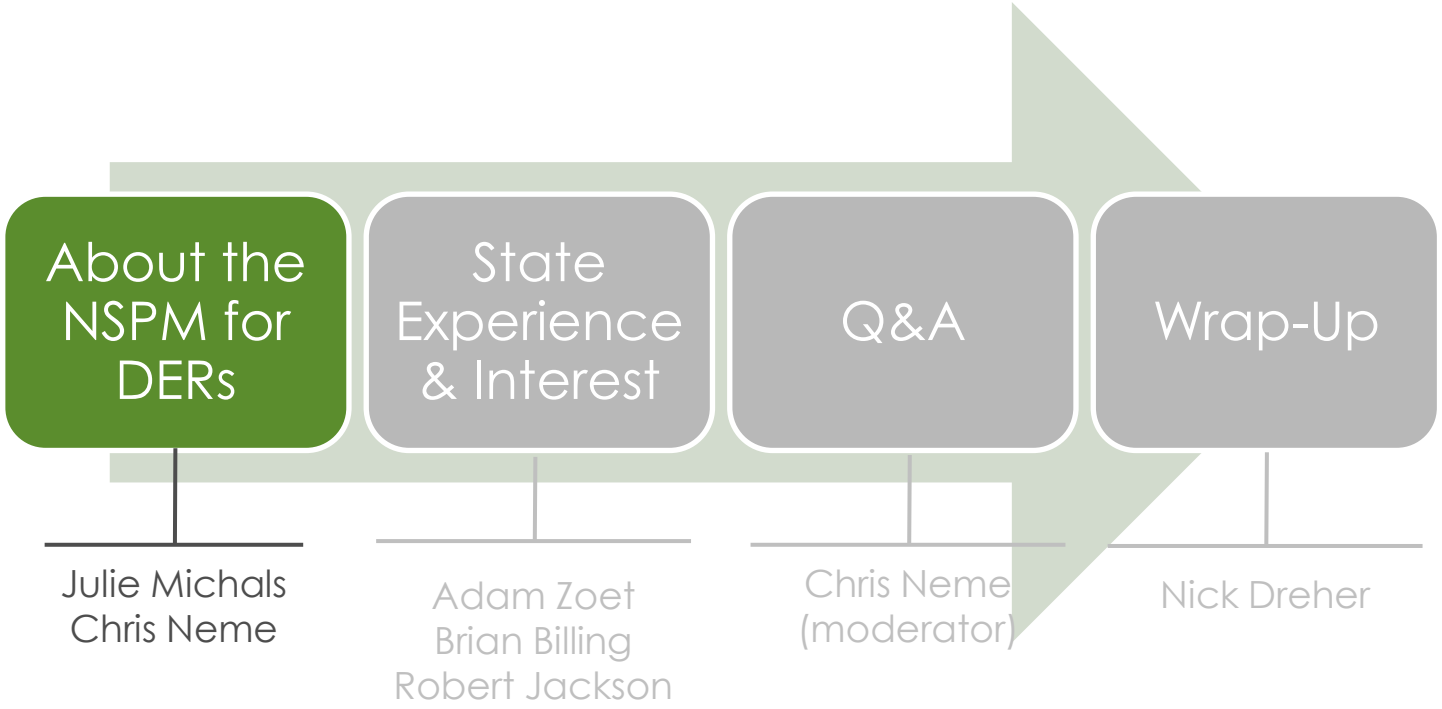
MEEA

Nick Dreher

MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

Agenda


About the NSPM for DERs
Julie Michals
Chris Neme
State Experience & Interest
Adam Zoet
Brian Billing
Robert Jackson
Q&A
Chris Neme (moderator)
Wrap-Up
Nick Dreher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National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources

MEEA Webinar

Chris Neme, Energy Futures Group
Julie Michals, E4theFuture

October 29, 2020

About NESP

The National Energy Screening Project (NESP) is a stakeholder organization that is open to all organizations and individuals with an interest in working collaboratively to improve cost-effectiveness screening practices for energy efficiency (EE) and other distributed energy resources (DERs).

Products include:

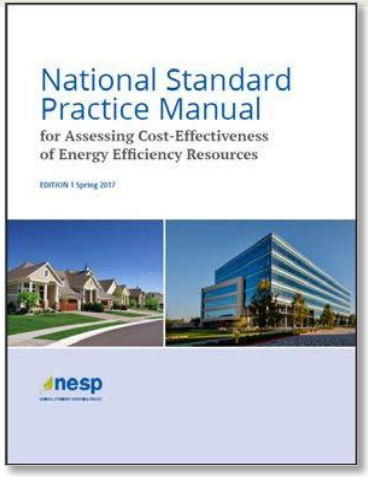
- NSPM for EE (2017)
- NSPM for DERs (2020)
- Database of Screening Practices (DSP)

NESP work is managed by E4TheFuture, with coordinated state outreach working with key partners

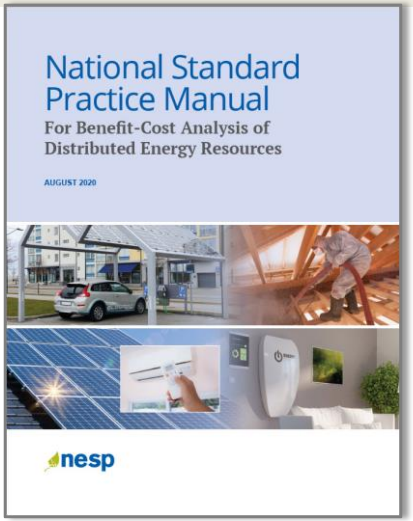
NESP work is funded by E4TheFuture and in part by US DOE

https://nationalenergyscreeningproject.org/

NSPM for EE
May 2017

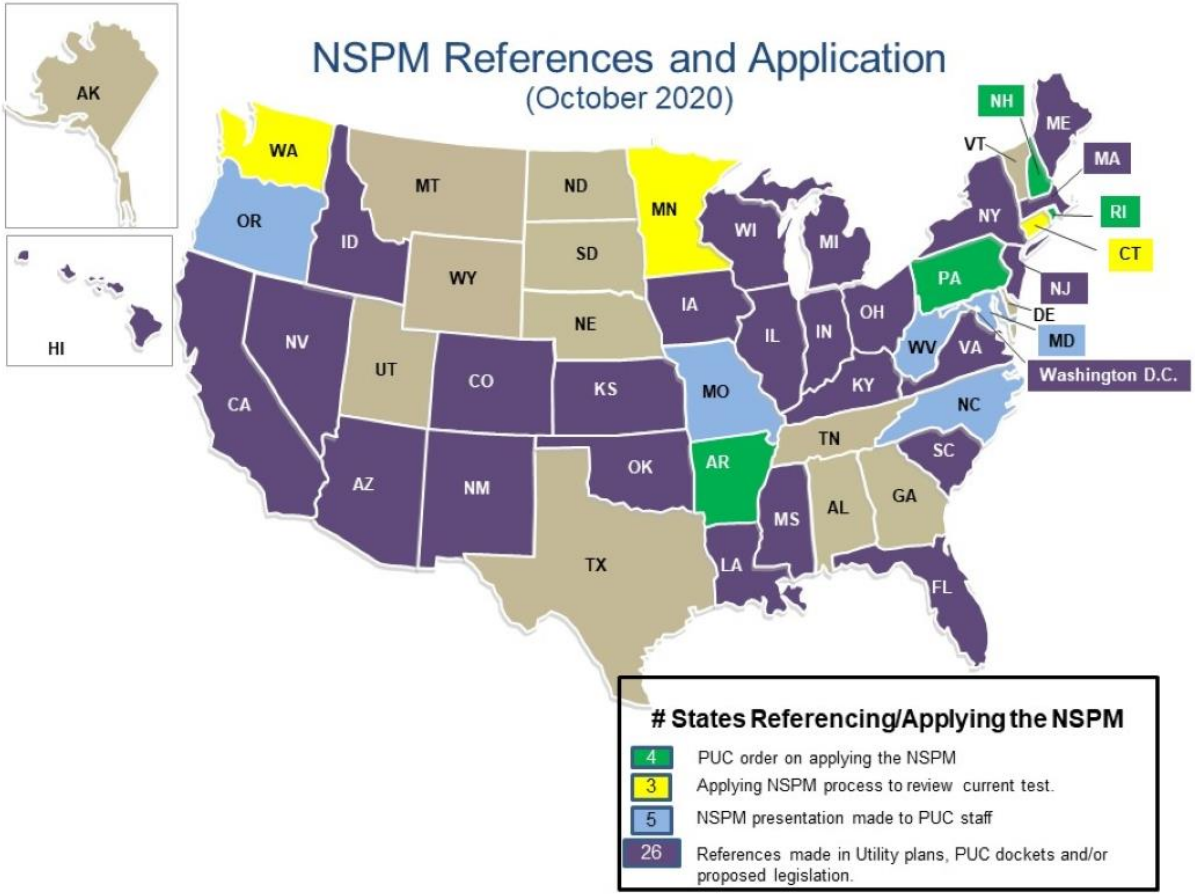


NSPM for DERs
August 2020



The NSPM for DERs incorporates and expands on the NSPM for EE. See comparison

NSPM for EE (2017) →	NSPM for DERs (2020)
'Resource Value Framework'	'NSPM BCA Framework'
'Resource Value Test'	'Jurisdiction-Specific Test' (JST)
6 Principles	8 Principles
7-step process to develop primary test	5-step process to develop primary test
Single DER analysis	Single- and multi-DER analyses
DERs covered: energy efficiency only	DERs covered: EE, DR, DG, DS, Electrification


NSPM References and Application
(October 2020)
AK
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AL
OH
WV
GA
FL
SC
NC
VA
PA
NY
MD
DE
NJ
CT
RI
MA
VT
NH
ME
Washington D.C.
States Referencing/Applying the NSPM
4 PUC order on applying the NSPM
3 Applying NSPM process to review current test.
5 NSPM presentation made to PUC staff
26 References made in Utility plans, PUC dockets and/or proposed legislation.

Why an NSPM for DERs?

Traditional cost-effectiveness tests often do not address pertinent state policies.

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

DERs are treated inconsistently in many BCAs.

DERs are often not accurately valued

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

The National Energy Screening Project (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.

NSPM for DERs - Development

- Managed by E4TheFuture
- Funded by E4TheFuture and US DOE (via LBNL)
- Multiple co-authors
  - Extensive understanding of regulatory economics
  - Specialized expertise with different DERs
- Advisory Group
  - 45+ individuals
  - Diversity of perspectives
  - Input on Manual outline and drafts

See co-authors and Advisory Group at:
https://www.nationalenergyscreeningproject.org/home/advisory-group/

NSPM for DERs – Audience and Uses

Audience: All entities overseeing/guiding DER decision (PUCs, SEOs, utilities, DER reps, evaluators, consumer advocates, and others)

Purpose: Guidance for valuing DER opportunities to inform policies and strategies that support state goals/objectives, such as:

- Expanding EE/DR plans, strategies, and programs to broader set of DERs.
- Prioritizing deployment of DERs to support grid reliability objectives (temporal and locational), energy resilience, security, and assurance.
- Evaluating and planning for non-wires/pipes solutions.
- Evaluating policies that encourage distributed generation.
- Incorporating DERs into distribution system planning.
- Achieving electrification goals, including EV goals.
- Achieving environmental and carbon emission objectives.

NSPM Outline

Principal focus this presentation, but will touch on all Parts

Executive Summary

Part 1: BCA Framework

1. Introduction
2. Principles
3. Developing BCA Tests

Part 2: DER Benefits and Costs

4. DER Benefits and Costs
5. Cross-Cutting Issues

Part 3: BCA for Specific DERs

6. Energy Efficiency
7. Demand Response
8. Distributed Generation
9. Distributed Storage
10. Electrification

Part 4: BCA for Multiple DERs

11. Multiple On-Site DERs
12. Non-Wires Solutions
13. System-Wide DER Portfolios
14. Dynamic System Planning

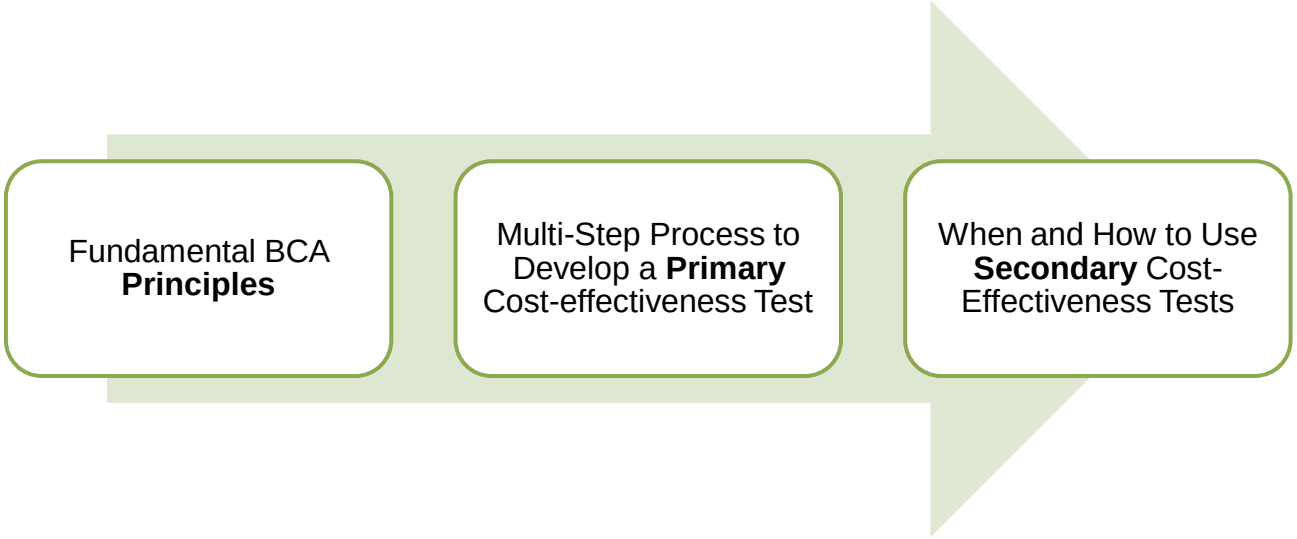
Appendices

A. Rate Impacts
B. Template NSPM Tables
C. Approaches to Quantifying Impacts
D. Presenting BCA Results
E. Traditional Cost-Effectiveness Tests
F. Transfer Payments
G. Discount Rates
H. Additional EE Guidance

NSPM for DERs – PART I

The NSPM Benefit-Cost Analysis Framework

NSPM BCA Framework



NSPM BCA Principles

1. Recognize that EE and other DERs can provide energy or power system needs, and therefore should be compared with other energy resources and treated consistently for benefit-cost analyses.
2. Align primary test with applicable policy goals.
3. Ensure symmetry across costs and benefits
4. Account for all relevant, material impacts (based on applicable policies), even if hard to quantify.
5. Conduct a forward-looking, long-term analysis that captures incremental impacts of the DER investment.
6. Avoid double-counting through clearly defined impacts.
7. Ensure transparency in presenting the analysis and the results.
8. Conduct BCA separate from Rate Impact Analyses because they answer different questions.

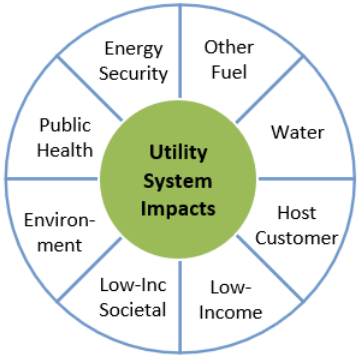
5-Step Process to Develop Primary CE Test:
Jurisdiction-Specific Test (JST)

STEP 1	**Articulate Applicable Policy Goals**
STEP 2	**Include All Utility System Impacts**
STEP 3	**Decide Which Non-Utility System Impacts to Include**
STEP 4	**Ensure that Benefits and Costs are Properly Addressed**
STEP 5	**Establish Comprehensive, Transparent Documentation**

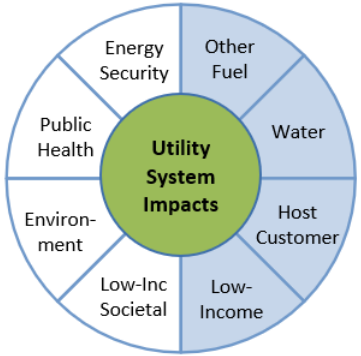
The Jurisdiction Specific Test (JST)

Hypothetical JSTs as compared to traditional tests

JST 1 = UTC/PAC Test



JST 2 = TRC Test

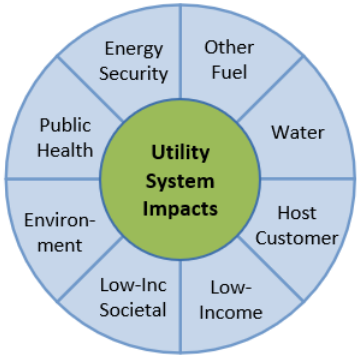


Full range of utility system impacts included

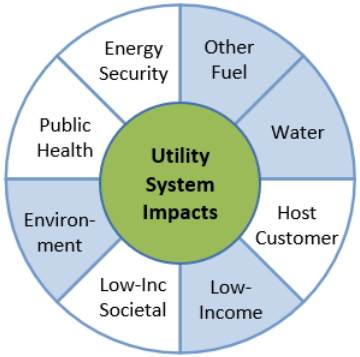
Non-utility system impacts included

Non-utility system impacts not included

JST 3 = SCT



JST 4 ≠ traditional CE test *



*JST 4 and other example JSTs 5, 6, 7 etc. could include a different set of non-utility system impacts *depending on the applicable policies* of those jurisdictions.

JSTs may or may not include host customer (participant) impacts and may or may not align with traditional tests.

Use of Secondary Tests

NSPM provides guidance on **when and how to use secondary tests.**

While a jurisdiction's primary test informs whether to fund or otherwise support DERs, secondary tests can help to:

- inform decisions on how to prioritize DERs;
- inform decisions regarding marginally non- and/or cost-effective DERs (while encouraging consistent treatment of DERs); and
- Inform program design.

NSPM for DERs – PART II

DER Benefits & Costs and Cross-Cutting Issues

Ch 4. DER Benefits & Costs

Electric Utility System Impacts

Type	Utility System Impact	Description
Generation	Energy Generation	The production or procurement of energy (kWh) from generation resources on behalf of customers
	Capacity	The generation capacity (kW) required to meet the forecasted system peak load
	Environmental Compliance	Actions to comply with environmental regulations
	RPS/CES Compliance	Actions to comply with renewable portfolio standards or clean energy standards
	Market Price Effects	The decrease (or increase) in wholesale market prices as a result of reduced (or increased) customer consumption
	Ancillary Services	Services required to maintain electric grid stability and power quality
Transmission	Transmission Capacity	Maintaining the availability of the transmission system to transport electricity safely and reliably
	Transmission System Losses	Electricity or gas lost through the transmission system
Distribution	Distribution Capacity	Maintaining the availability of the distribution system to transport electricity or gas safely and reliably
	Distribution System Losses	Electricity lost through the distribution system
	Distribution O&M	Operating and maintaining the distribution system
	Distribution Voltage	Maintaining voltage levels within an acceptable range to ensure that both real and reactive power production are matched with demand
General	Financial Incentives	Utility financial support provided to DER host customers or other market actors to encourage DER implementation
	Program Administration	Utility outreach to trade allies, technical training, marketing, and administration and management of DERs
	Utility Performance Incentives	Incentives offered to utilities to encourage successful, effective implementation of DER programs
	Credit and Collection	Bad debt, disconnections, reconnections
	Risk	Uncertainty including operational, technology, cybersecurity, financial, legal, reputational, and regulatory risks
	Reliability	Maintaining generation, transmission, and distribution system to withstand instability, uncontrolled events, cascading failures, or unanticipated loss of system components
	Resilience	The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions

Ch 4. DER Benefits & Costs

Gas Utility or Other Fuel Impacts

(Inclusion depends on policy goals)

Type	Gas Utility or Other Fuel Impact	Description
Energy	Fuel and Variable O&M	The fuel and O&M impacts associated with gas or other fuels.
	Capacity	The gas capacity required to meet forecasted peak load.
	Environmental Compliance	Actions required to comply with environmental regulations.
	Market Price Effects	The decrease (or increase) in wholesale prices as a result of reduced (or increased) customer consumption.
General	Financial Incentives	Utility financial support provided to DER host customers or other market actors to encourage DER implementation.
	Program Administration Costs	Utility outreach to trade allies, technical training, marketing, and administration and management of DERs.
	Utility Performance Incentives	Incentives offered to utilities to encourage successful, effective implementation of DER programs.
	Credit and Collection Costs	Bad debt, disconnections, reconnections.
	Risk	Uncertainty including operational, technology, cybersecurity, financial, legal, reputational, and regulatory risks.
	Reliability	Maintaining the gas or other fuel system to withstand instability, uncontrolled events, cascading failures, or unanticipated loss of system components.
	Resilience	The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.

Ch 4. DER Benefits & Costs

Host Customer Impacts

(inclusion depends on policy goals)

Type	Host Customer Impact	Description
Host Customer	Host portion of DER costs	Costs incurred to install and operate DERs
	Host transaction costs	Other costs incurred to install and operate DERs
	Interconnection fees	Costs paid by host customer to interconnect DERs to the electricity grid
	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
	Host Customer NEIs	Benefits and costs of DERs that are separate from energy-related impacts
	Low-income NEIs	Non-energy benefits and costs that affect low-income DER host customers

Host Customer NEI	Summary 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 & 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)

Ch 4. DER Benefits & Costs

Societal Impacts

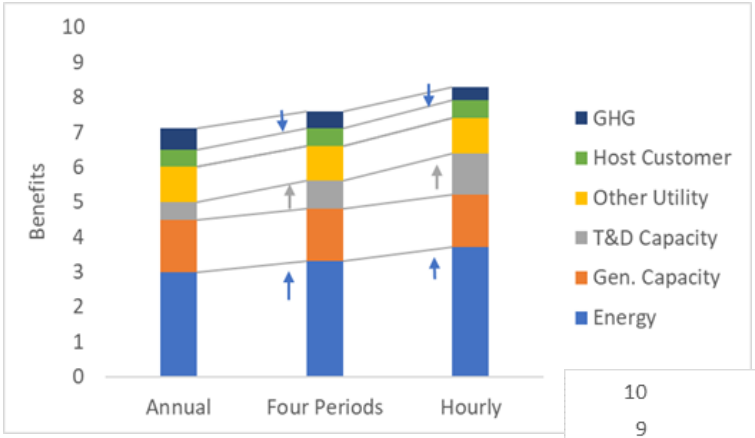
(Inclusion depends on policy goals)

Type	Societal Impact	Description
Societal	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, water, and other environmental impacts
	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

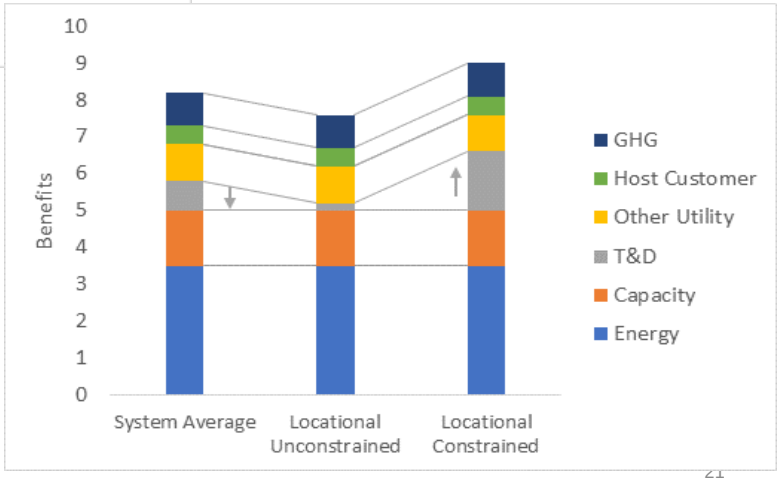
Ch 5. Cross-cutting DER Considerations

- Temporal Impacts
- Locational Impacts
- Interactive Effects
- Behind-the-Meter Versus Front-of-the-Meter
- Air Emission Impacts
- Transfer Payments and Offsetting Impacts
- Variable Renewable Generation Impacts
- Wholesale Market Revenues
- Free Riders and Spillover Impacts
- Discount Rates

Temporal Impacts on EE Benefits
Hypothetical Example



Location Impacts on DR Benefits
Hypothetical Example



NSPM for DERs – PART III

Benefit-Cost Analysis for Specific DER Technologies

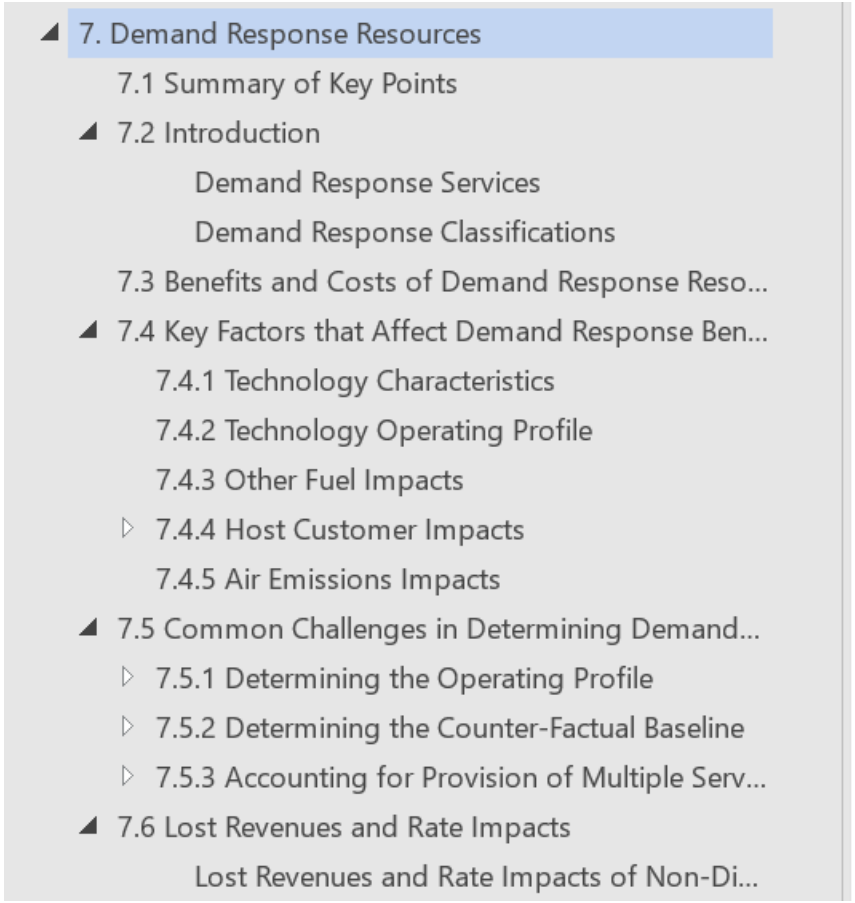
NSPM for DERs
DER Specific Chapters 6-10

- Energy Efficiency Resources
- Demand Response Resources
- Distributed Generation Resources
- Distributed Storage Resources
- Electrification

Each chapter covers:

- Benefits and costs of the specific resource
- Key factors that affect impacts
- Common challenges in estimating benefits and costs

Example: Demand Response chapter content



Example: Demand Response Impacts

Benefit or Cost (or 'Depends')

Table 7-1. Potential Impacts of Demand Response: Electric Utility System

Type	Utility System Impact	Benefit or Cost	Notes on Applicability
Gen.	Energy Generation	●	Usually a benefit, but potential net impacts of load-shifting and total load increases must also be accounted for
	Generation Capacity	●	This is frequently the primary objective of DR
	Environmental Compliance	●	Usually a benefit due to reduction in use of peaker generation, but cumulative and marginal emissions impacts, including those associated with shifted load, must also be accounted for
	RPS/CES Compliance	●	Typically, the demand reduction targets a marginal fossil generator, creating a benefit; impacts of load-shifting or load increases at other times must be accounted for; DR may also improve the ability of the system to accept higher deployment of variable renewable resources
	Market Price Response	●	Usually a benefit since DR tends to target higher-priced supply in wholesale markets; depends on generation market operation
	Ancillary Services	●	Usually a benefit due to load reductions when the system is stressed
Trans.	Transmission Capacity	●	Usually a benefit due to load reductions during periods of peak demand
	Transmission System Losses	●	Usually a benefit due to load reductions during periods of peak demand, when losses tend to be disproportionately higher
Dist.	Distribution Capacity	●	Usually a benefit due to load reductions during periods of peak demand; however, circuit-level peaks are not always aligned with system peaks, and thus load-shifting to address system peaks could result in increased peak demand at the circuit or substation level, and *vice versa*
	Distribution System Losses	●	
	Distribution O&M	●	
	Distribution Voltage	●	DR can be used to manage voltage fluctuations on the grid
General	Financial Incentives	●	
	Program Administrative Costs	●	
	Utility Performance Incentives	●	
	Credit and Collection	●	Indirect benefit due to reduced overall system costs
	Risk	●	Usually a benefit due to reduced load when the system is stressed
	Reliability	●	Usually a benefit due to better asset utilization of generation resources and enhanced grid flexibility
	Resilience	●	Potentially a benefit due to reduced restart load

● = usually a benefit for DR

● = usually a cost for DR

● = could be either a benefit or cost for DR, depending upon application of DR.

○ = not relevant for DR

NSPM for DERs
Multi-DER Chapters 11-14

Multiple On-Site DERs
- Costs and Benefits
- BCA Issues and Challenges
- Case Study

Non-Wires Solutions
- NWS Costs and Benefits Summary
- BCA Issues and Challenges
- Case Study

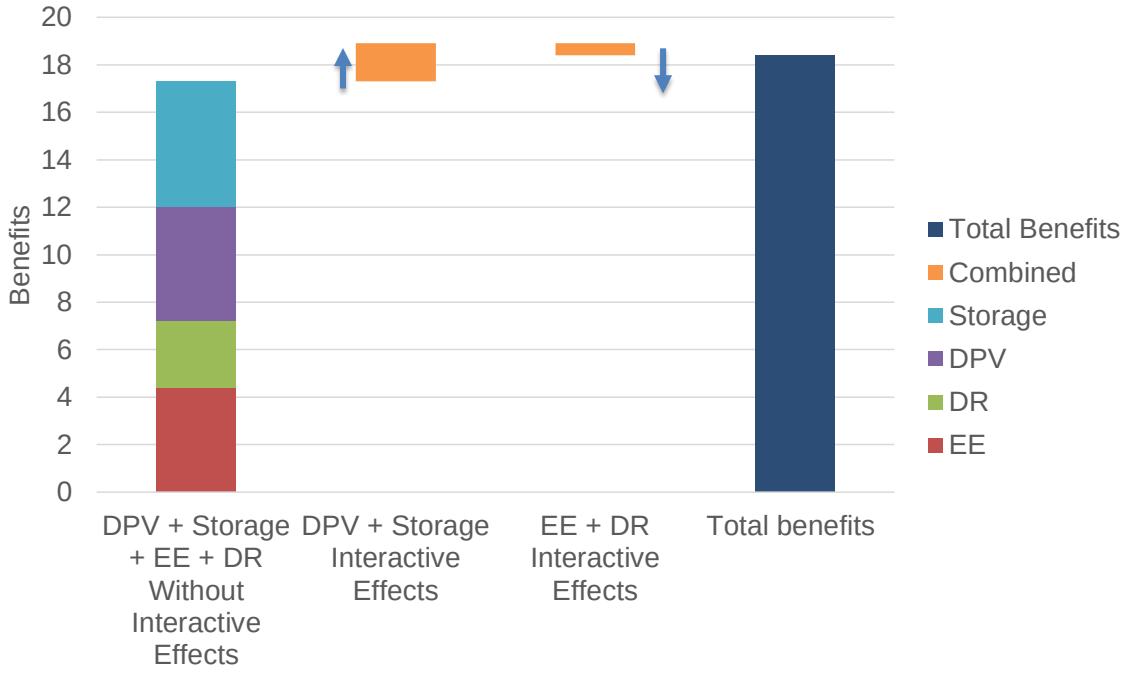
Systemwide DER Portfolios
- Consistent Cost-Effectiveness Tests
- Enabling other DERs and Interactive Effects
- DER Planning Objectives
- Multiple Tests
- Designing and Optimizing DER Portfolios

Dynamic System Planning
- Components of Integrated Distribution Planning
- Early Lessons Learned
- BCA Issues and Challenges

Ch 11: BCA for Multiple On-site DERs

- Buildings, facilities, campuses, microgrids, etc.
- DER interactive effects is key when focusing on multiple-DER analysis.
    1. Avoided costs: localized DER impacts can affect localized avoided costs.
    2. kWh/kW: combined DER impacts ≠ sum of individual DER impacts
    3. Enabling: DER #1 makes it is easier or more cost-effective to deploy DER #2

Ch 11: Multi On-site DERs
Example of GEB Interactive Effects - Benefits

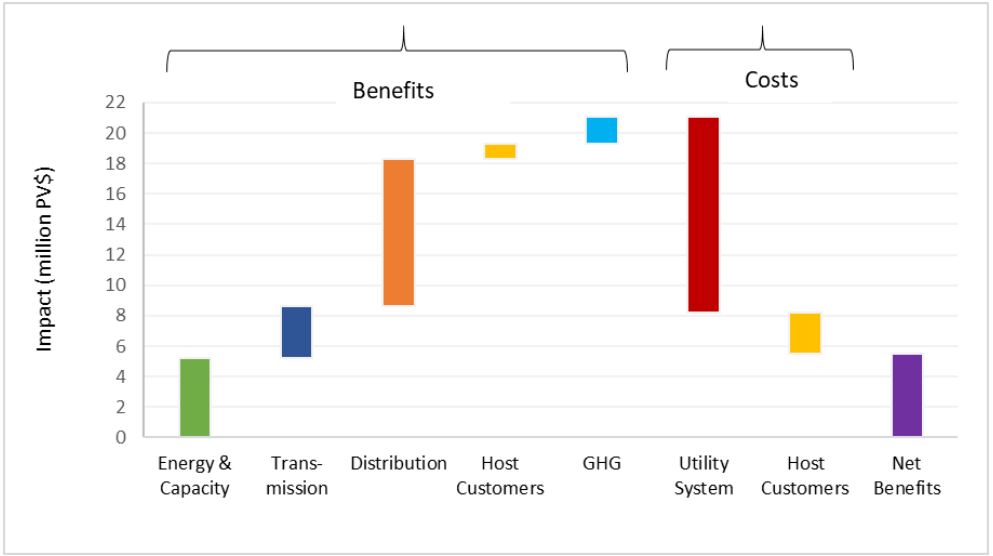


Ch 12: Non-Wires Solutions

Case Study – NWS Distribution Need

DERs: EE lighting and controls; DR Wi-Fi-enabled thermostats; DPV; and DS (thermal and battery storage)

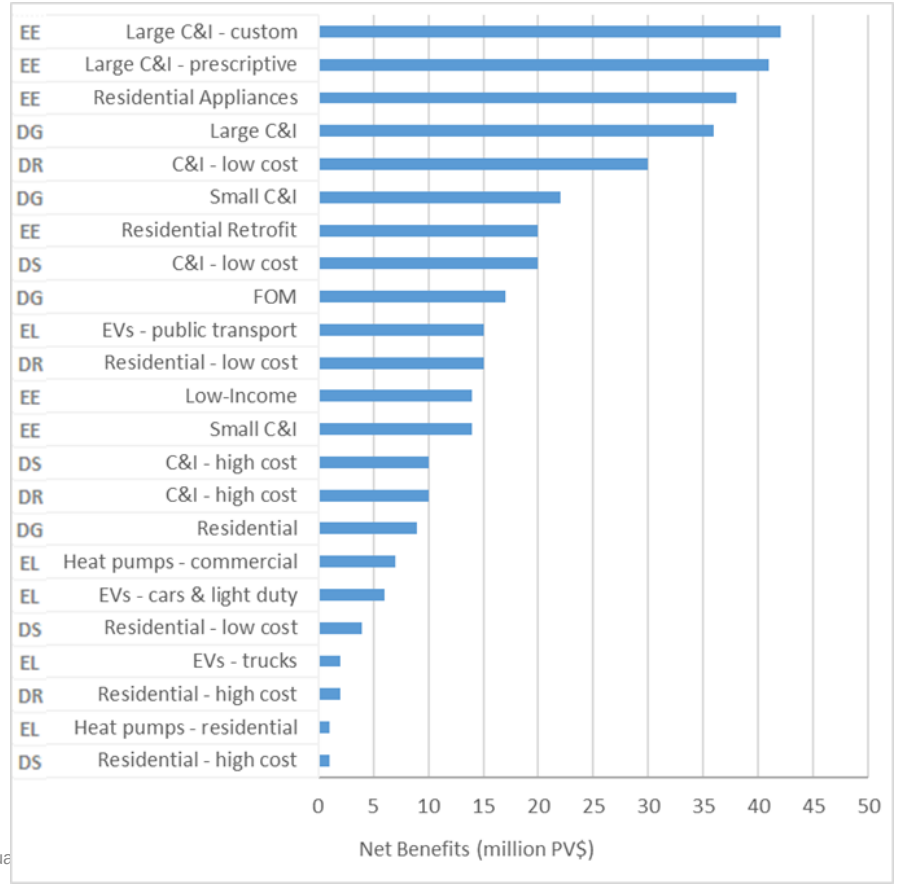
- Assumes non-coincident with overall system peak (e.g., constrained distribution feeder peaks at 1-5pm, while system peaks at 5-9pm)
- Assumes system-peak hours entail higher marginal emissions rates than NWS = delivers GHG benefits.
- Assumes DER operating profiles where:
  - Storage charges and discharges during system off-peak hours
  - DR reduces and shifts load during system off-peak hours
  - Solar contributes to distribution and some system-peak needs
  - EE has a general downward trajectory on usage



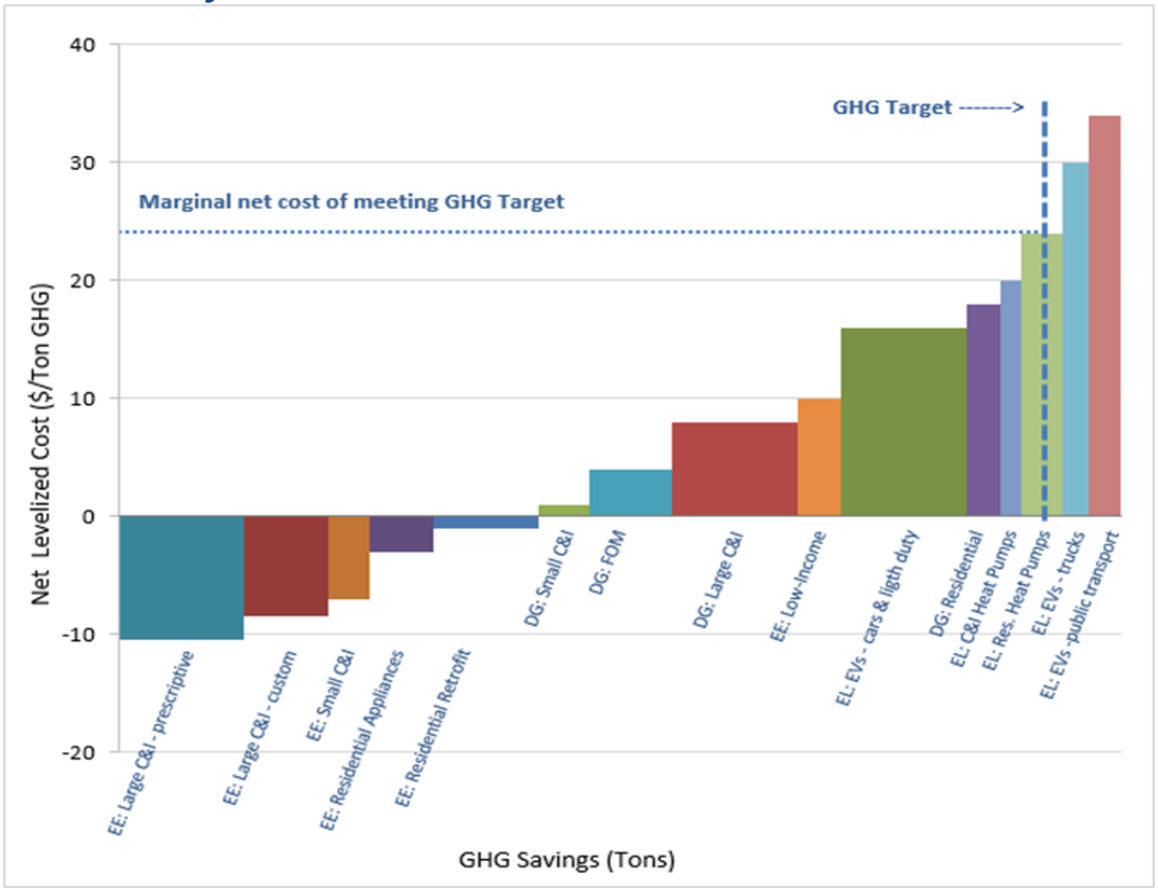
Ch. 13. System-Wide DER Portfolios

- Question: How should any one utility optimize all DER types?
  - What to do in the absence of IDP or IGP?
- Ideally, should use a single primary BCA test for all DER types
  - This may require reconciling different policy goals for different DER types.
- Ideally, should pursue all cost-effective DERs
- If not, the jurisdiction should identify priority objectives:
  - Implement the most cost-effective DERs.
  - Encourage a diverse range of DER technologies.
  - Encourage customer equity.
  - Achieve GHG goals at lowest cost.
  - Avoid unreasonable rate impacts.
  - Implement all cost-effective DERs.
  - Achieve multiple planning objectives.

Ch 13. Objective: Implement the Most Cost-Effective DERs



Ch 13: System-Wide DER Portfolios



Ch 14. Dynamic System Planning

Type of Utility System	Planning Practice	Planning Practice Accounts for:			
		Distribution System	DERs	Transmission System	Utility-Scale Generation
Distribution-only & vertically-integrated	Traditional distribution planning	✓	-	-	-
	Integrated distribution planning	✓	✓	-	-
Vertically-integrated	Transmission planning	-	-	✓	-
	Integrated resource planning	-	✓	-	✓
	Integrated grid planning	✓	✓	✓	✓

Next steps

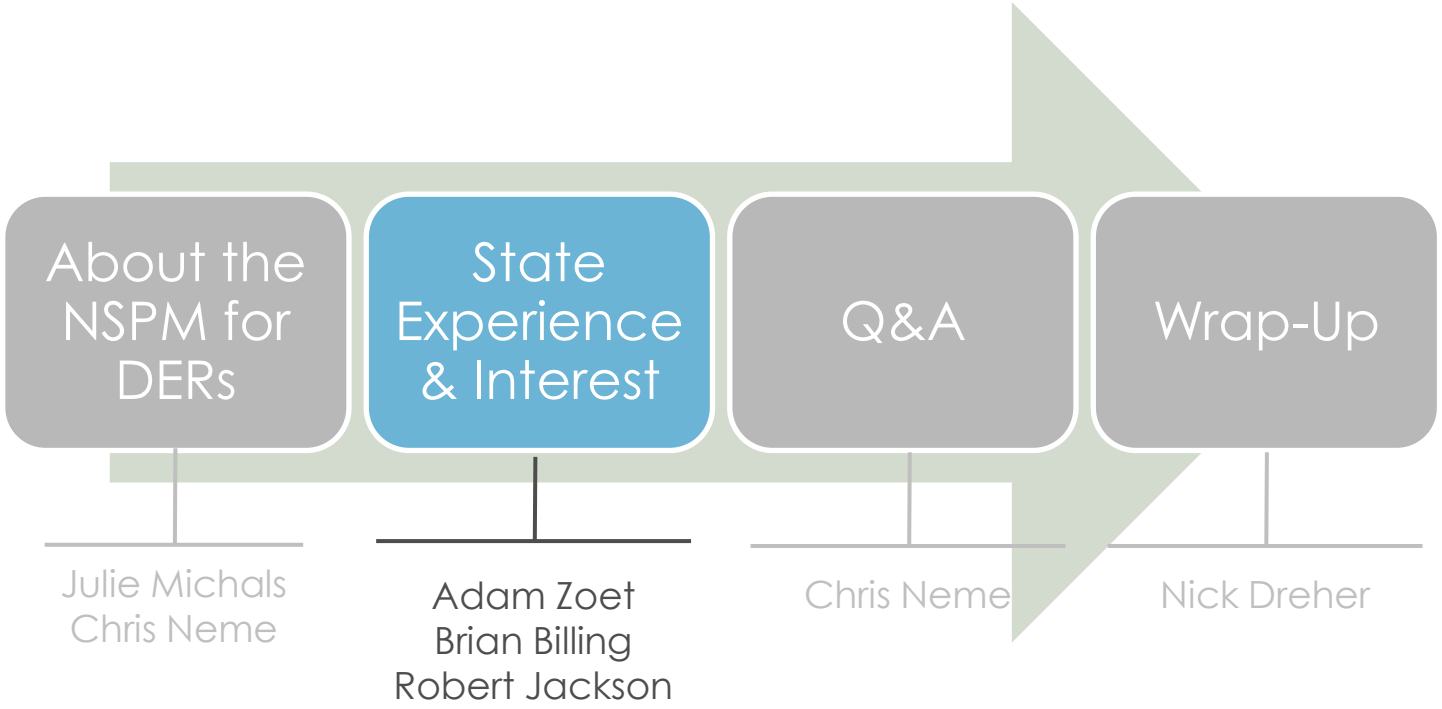
- Publication – August 2020
- Webinars and Training (2020-21)
  - General webinars and presentations
  - NRRI Regulatory Training Initiative – BCA training module using the NSPM (in development)
- State outreach and state technical support available
  - Provided via NESP, contingent upon funding TBD
- NSPM is a ‘living document’ – plan is to update and improve over time, add case studies, etc…

For More Info…

Stay informed with the *NSPM Quarterly* Newsletter:
https://nationalenergyscreening.org/national-standard-practice-manual/news/

To download the NSPM and find supporting Resources visit:
http://www.nationalenergyscreening.org/

Questions? Email NSPM@nationalenergyscreening.org
or Jmichals@E4TheFuture.org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Minnesota Department of Commerce

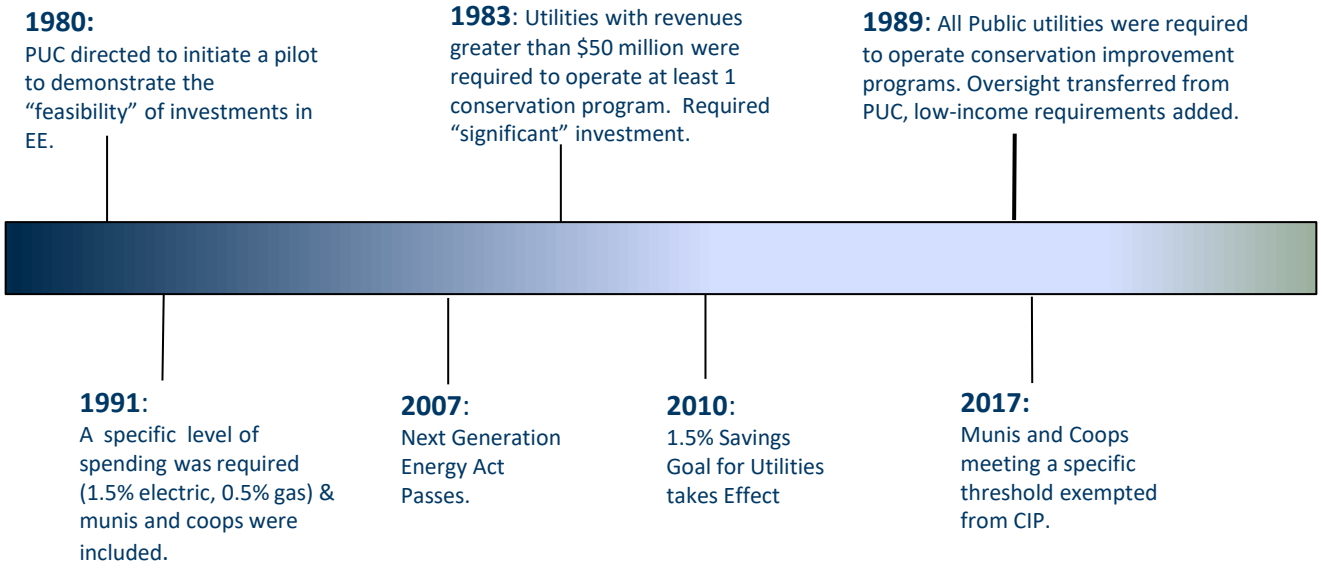
Minnesota's Experience
Applying the NSPM to Cost-Effectiveness Tests

Adam Y. Zoet| Energy Planner, Director

Overview

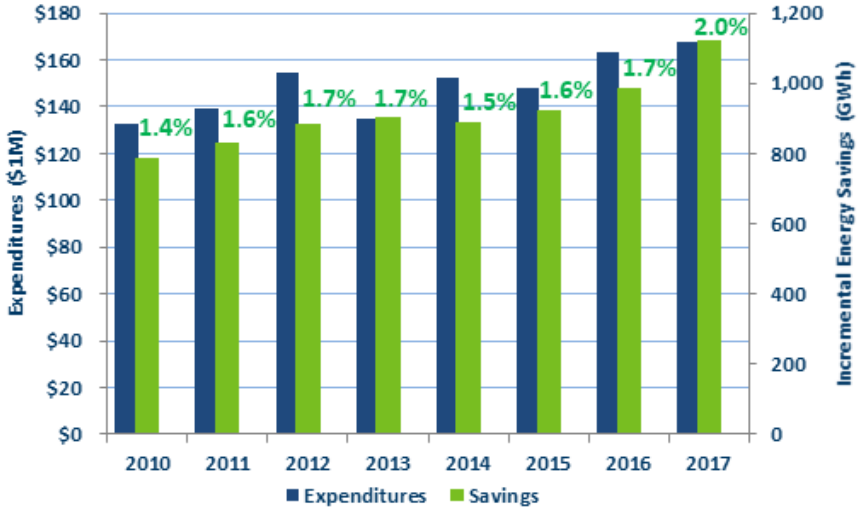
1. Minnesota Background
2. Minnesota's Cost-Effectiveness Framework
3. Overview of Synapse's Cost-effectiveness Study
4. Current Cost-Effectiveness Updates

Utility Driven Efficiency Programs in MN

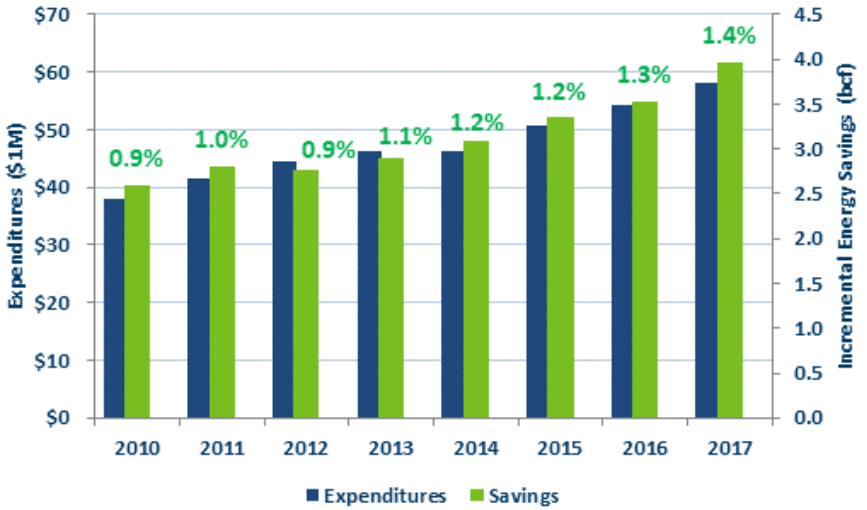


MN Energy Efficiency Achievements

CIP Electric Results 2010-2017



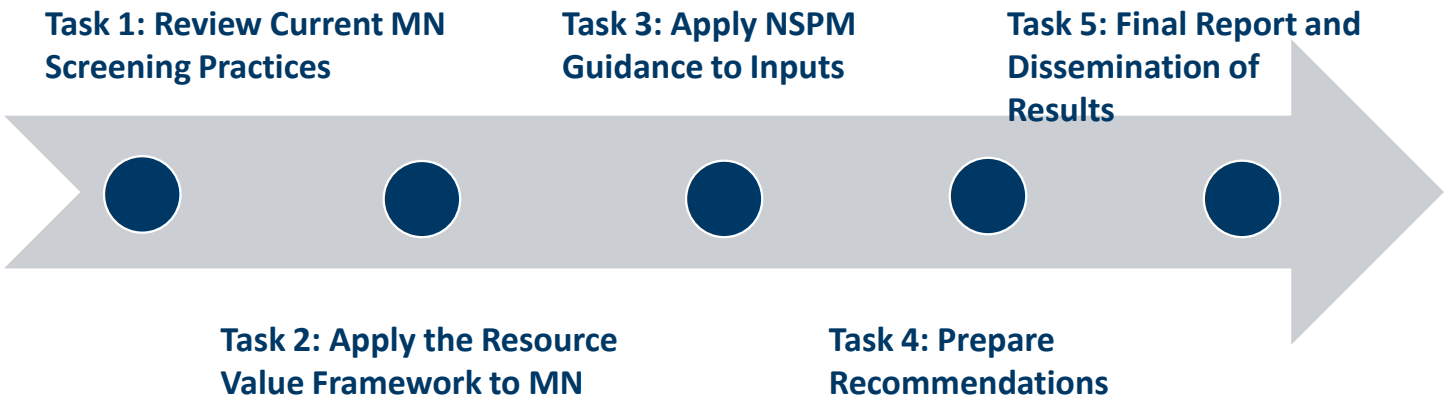
CIP Natural Gas Results 2010-2017



MN Current Practice - Cost-Effectiveness Tests

- 2007 Next Generation Energy Act:
  - In determining cost-effectiveness, the commissioner shall consider the costs and benefits to ratepayers, the utility, participants, and society.
- Consequently, utilities calculate results for:
  - Rate impact measure test
  - Utility cost test
  - Participant cost test
  - Societal cost test
- The societal cost test is used as the primary test for determining cost-effectiveness.

MN Cost-Effectiveness Study



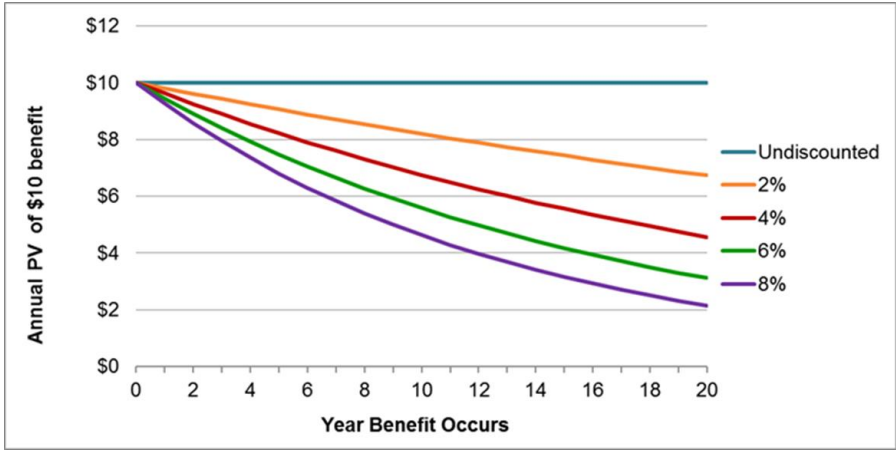
Study's Goal: Evaluate how key elements of the NSPM could be applied to energy efficiency cost-effectiveness analyses in MN

MN Current Practice – Synapse's Findings

- In general, current MN cost-effectiveness practices are quite good:
  - They generally account for key MN policy goals.
  - They are generally comprehensive, in terms of impacts included.
  - Some inputs (e.g., environmental costs) are well established.
- However, some elements could use improvement:
  - Some utility impacts are missing.
  - Some societal impacts are missing.
  - Participant impacts are treated inconsistently.
  - Discount rates warrant reconsideration.

Applying Synapse's Findings: Cost-Effectiveness Discount Rates

- Recent Updates:
  - MN now requires a new "CIP Utility Discount Rate" for the Utility Cost Test (UCT).
    - Discount rate averages 5.5%
  - Previously, the utilities used their weighted average cost of capital (WACC) in the UCT.
    - Discount rate averaged 7%
- Long-Term Cost-Effectiveness Update Process:
  - MN also plans to initiate a longer-term examination of cost-effectiveness issues.



Takeaways from Applying NSPM to Minnesota

- Benefits:
  - Educational
  - Transparency
  - Replicability
- Challenges:
  - Policy and Statute Gray Areas
  - Quantifying Non-Traditional Benefits/Costs

Thank You!

Adam Zoet

Adam.zoet@state.mn.us

Brian Billing

AEP Ohio

AEP OHIO℠

An AEP Company

Ohio 2021+

Current legislation effectively ends mandated Energy Efficiency in 2021 if targets are achieved.

Without legislative targets, AEP Ohio still wanted to offer a modest suite of programs for our customers.

- This provided us the opportunity to design the direction and magnitude of our trajectory.

Former Cost tests to “performer” Cost tests

AEP Ohio leveraged the NSPM to create a more holistic benefit/cost test. Starting with the avoided generation for the UCT (Middle of the NSPM ‘Pie’)

- AEP Ohio then used operating company specific studies, or a regional study where available to quantify slices to the pie.

To NEI or not to NEI?

In 2018 - AEP Ohio contracted with DNV GL for to study Non-Energy Impacts(NEIs) for C&I Energy Efficiency participants.

- https://www.aepohio.com/save/business/NonEnergy/Default.aspx

- Combined sector level outputs for cost tests

Sector	NEB $/kWh savings	Average of kWh savings	Incentives	Average of Energy cost savings	NEB $/yr
Commercial Total	$0.0188	19,345	$1,549	$2,321	$297
Manufacturing and Industrial Total	$0.0168	86,690	$5,457	$10,390	$987
Public Total	$0.0204	27,322	$1,983	$3,279	$327
Grand Total	**$0.0183**	**29,565**	**$2,331**	**$3,547**	**$381**

Low Income impacts

AEP Ohio has quantified the reduction in Charge offs and the reduction in collections needed for the Universal Service Fund(USF).

- Using the rate benefits for the Participant test (PCT), for every $1 spent on the Low Income program it reduced the collections needed on the USF by $1.5 dollars.

Demand Reduction Induced Price Effects (DRIPE)

What is it? Reduction in demand lowers the price. Look at gas prices during the pandemic as a real word example.

We leveraged a 2015 study done in our RTO(PJM) for ComEd by Neme/Chernick.

- While not specific to AEP Ohio, it was assumed the RTO market effects should be relatively similar.
- Disclaimer -- AEP Ohio did not apply DRIPE on the entire load, but only to the energy savings portion of the portfolio.

DSM Plan test results

Program	UCT	RVT
Efficient Products	3.0	3.0
Retrofit Low Income	0.2	1.3
Residential Demand Response	1.3	1.3
New Homes	1.4	1.4
e3smart	1.5	1.5
Residential Subtotal	2.2	2.2
Efficient Products for Business	4.1	5.8
Process Efficiency	5.1	7.1
Business New Construction	3.3	4.8
Small Business Express	1.4	2.0
C&I Demand Response	N/A	N/A
Business Subtotal	3.7	6.2
Plan Total	2.3	3.0

Closing thoughts

Use the NSPM as a set of ingredients, and then work with the commission and interested parties on what should be included in the “pie”.

- AEP Ohio based our Resource Value Test on quantifiable studies based on recent and geographic similarities.
  - More regional studies could support the wider adoption of the Resource Value Test.
- If AEP Ohio is able to get the Resource Value Test approved, we plan to continue refining and improving our methodology.

Robert Jackson

Michigan Department of Environment, Great Lakes & Energy (EGLE)

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

State Energy Office
NSPM Usage for Evaluating Non-regulatory Distributed Energy Resources and Programs

October 2020

Mission

The Mission of the Energy Office is to develop sound policies and programs that promote economic growth, increase energy efficiency in the public and private sectors, reduce the state's dependence on import energy; and create and retain Michigan jobs.

State Energy Office

The Energy Office in conjunction with the Michigan Public Service Commission and its strategic partners are engaged in:

- Advising the governor and legislators on energy issues;
- Ensuring that the needs and issues of industry, business, and municipal governmental energy consumers are considered during energy policy and program development;
- Supporting advanced manufacturing and industrial efficiency efforts as a means to retain and create jobs;
- Vitalizing our communities and increasing business investment;

State Energy Office

- Education outreach and incentives – adopting energy efficiency measures that lower utility costs and reduce waste;
- Demonstrating the application of emerging energy technologies in real-world situations;
- Working with other state agencies to deploy cost-effective, state-of-the-art technologies to reduce public facility energy consumption at the state and local levels;
- Communicating to the public the importance of energy to economic development and the environment, emphasizing the value of cost-effective energy efficiency measures;

State Energy Programs

- Community Energy Services;
- Renewable Energy Programs;
- Clean Energy Manufacturing Programs: and
- Transportation.

Benefit Cost Analysis for NR-DER Investments

9 BCA Principles applied to SEO Programs

- Treat DERS as a SEO Resource;
- Align with Governor's Energy Policy Goals and Economic Development;
- Ensure Symmetry (Est. net impacts from policies, community needs, etc.):
- Account for Relevant, Materials, Impacts (Intangibles that could affect BCA);
- Conduct Forward Looking, Long-Term; Incremental Analysis;

Benefit Cost Analysis for NR-DER Investments

9 BCA Principles applied to SEO Programs - Cont.

- Avoid Double Counting and Under Counting;
- Ensure Transparency in Assumptions and Mythologies;
- Policy Impacts on Program Costs and Implementation; and
- Avoid Bias.

Contact Information

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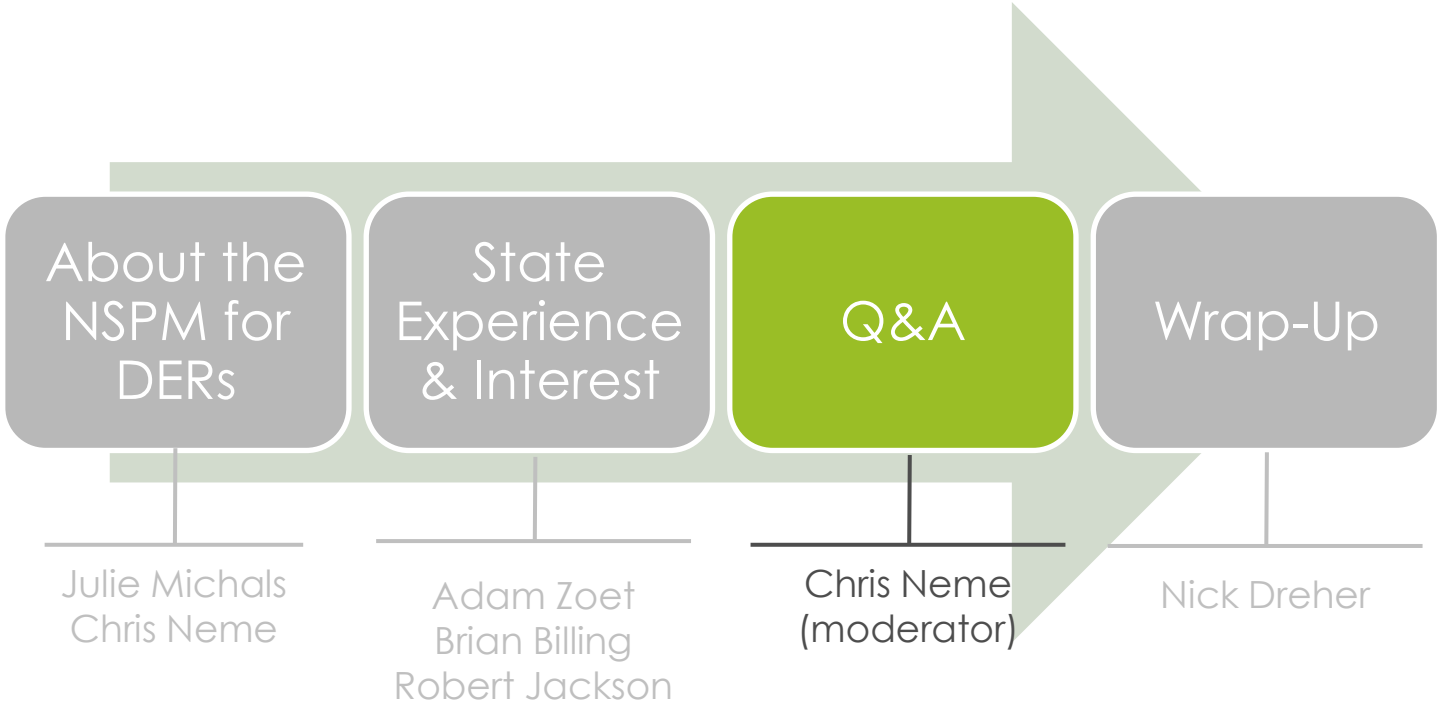
Assistant Division Director/Energy Ombudsman
Michigan Department of Environment, Great Lakes, and Energy
jacksonr20@michigan.gov
517-930-6163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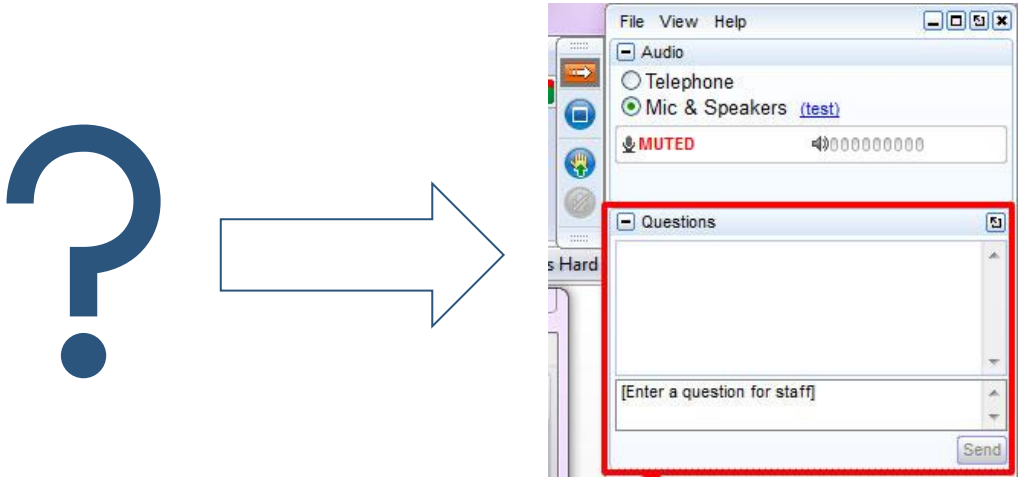
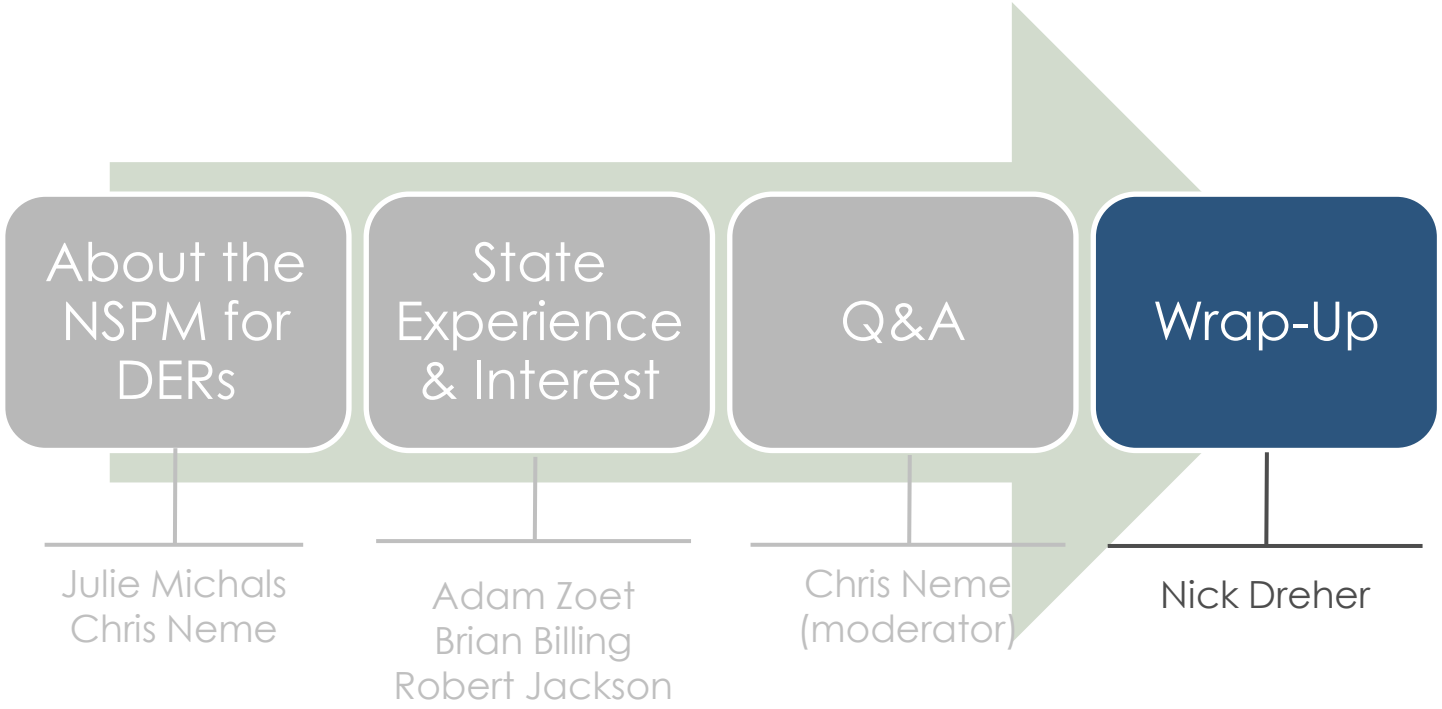
Please type your questions in the **chat box**



& we will get to as many as we can in the available time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Key Takeaways

The NSPM for DERs expands the framework beyond EE

Guidance supports a broader range of policy objectives

Can look at single & multiple DERs, with interactive effects, using the same tests

Midwest use of the NSPM is growing

MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

MEEA is your **Midwest NSPM Resource**

- Discussion of NSPM principles
- Stakeholder facilitation
- Connection with NESP & NSPM co-authors
- Resources & examples

MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

SAVE THE DATE

2021 MIDWEST ENERGY SOLUTIONS CONFERENCE

VIRTUAL EXPERIENCE | February 16-19

Presented by MEEA
MIDWEST ENERGY EFFICIENCY ALLIANCE

Thank you!

***Greg Ehrendreich**, Sr. Analyst*
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***Nick Dreher**, Director of Policy*
ndreher@mwalliance.org

Extra Slides

Principle #8:
Rate Impacts ≠ Cost-Effectiveness

- They include different things…
  - Cost-effectiveness: total new costs vs. total new cost savings
  - Rate impacts: include past/sunk costs, no value to avoided energy costs
- …to answer very different questions:
  - Cost-effectiveness: Do total costs go down? By how much?
  - Rate impacts: Do rates go up?
- Costs can go down even if rates go up (and vice versa)
  - 1000 kWh * $0.10/kWh = $100
  - 800 kWh * $0.11/kWh = $ 88
- Bottom line: DER rate impacts are concern about equity, not cost
  - Equity between DER program participants and non-participants

Equity Effect of Rate Impacts

- A legitimate consideration for how much DER, which DER
  - Separate from (or in addition to) cost-effectiveness
- But should be quantified, considered in context
  - Magnitude of rate impact
  - % of customers with rate impact, but no offsetting savings (non-participants)
  - Magnitude of EE benefit
- Example: Synapse 2014 Study of Vermont EE Programs
  - 20-year time horizon for aggressive EE
  - 95% of Res customers participate, see ~7% avg. bill reduction
  - 5% of Res customers non-participants, 4-5% bill increase

  Is this trade-off acceptable?
- Are trade-offs made for DER investments same as those made on supply investments? If different, why?
  - for substation upgrade, do all customers pay or just those driving the need?

Societal Cost Test as Applied in MN