

*Societal Non-Energy Benefits in
Energy Efficiency Cost-Effectiveness Testing*

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Energy Efficiency as a Resource

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Overview

- Which states account for what EE impacts in cost-effectiveness testing?
 - What the Database of Screening Practices (DSP) tells us
- Let's look more closely at societal non-energy benefits (NEBs)...
 - Which states currently account for Societal NEBs?
 - What are key challenges in accounting for societal NEBs?
 - Evolving state policies and growing interest in specific NEBs
- Methods for accounting for societal NEBs
 - Existing and forthcoming guidance/resources

Database for Screening Practices (DSP)

- DSP - Product developed by the [National Energy Screening Project](#)
- A repository of electric and natural gas utility ratepayer-funded energy efficiency program cost-effectiveness testing practices with information from all 50 states, Washington, D.C., and Puerto Rico
- State-by-state information on:
 - Primary and secondary cost-effectiveness tests in use, including those that have applied the NSPM
 - Key planning parameters (e.g., discount rate, study period)
 - Which utility and non-utility system impacts are accounted for
 - Underlying cost-effectiveness testing policies
- The DSP includes sources for every datapoint
- DSP is updated periodically

DSP Data Parameters – Key Impact Factors

Test and Application Info

- Primary Test
- Secondary Test(s)
- Primary Assessment Level
- Other Assessment Levels
- Discount Rate
- Analysis Period

Utility System Costs

- Measure Costs
- Other Financial or Technical Support Costs
- Program Administration Costs
- Evaluation, Measurement, and Verification (EM&V)
- Shareholder Incentive Costs

Utility System Benefits

- Avoided Marginal Energy Costs (Electric)
- Avoided Generating Capacity Costs (Electric)
- Avoided T&D Costs (Electric)
- Avoided T&D Line Losses (Electric)
- Natural Gas and Other Fuel Capacity Costs (Natural Gas)
- Avoided Natural Gas/Other Fuel Commodity + Variable O&M (Natural Gas)
- Avoided Pipeline + Distribution Capacity (Natural Gas)
- Avoided Pipeline + Distribution Costs (Natural Gas)
- Avoided Pipeline + Distribution Losses (Natural Gas)
- Avoided Ancillary Services
- Wholesale Price Suppression Effects
- Avoided Costs of RPS Compliance
- Avoided Environmental Compliance Costs
- Avoided Credit and Collection Costs
- Reduced Risk
- Increased Reliability
- Market Transformation
- Increased Resilience

Participant/Host Customer Impacts

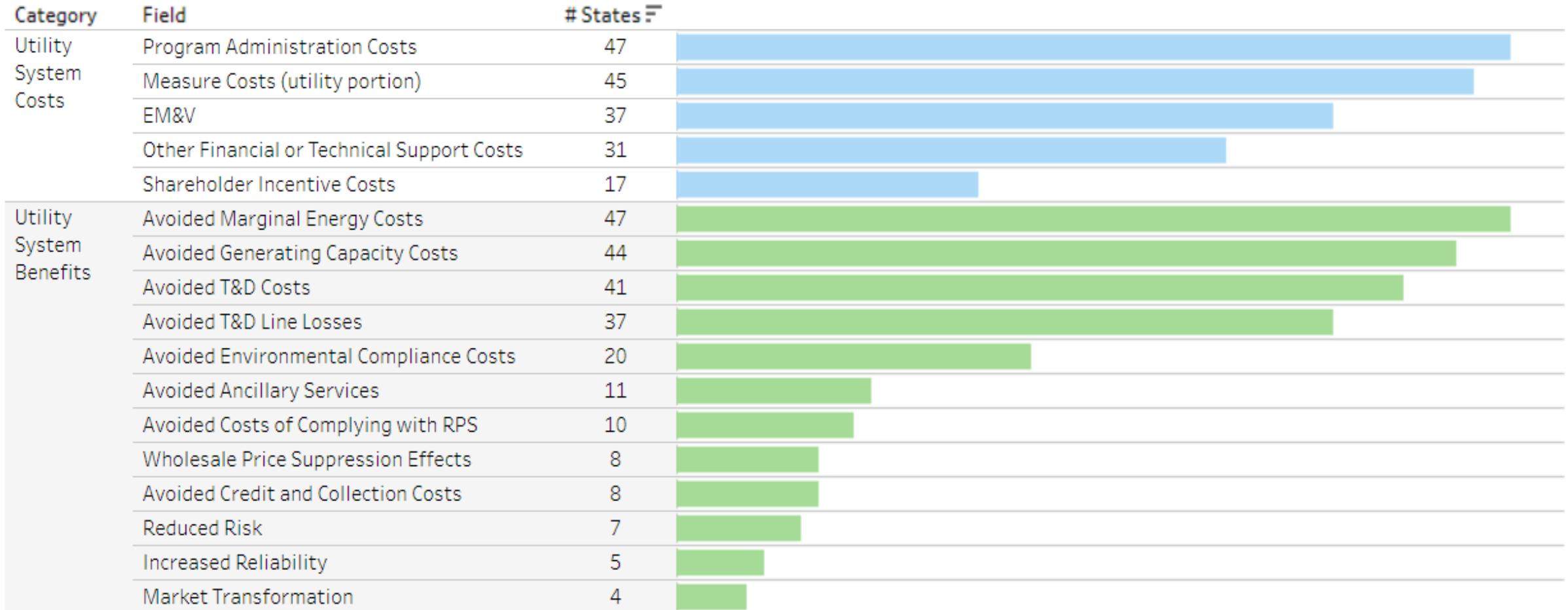
- Measure Costs
- Asset Value
- Economic Well-Being
- Comfort
- Health and Safety
- Satisfaction
- Productivity

Societal Impacts

- Low-Income Customers
- Other Fuel
- Water Resource
- Environmental
- Public Health
- Economic Development and Jobs
- Energy Security

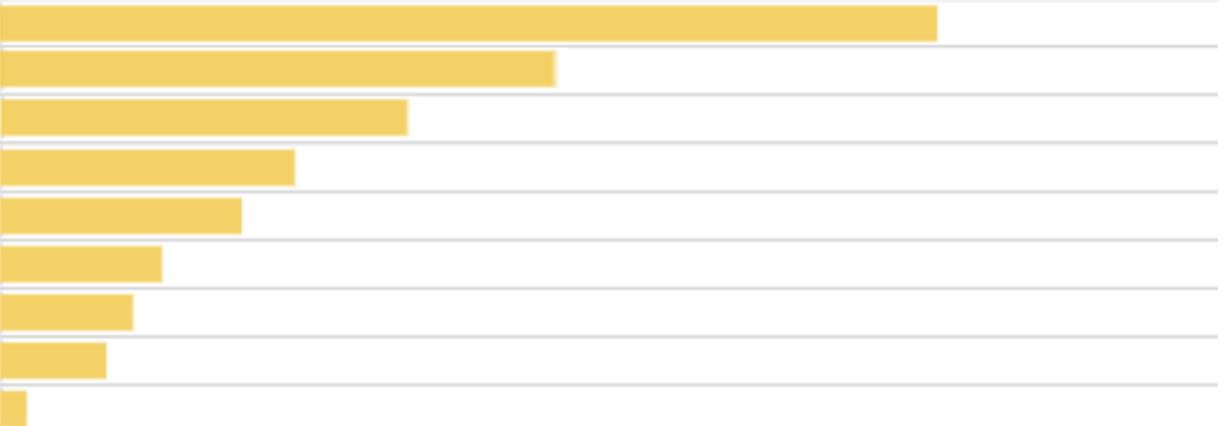
All impacts are defined in the DSP Definitions Tab and are in the NSPM.

How Many States Account for Electric Utility System Impacts?



How many jurisdictions account for Host Customer Impacts?

Category	Field	# States
Host Customer Impacts	Measure Costs (participant portion)	35
	Water Resource	20
	Other Fuel	17
	Productivity	11
	Health and Safety	9
	Asset Value	6
	Comfort	5
	Economic Well-Being	4
	Satisfaction	1



Societal Impacts (generally defined)

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

Current Landscape – Societal Impacts

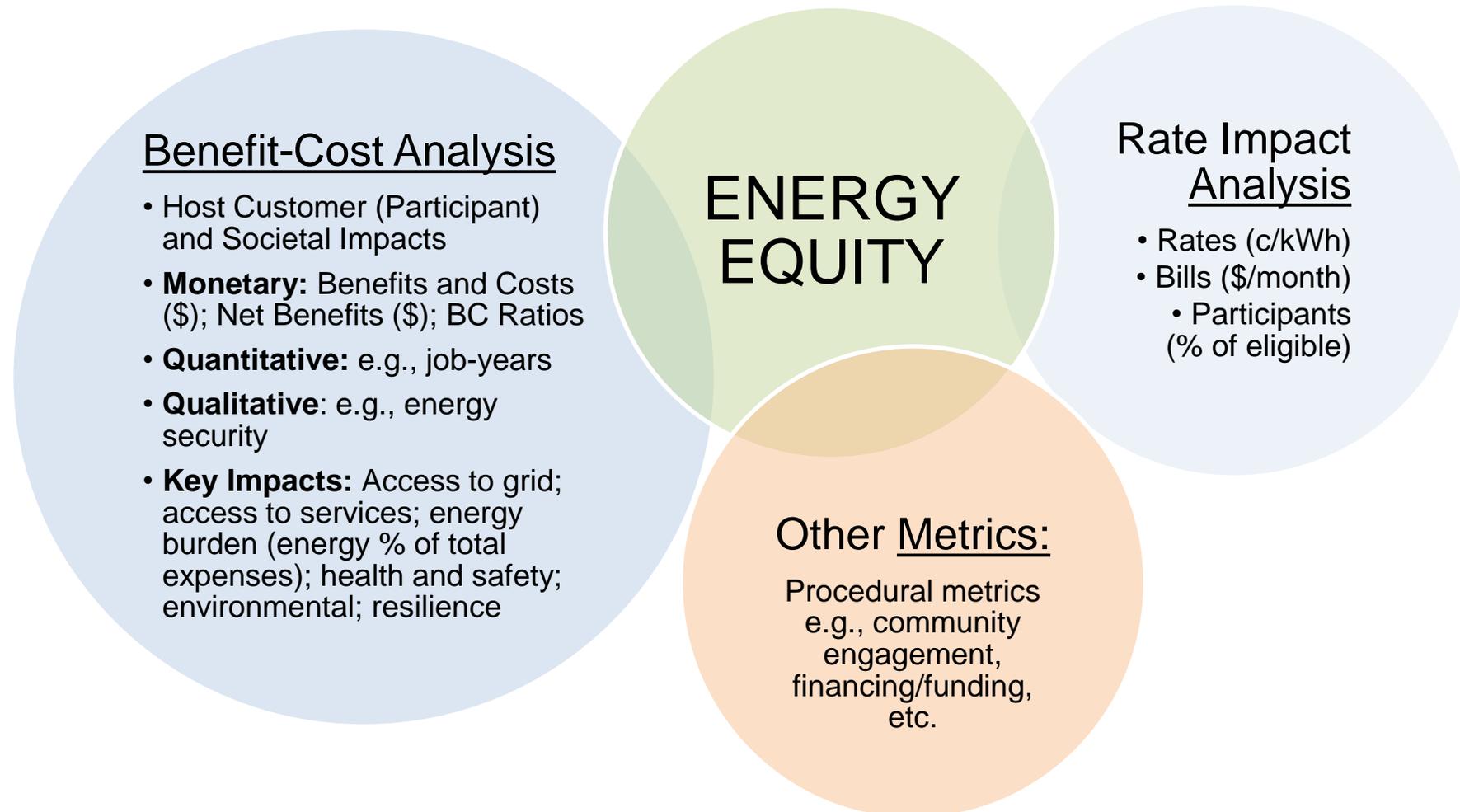
NEIs are often articulated in state policy goals but not accounted for in BCA (but this is starting to change). Key considerations:

- Economic development – part of BCA or separate quantitative consideration?
- Energy security – hard to quantify, qualitative assessment?
- Environmental (criteria air pollutants and GHG emissions) – differentiating between avoided compliance costs and societal benefits
- Low Income Customers/Vulnerable Communities – growing area of focus. Energy equity fits here but also within other impact factors in BCA (see next slide)
- Public Health – not currently accounted for, but this is changing: [IL societal health NEIs report](#)
- Resilience (societal) – not currently accounted for, hard to quantify, but increasing focus

Category	Field	# States	
Societal Impacts	Economic Development and Jobs	3	
	Energy Security	1	
	Environmental	14	
	Low-Income Customers	25	

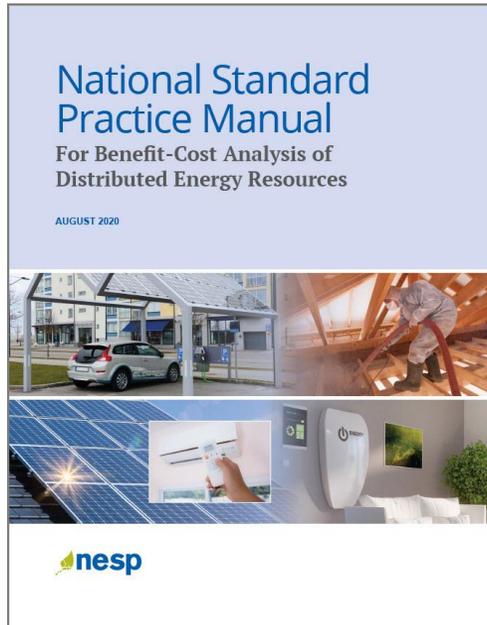
Accounting for Energy Equity in BCA (and otherwise)

Energy equity analysis addresses equity in all aspects of the energy system, including its benefits, burdens, costs, and participation. Functionally equivalent to *energy justice*.



Methods for Quantifying Impacts

NSPM for DERs (2020) Appendix C



Approach	Description
Monetary Approaches:	
Jurisdiction-specific studies	Rigorous jurisdiction-specific studies on DER impacts offer the potentially most accurate approach for estimating and monetizing relevant impacts.
Studies from other jurisdictions	If jurisdiction-specific studies are not available, studies from other jurisdictions or regions, or national studies, can be used for estimating and monetizing impacts.
Proxies	If monetized impacts are not available, well-informed and well-designed proxies can be used as a simple substitute (e.g., % adders).
Non-Monetary Approaches:	
Alternative thresholds	Pre-determined thresholds, e.g., BCRs that are different from one (1.0), can be used as a simple way to account for relevant impacts that are not otherwise included.
Accounting for non-monetized impacts	Relevant qualitative information can be used to estimate impacts that cannot be monetized. Or for some impacts, quantified (but not monetized) data can be used (e.g., economic development/FTE jobs created).

Methods, Tools & Resources for Quantifying DER Impacts

- *Companion guidance to the NSPM - coming soon!*
- Guidance on calculating:
 - Full range of utility system impacts (electric, gas, and other fuels)
 - Non-utility system impacts (host customer and societal)
 - Risk and uncertainty
 - Reliability and resilience
 - Developing DER Load Profiles, Savings Load Shapes
 - Offers pros and cons of different methodological approaches;
 - Addresses how impacts are relevant for different DER types; and
 - Provides public resources to develop BCA inputs

For more information:

NSPM for DERs and supporting resources:

<http://www.nationalenergyscreeningproject.org/>

Stay informed with the [NESP Quarterly](#) Newsletter

Questions?

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