National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources

(NSPM for DERs)

Overview of Key Concepts and Relationship to Distribution System Planning

February 17, 2022

Today's Speakers

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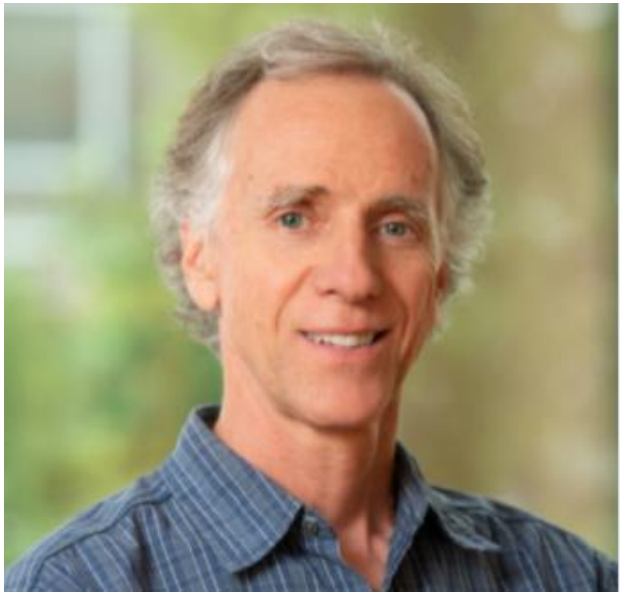


Tim Woolf
Vice President – Synapse Energy Economics
Lead Author of the NSPM for DERs

Today's Presentation

Background on Cost-effectiveness Testing

- Purpose of CE testing
- Traditional CE tests
- Why the NSPM for DERs?

NSPM Framework

- NSPM Principles
- Developing/modifying your primary CE test
- Benefit-Cost Analysis vs Rate Impact Analyses
- Accounting for Energy Equity

Example Process for NSPM Application

- Workshop series and example topics

What Do Benefit-Cost Analyses Entail?

Benefit-cost analysis is a systematic approach for assessing the cost-effectiveness of investments by comparing the benefits and costs of alternative options.

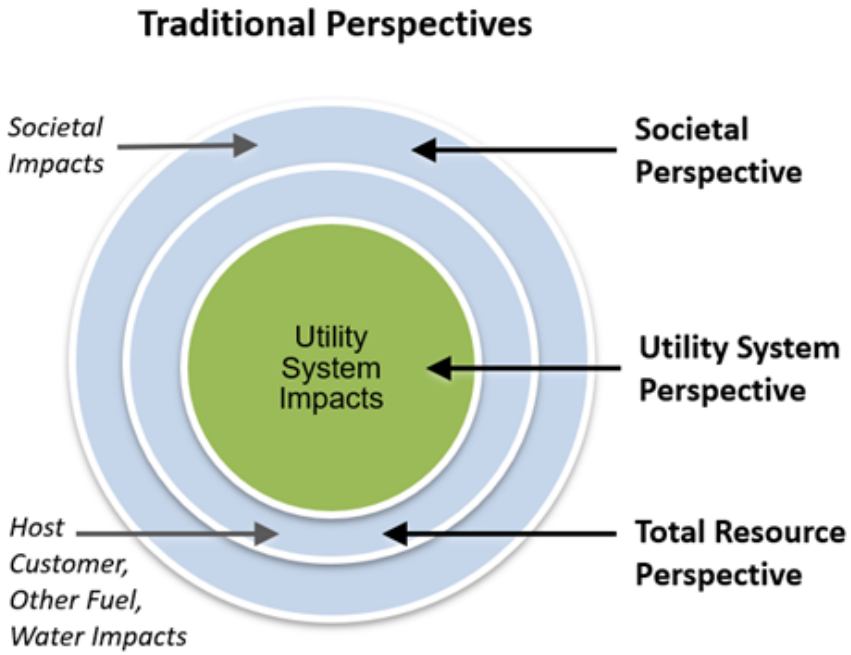
A BCA entails identifying all the relevant benefits and costs of a project and determining whether the benefits exceed the costs over the lifetime of the expected program or project.

In general, BCAs entail comparing two scenarios: one *without* the proposed DERs (the Reference Case) and one *with* the proposed DERs (the DER Case).

The difference between the two cases indicates the marginal impacts of the DERs included in the DER Case.

BCAs can account for different perspectives, using different tests.

Traditional Cost-Effectiveness Test/Perspectives



- Three perspectives define the scope of impacts to include in the most common traditional cost-effectiveness tests.

Test	Perspective	Key Question Answered
Utility Cost	The utility system	Will utility system costs be reduced?
Total Resource Cost	The utility system plus participating customers	Will utility system costs plus program participants' costs be reduced?
Societal Cost	Society as a whole	Will total costs to society be reduced?
Participant Cost	Customers who participate in a program	Will program participants' costs be reduced?

What Do Cost-effectiveness Tests Tell Us?

Primary Test Answers Question:

Which resources have benefits that exceed costs and therefore may merit utility acquisition or support on behalf of their customers?

Secondary Tests Tell Us:

How will DERs affect utility system costs (if the Utility Cost test is used as a secondary test)

How much will it cost to achieve certain policy goals

How to treat DERs that are marginally cost-effective

Why an NSPM for DERs?

- Traditional cost-effectiveness tests often do not properly account for pertinent jurisdictional/state policies.
- Traditional tests are often modified by states in an ad-hoc manner, without clear principles or guidelines.
- DERs are often evaluated using inconsistent BCA tests and assumptions
- Some BCA tests in use do not account for all the appropriate or relevant costs and benefits
- There is a lack of transparency on why tests are chosen and how they are applied.

NSPM – Developed by 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).

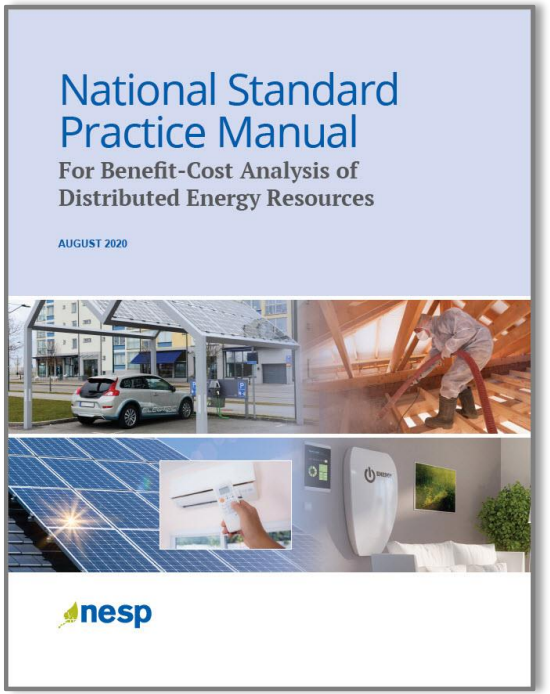
Products include:

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

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

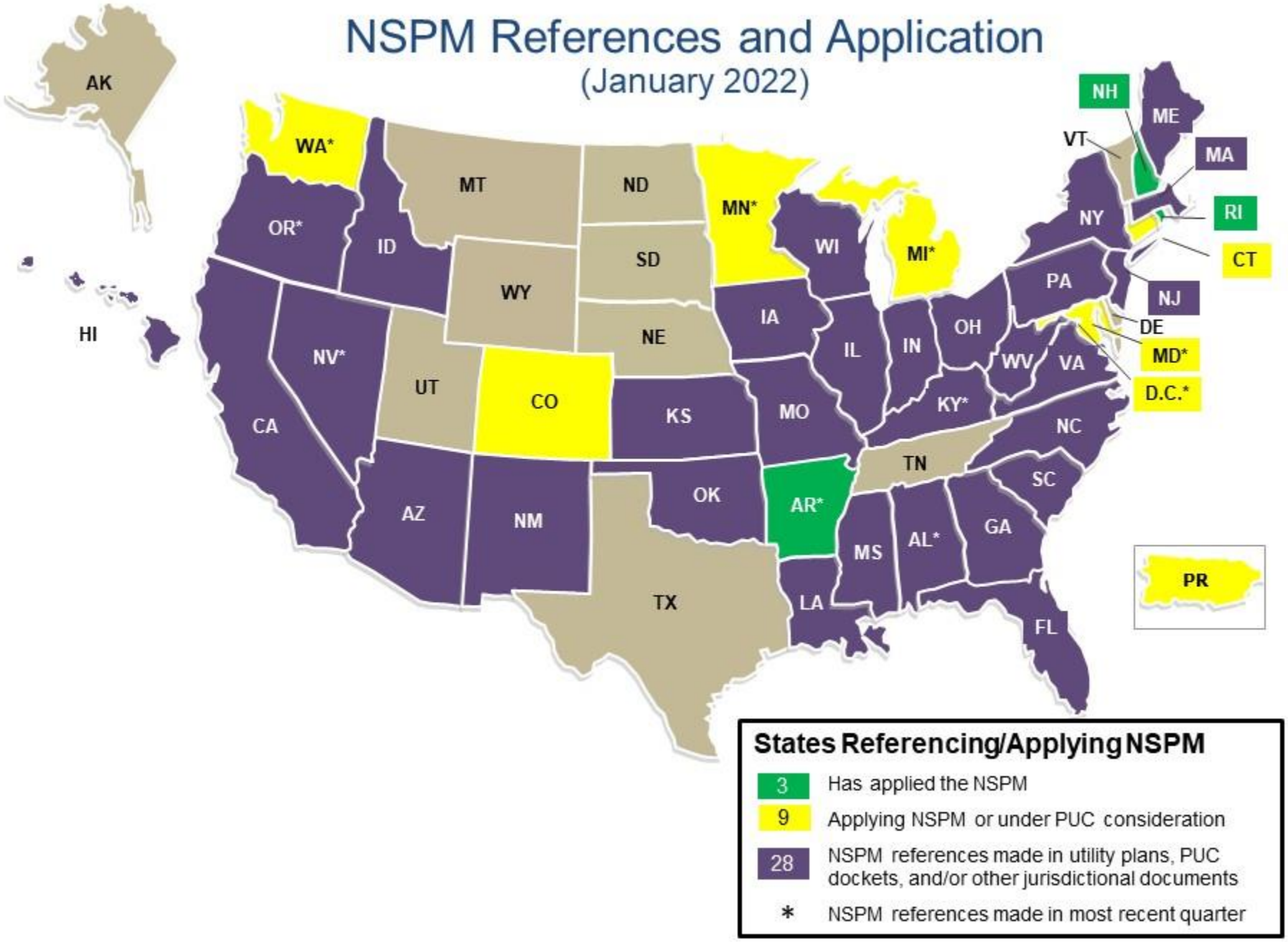
NESP work is funded by E4TheFuture and in part by US DOE.

https://nationalenergyscreeningproject.org/



NSPM References and Application

(January 2022)



States Referencing/Applying NSPM

3	Has applied the NSPM
9	Applying NSPM or under PUC consideration
28	NSPM references made in utility plans, PUC dockets, and/or other jurisdictional documents
*	NSPM references made in most recent quarter

State NSPM Case Studies
(using the NSPM for EE)

State Active Dockets - Applying the NSPM for DERs

See the NESP Quarterly Newsletter for details on state application and referencing of NSPM.

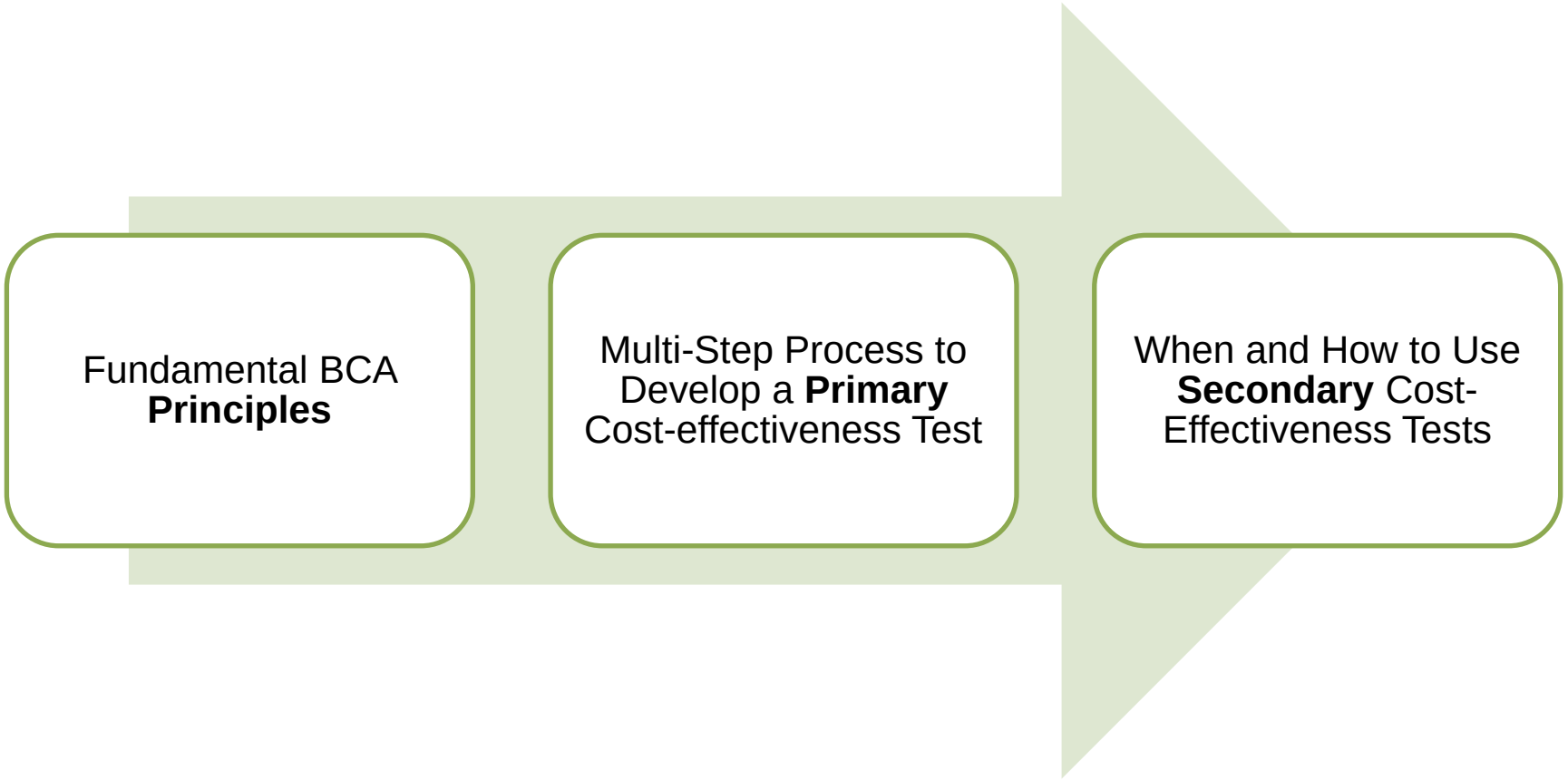
Maryland
The Maryland Public Service Commission accepted a consensus **Statewide EV BCA Methodology**, recommending a Maryland EV Jurisdiction Specific Test (MD-EV JST) developed using the NSPM. Meanwhile, stakeholders in the EmPOWER Maryland *Future Program Working Group* (FPWG) are developing an updated cost-effectiveness test for energy efficiency programs using the NSPM, and the Commission opened **Case No. 9674** to explore a "Unified BCA" methodology across all DERs.

Washington, D.C.
The District of Columbia completed its BCA Framework working group process in **Docket GD-2019-04** to propose a new cost-effectiveness test using the NSPM as part of its efforts to implement the District's 2019 Clean Energy Act and the Commission's **Power Path DC** Order. The commission staff submitted **a final report** to the commission for approval, reflecting a majority consensus of the working group.

Washington
The Utilities & Transportation Commission (UTC) opened **Docket UE-210804** in November 2021 to develop a new cost-effectiveness test that aligns with the state's **Clean Energy Transformation Act** (CETA) utilizing the NSPM principles and framework. Stakeholders filed comments in response to the *Notice of Opportunity to File Written Comments* in the docket.

Read More

NSPM BCA Framework



NSPM BCA Principles

1. Recognize that DERs can provide energy/power system needs and should be compared with other energy resources and treated consistently for BCA.
2. Align primary test with jurisdiction's 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 DER investments.
6. Avoid double-counting through clearly defined impacts.
7. Ensure transparency in presenting the benefit-cost analysis and results.
8. Conduct BCA separate from Rate Impact Analyses because they answer different questions.

Principle #1: Treat DERs as a Resource

Accounting for full range of **Electric Utility System Impacts** is foundational to any BCA

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

And also (if relevant) for Gas Utility System and Other Fuel Impacts

Type	Gas Utility System
Energy/Supply	Fuel and Variable O&M
	Capacity (e.g., local storage)
	Environmental compliance
	Market price effects
Transportation	Pipeline capacity
	Pipeline losses
Delivery	Local delivery capacity
	Local delivery line losses
	Local delivery O&M
General	Financial incentives
	Program admin costs
	Performance incentives
	Credit and collection costs
	Risk, reliability, resilience

Type	Other Fuels*
Other Fuels	Fuel and O&M
	Delivery Costs
	Environmental Compliance
	Market Price Effects

*Other fuels include oil, propane, wood, and gasoline

Principle #1: Why Consistency in BCA across DERs?

- Consistent BCA framework reduces risk of either over or under-investing in a resource (or combination thereof)
- Siloed approach to valuing different DERs can be complex and overwhelming for commissions, utilities and stakeholders
- Allows for comparison and prioritizing of DER investment options and strategies to answer questions such as:
  - *How cost-effective is one DER type relative to another type?*
  - *How to evaluate a program that includes multiple DER types, e.g., NWAs, NPAs, grid-integrated efficient buildings.*
  - *How to optimize across multiple types of DERs.*
- Opportunity/challenge: ‘Connecting the dots’ across different regulatory contexts (next slide)

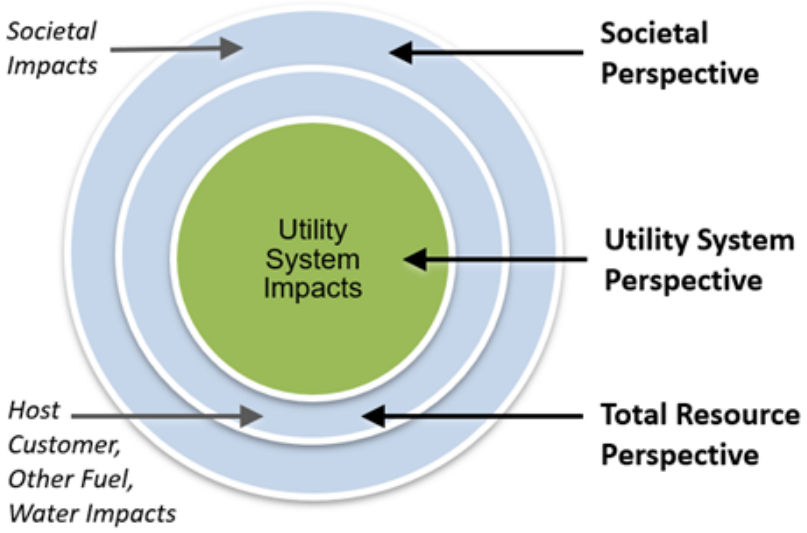
BCA in Different Regulatory Settings

Context	Application	Goal of BCA	Role of Costs & Benefits
Programs	EE, DR, DG, Storage, EVs	determine whether to implement the program	compare program benefits to costs
Procurement	DERs, NWAs, PPAs,	determine the ceiling price	ceiling price should equal the benefits of the procurement
Pricing	Rate design	estimate long-run marginal costs	long-run marginal costs should equal the benefits of modifying consumption
	DER compensation	determine the value of DER	value of DER is the sum of benefits
Planning	Optimize DERs	identify optimal DER portfolio	compare portfolio benefits to costs
	DP, IDP, IRP, IGP	identify preferred resource scenario	compare scenario benefits to costs
	GHG plans	achieve GHG goals at low cost	compare GHG plan benefits to costs
	State Energy Plans	identify resources to meet state goals	compare state plan benefits to costs
Infrastructure Investments	Grid Mod, AMI, EV infrastructure, etc.	determine whether to make the investment	compare investment benefits to investment costs
Prudence Reviews	Retrospective review	determine whether past utility decision was appropriate	compare benefits and costs using test in place at the time the decision was made
	Prospective review	determine whether proposed utility decision is appropriate	compare benefits and costs using test currently in place

NSPM Principle #1: DERs should be compared and treated consistently with other utility resources. This principle applies to all regulatory contexts/mechanisms

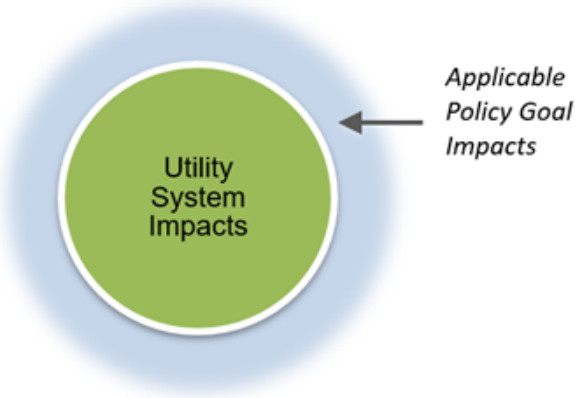
Principle #2 – Aligning BCA with your Policies
(and the 'Regulatory' Perspective')

Traditional Perspectives



- Three perspectives define the scope of impacts to include in the most common traditional cost-effectiveness tests.

NSPM for DERs
Regulatory Perspective



- Perspective of public utility commissions, legislators, muni/coop boards, public power authorities, and other relevant decision-makers.
- Accounts for utility system plus impacts relevant to a jurisdiction's applicable policy goals (which may or may not include host customer impacts).
- Can align with one of the traditional test perspectives, but not necessarily.

Articulate Policy Goals and Identify Relevant Impacts

Example Goals: as articulated in statute, regulations, decisions, etc.

Common Overarching Goals: Provide safe, reliable, reasonably priced electricity and gas services; support fair and equitable economic returns for utilities; promote customer equity; protect/reduce energy burden for low-income and vulnerable customers.

Resource Goals: Reduce electricity and gas system costs; develop least-cost energy resources; improve system reliability and resiliency; reduce system risk; promote resource diversity; increase energy independence; reduce price volatility; provide demand flexibility.

Other Applicable Goals: Ensure stable energy markets; reduce environmental impact of energy consumption; promote jobs and local economic development; improve health associated with reduced air emissions and better indoor air quality.

What are Oregon's applicable energy policy goals?

Host Customer Impacts

(Inclusion depends on policy goals)

Host Customer Impact	Description
Host portion of DER costs	Costs incurred to install and operate DERs
Interconnection fees	Costs paid by host customer to interconnect DERs to the 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 can 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
Non-energy Impacts (NEIs)	Benefits and costs of DERs that are separate from energy-related impacts

Breakout of Host Customer Non-Energy Impacts (NEIs)

Host Customer NEI	Description
Transaction costs	Costs incurred to adopt DERs, beyond those related to installing or operating the DER itself (e.g., application fees, customer time spent researching DERs, paperwork, etc.)
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., 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, reduced medical costs, improved indoor air quality, reduced deaths)
Empowerment & control	Satisfaction of being able to control one's energy consumption and energy bill
Satisfaction & pride	Satisfaction of helping to reduce environmental impacts (e.g., key reason why residential customers install rooftop PV)
Power/ Quality	Refers to the ability of electrical equipment to consume the energy being supplied to it e.g., improved electrical harmonics, power factor, voltage instability and efficiency of equipment.
DER Integration	The ability to add current and future DERs to the existing electric energy grid.
Reduced Utility Bills	Only relevant if using a *Participant Cost Test*

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/Vulnerable Populations/Equity: Society	Poverty alleviation, environmental justice, reduced home foreclosures, etc.
	Energy Security	Energy imports, energy independence, cybersecurity

Principle #3: Ensure Symmetry of Benefits & Costs

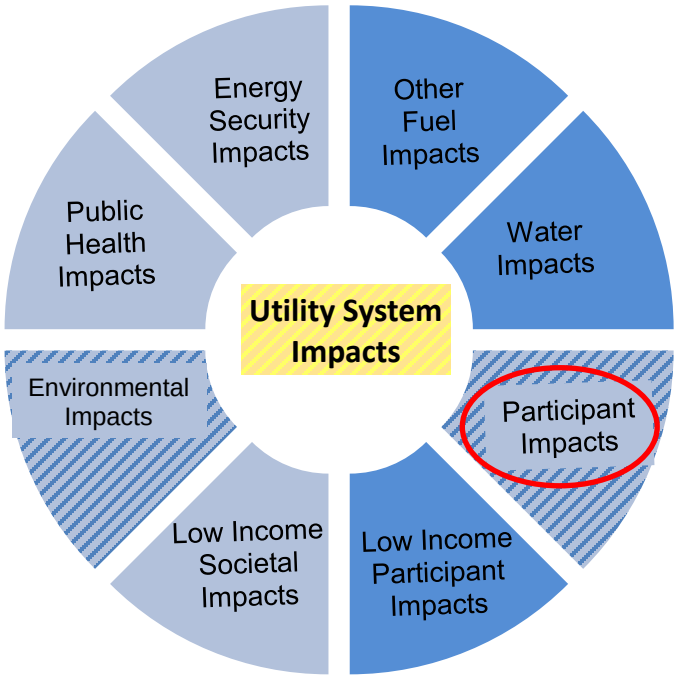
Illustrative Example: Treatment of Host Customer Costs and Benefits

Costs and Benefits	Asymmetry	Symmetry	
	A. Host Customer Costs **Included,** Benefits **Excluded**	B. Host Customer Costs and Benefits **Both Included**	C. Host Customer Costs and Benefits **Both Excluded**
DER Costs			
Utility System Costs:			
- Rebate/Incentive	$1,875	$1,875	$1,875
- Administrative Costs	$1,500	$1,500	$1,500
Host Customer Costs:	$5,625	$5,625	not included
Total Costs Accounted for:	$9,000	$9,000	$3,375
DER Benefits			
Utility System Avoided Costs	$6,000	$6,000	$6,000
Host Customer Non-Energy Benefits	not included	$4,000	not included
Total Benefits Accounted for:	$6,000	$10,000	$6,000
Net Benefit/Cost	($3,000)	$1,000	$2,625
Benefit-Cost Ratio (BCR):	0.67	1.11	1.78
Treatment of Host Customer Impacts	X Asymmetrical	✓	✓ Symmetrical

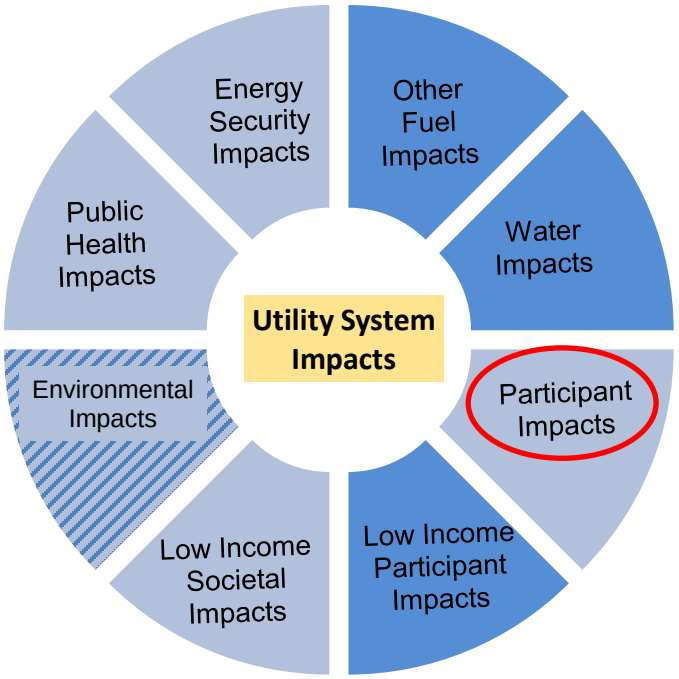
New Hampshire's Granite State Test*

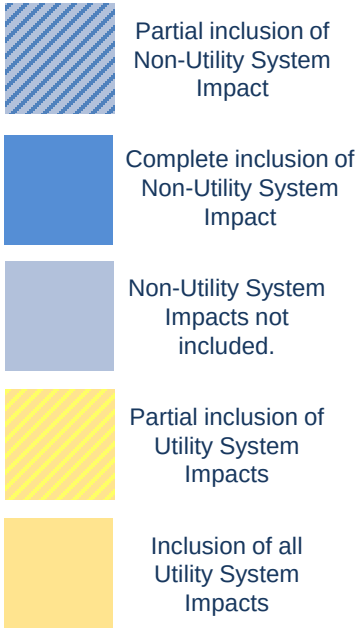
Stakeholders chose to exclude both participant costs and benefits

Before NSPM Application
TRC Test



After NSPM Application
Granite State Test





*NH Granite State Test developed using the NSPM BCA Framework – approved by NH PUC in 2020 but then PUC rejected 3-year EE settlement plan (now being contested)

Principle #4: 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.

*Forthcoming NSPM Companion Guidance: *Methods, Tools & Resources - A Handbook for Quantifying DER Impacts for BCA (March 2022)*

Principle #5: Establish Comprehensive, Transparent Documentation

- Development of primary test – transparent process involving all interested stakeholders
- Stakeholder input can be achieved through a variety of means:
  - Rulemaking process
  - Generic jurisdiction-wide docket
  - Working groups or technical sessions – *common practice for Oregon*
- Address objectives based on current jurisdiction policies
  - Flexibility needed to incorporate evolution of policies over time
- Review of policy goals may require consultation with other government agencies (DEQ, ODOT, across OPUC depts, etc.)

NSPM 5-Step Process
Defining a Primary Cost-Effectiveness Test

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, other fuel and water impacts, and/or societal impacts.

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; and
- Benefits and costs are treated consistently across DER types

STEP 5 **Establish Comprehensive, Transparent Documentation**

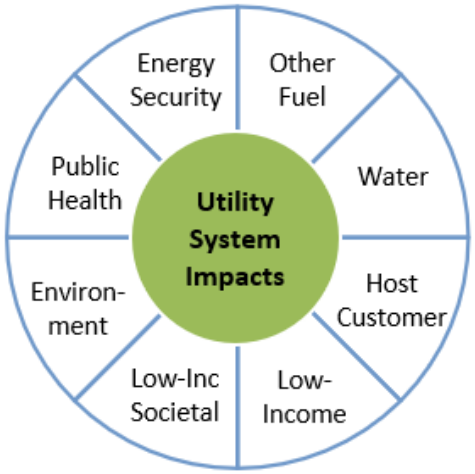
Establish comprehensive, transparent documentation and reporting, whereby:

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

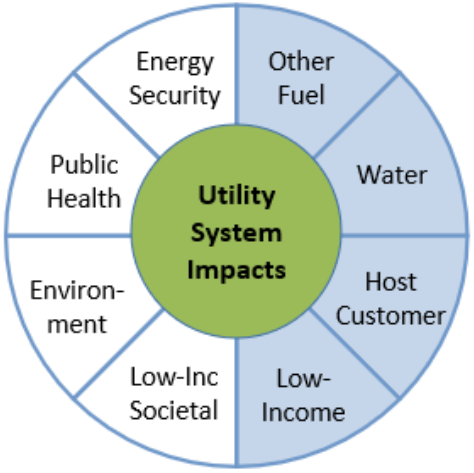
Primary Test = Jurisdiction Specific Test (JST)

Hypothetical JSTs as compared to traditional tests

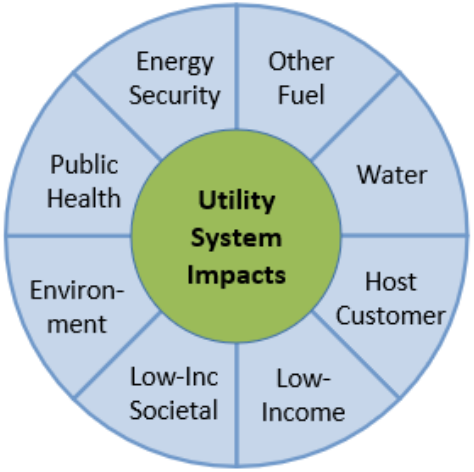
JST 1 = UCT/PACT



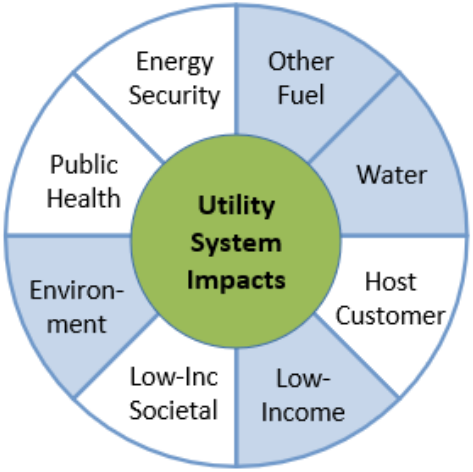
JST 2 = TRC Test



JST 3 = SCT



JST 4 ≠ traditional CE test *



UCT = Utility Cost Test (or PACT = Program Admin Cost Test)
TRC = Total Resource Cost Test
SCT = Societal Cost Test

All utility system impacts included

Non-utility system impacts included

Non-utility system impacts *not* included

*JST 4 includes a different set of non-utility system impacts based on *its applicable policies.*

JSTs may or may not align with traditional tests.

Jurisdiction Specific Test (JST)
Compared with Traditional Tests

Test	Perspective	Key Question Answered	Categories of Benefits and Costs Included
Jurisdiction-Specific Test	Regulators or decision-makers	Will the cost of meeting utility system needs, *while achieving applicable policy goals,* be reduced?	Includes the utility system impacts, and those impacts associated with achieving applicable policy goals
Utility Cost Test*	The utility system	Will utility system costs be reduced?	Includes the utility system impacts
Total Resource Cost Test	The utility system plus host customers	Will utility system costs and host customers' costs collectively be reduced?	Includes the utility system impacts, and host customer impacts
Societal Cost	Society as a whole	Will total costs to society be reduced?	Includes the utility system impacts, host customer impacts, and societal impacts such as environmental and economic development impacts

*Also referred to as Program Administrator Cost Test (PACT)

Conduct BCA Separately from Rate Impact Analysis (Principle #8)

The two analyses answer different questions

	Benefit-Cost Analysis	Rate Impact Analysis
Purpose	To identify which DERs utilities should invest in or otherwise support on behalf of their customers	To identify how DERs will affect rates, in order to assess equity concerns
Questions Answered	What are the future costs and benefits of DERs?	Will customer rates increase or decrease, and by how much?
Results Presented	• Cumulative costs (PV$) • Cumulative benefits (PV$) • Cumulative net benefits (PV$) • Benefit-cost ratios	• Rate impacts (c/kWh, %) • Bill impacts ($/month, %) • Participation rates (#, %)

The Rate Impact Measure (RIM) Test is sometimes used for BCA purposes. However, it combines the two analyses and therefore makes it difficult to answer either question

Components of BCA and Rate Impact Analyses

	Include in Benefit-Cost Analysis	Include in Rate Impact Analysis
Utility system impacts	✓	✓
Host customer impacts	depends on policy goals	do not affect rates
Social impacts	depends on policy goals	do not affect rates
Lost revenues	do not affect costs	✓
Increased revenues	do not affect costs	✓
Net metering bill credits	do not affect costs	✓

See NSPM for DERs Appendix A on Rate Impact Analyses

Rate, Bill and Participant Impacts

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

- **Rate impacts**, provide an indication of the extent to which rates for all customers might increase.
- **Bill impacts**, provide an indication of the extent to which customer bills might be reduced for those customers that install DERs.
- **Participation impacts**, provide an indication of the portion of customers that will experience bill reductions or bill increases.
    - Participation impacts are also key to understanding the extent to which customers are adopting DERs based on DER policies.

Consider Both BCA and Rate Impact Analysis

Illustrative example: Energy Efficiency Portfolio

Sometimes it is necessary to make tradeoffs between reduced costs and higher rates.

Benefit-Cost Analysis	Net Benefits (mil PV$)	85
	Benefit-Cost Ratio	2.1
Rate Impact Analysis	Rate Impacts (%)	1.3
	Bill Impacts Participants (%)	-3.4
	Participation Rate (%) Participation Low-Income (%)	68 56
Additional Considerations	GHG Goal Achieved (%)	28

← significant net benefits...

← but rates increase...

← but many customers participate and see lower bills.

← and there is a big impact on key policy goal

Consider Both BCA and Rate Impact Analysis

Illustrative Example: Demand Response Portfolio

Sometimes there are no tradeoffs.

Benefit-Cost Analysis	Net Benefits (mil PV$)	15
	Benefit-Cost Ratio	1.4
Rate Impact Analysis	Rate Impacts (%)	-0.1
	Bill Impacts Participants (%)	-1.2
	Participation Rate (%) Participation Low-Income (%)	24 13
Additional Considerations	GHG Goal Achieved (%)	3

some net benefits...

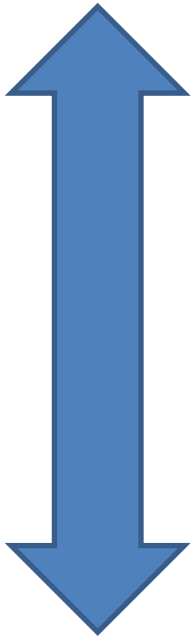
and rates decrease...

but fewer customers participate...

and not much impact on key policy goal

The Planning Continuum

- Bulk Power System Planning
  - integrated resource planning
  - ISO/RTO planning
  - transmission planning
- Distribution Planning
  - distribution reliability
  - grid modernization
  - non-wires alternatives
  - BCA and LCBF
- DER Assessment and Planning
  - BCA of DERs



Consistent BCA principles and concepts should be applied across all of these.

See NASEO/NARUC Task Force on Comprehensive Electricity Planning for current efforts to better integrate all these: https://www.naruc.org/taskforce/

Choice of BCA Test for Distribution Planning

- The same principles and concepts used to develop BCA tests for DERs should be used to develop BCA tests for distribution planning
- The same primary test (i.e., Jurisdiction Specific Test) used for DERs should be used for distribution planning
- Otherwise, you can end up with uneconomic outcomes
- For example:
  - If a Total Resource Cost test is used for DERs
  - And a Societal Cost test for is used for distribution planning
  - Then the DER planning results will not reveal some of the DERs that might be useful in reducing societal impacts in the distribution planning process

BCA Tests for DERs and Distribution Planning

Impact	Perspective	DER BCA (from the NSPM for DERs)	Distribution Planning BCA (Example Utility Distribution Plan)
Costs	Utility System	· customer incentives · program administration · utility incentives · equipment costs	· capital costs · O&M costs · ancillary service costs · equipment costs
	Affected Customers	· measure costs · non-energy costs · other fuel costs	· none
	Society	· environmental · economic development · other	· environmental · economic development · other
Benefits	Utility System	· energy · capacity · ancillary services · T&D, T&D losses · credit & collection · reliability & resilience	· energy · capacity · ancillary services · T&D losses · O&M · avoided costs of restoring outages
	Affected Customers	· non-energy benefits · other fuel savings · reliability &resilience	· avoided customer outage costs
	Society	· environmental · economic development · reliability & resilience · other	· environmental · economic development · avoided societal outage costs · other

BCA versus Least-Cost Best-Fit

- The main difference is that LCBF does not require estimates of benefits – it is presumed that the investment is needed
  - For years, this approach has been sufficient distribution planning because it was applied to investments that were needed to maintain reliability.
- A BCA provides much more information than LCBF
  - BCA provides certainty as to whether benefits exceed costs.
- LCBF should be used only when necessary
- Deciding when to use LCBF
  - Are there a lot of benefits that are not monetizable? Maybe use LCBF.
  - Is the investment needed for reliability or resilience? Maybe use LCBF.
  - Is the investment needed to meet regulatory policy goals? BCA is preferable.
  - Is the investment considered a core or platform? Maybe use LCBF.
- Non-monetized benefits should be accounted for as much as possible
  - Regardless of whether BCA or LCBF is used

Equity in the Context of Distribution Planning

Questions to assess equity issues:

1. Is this the lowest cost plan for the desired outcomes?
    - BCA and LCBF help answer this question.
2. What are the long-term bill impacts of the plan?
    - Including impacts on vulnerable customers.
3. Does the plan provide equitable reliability and resilience benefits?
    - Especially for vulnerable customers and communities.
    - Have these customers received equitable services in the past?
    - Does the proposed plan improve or worsen reliability or resilience for them?
4. Does the plan provide equitable access to DERs & grid services
    - Especially for vulnerable customers and communities

Accounting for “Energy Equity/Justice” in BCAs

Energy Equity Metrics:

- Overlap with rate and bill analysis;
- Overlap with benefit-cost analysis; and
- Are addressed by many other metrics outside of above analyses

<u>Key Questions/Considerations:</u>

- *How should equity considerations be used to make decisions about utility DER and other resource investments?*
- *How can double counting be avoided?*
- *How can NSPM provide additional guidance in this area?*
- *How to coordinate with and build off of national efforts to address energy equity?*

Framework for Assessing Energy Equity

Benefit-Cost Analysis

(Focuses on *Average System* Impacts…mostly)

Utility System and Other Fuel Impacts

Host Customer Impacts*

Societal Impacts

Discount rates

How do BCA and Distributional Equity intersect?

Procedural Equity

&

Structural Equity

(Important areas but not directly relevant to BCAs)

ENERGY EQUITY

Distributional Equity

(Focuses on *target population* impacts)

Rate impacts
Bill impacts
Energy burden
Participation rates
+Distributional analysis of societal impacts on target populations, such as:

- energy resilience
- energy reliability
- public health
- environmental
- jobs
- community wealth
- other

*Can address equity in terms of host customer benefits for programs targeted to specific sectors, communities or populations (e.g., low income)

Example Process for NSPM Application

Workshop Series and Key Topics

Can develop BCA test at end of process or a straw proposal during process

W1: What are State's Applicable Policy Goals?

- Circulate initial inventory of relevant statutes, PUC decisions, plans, etc.
- Invite stakeholder input and review/discuss prior to and during workshop
- Review how to address any inconsistent policies across different DERs
- Share example templates used by other jurisdictions

W2: Review of Relevant Impacts

- What impacts should be accounted for based on the inventory of policies and discussion in W1?
- What impacts are relevant to some DERs but not others?
- Identify gaps relative to state's current CE testing practices for different DERs

W3: Methodological Approaches for Quantifying Impacts

- Utility System
- Host Customer Impacts
- Societal Impacts
- [possibly 2-3 meetings/workshops]

W4: Examples of BCA Application to DERs

- In distribution system planning / non-wires solution procurement
- Different DER program types, multi-DER use cases

W5: Other Key Topics

- Discount rates, treatment of offsetting impacts (e.g., tax incentives)
- Distributional equity analysis

Discussion / Q&A

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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