



**Developing a Commission jurisdictional specific
cost-effectiveness test for distributed energy
resources incorporating CETA**

Workshop #3

Docket UE-210804

Tuesday, September 20, 2022, at 1:00 p.m.

Virtual Workshop Reminders



- This a public workshop. The presentation will be recorded and posted.
- **MUTE your microphone when you're not speaking**
- Use chat to ask questions during the presentation
- Use chat or raise hand to speak during Q & A



NSPM BCA Process Workshop #3

Washington UTC Workshops

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Courtney Lane, Synapse Energy Economics

Julie Michals, E4TheFuture

September 20, 2022

Today's Meeting Agenda

Introduction (10 min)

- Objectives for today's workshops
- NSPM Framework Steps

Utility System Impacts (45 min)

- Guidance from NSPM
- Review of current utility BCA practice

Non-Utility System Impacts (45 min)

- Guidance from NSPM
- Policy inventory summary
- Confirm non-utility system impacts to include in primary test

Q&A and Next Steps (20 min)

- Straw proposal
- Review next workshop topics

Today's Speakers/Moderator



Courtney Lane
Senior Associate
Synapse Energy Economics



Julie Michals
Director of Valuation
E4TheFuture
NESP Project Coordinator

NSPM 5-step Process

Defining a Primary Cost-Effectiveness 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, other fuel and water impacts, and/or societal impacts.
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STEP 4**Ensure that Benefits and Costs are Properly Addressed**

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

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

Establish comprehensive, transparent documentation and reporting, whereby:

- The process used to determine the primary test is fully documented; and
 - Reporting requirements and/or use of templates for presenting assumptions and results are developed.
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Step 1 Review: Mapping Policies to Impacts

- All categories of impacts are covered under two umbrella policies:
 - Clean Energy Transformations Act (CETA)
 - Climate Commitment Act (CCA)

Impact type	Impact category	Electric policy, statute, or decision	Gas policy, statute, or decision
Utility System	Electric Utility System (or Gas Utility) Impacts	Clean Energy Transformation Act, Climate Commitment Act- all DERs	Climate Commitment Act - all DERs
Other Fuels	Other Fuels (gas, oil, propane)	CETA, CCA - all DERs	CCA - all DERs
Societal	Resilience	CETA, CCA - all DERs	CCA - all DERs
	Energy Security	CETA, CCA - all DERs	CCA - all DERs
	GHG Emissions	CETA, CCA - all DERs	CCA - all DERs
	Other Environmental	CETA, CCA - all DERs	CCA - all DERs
	Public Health	CETA, CCA - all DERs	CCA - all DERs
	Economic Development/ Jobs	CETA, CCA - all DERs	CCA - all DERs
	Energy Burden/Equity	CETA, CCA - all DERs	CCA - all DERs
Host Customer	Host Customer (non-low Income)	CETA, CCA - all DERs	CCA - all DERs
	Host Customer Low-Income	CETA, CCA - all DERs	CCA - all DERs

NSPM Step 2: Include all **Utility System Impacts**

Importance of Utility System Impacts



- Utility system impacts are foundational to cost-effectiveness
 - NSPM Principle 1: All utility system impacts should be included in the definition of the primary test.
 - Indicates to what extent total utility system costs are reduced or increased by a DER(s).
- DERs should be treated as a utility system resource and account for all relevant, material impacts
 - Material impacts are those that are expected to be of sufficient magnitude to affect the result of a BCA.
 - Impacts that are not material should be documented but not necessarily quantified for inclusion in the BCA
- However, not all impacts are applicable and/or material to each DER and/or each use case.
- Important to remember we are not discussing how to value impacts today.
- In some cases, we will need to determine whether certain costs are utility system, participant, or societal impacts.

Electric Utility Impacts – Current Practice

(based on Puget Sound)

Impact Category	Specific Impact	EE	DR	DG	DS	EVSE
Electric Utility System Impacts	Generation: Energy Generation	Yes	No	Yes	No	Yes
	Generation: Capacity	Yes	Yes	Yes	Yes	Yes
	Generation: Environmental Compliance	Yes	No	Yes	No	Yes
	Generation: RPS/CES Compliance	No	No	No	No	Yes
	Generation: Market Price Effects	No	No	Yes	Yes	Yes
	Generation: Ancillary Services	No	No	N/A	N/A	Yes
	Transmission: Capacity	Yes	Yes	Yes	Yes	Yes
	Transmission: System Losses	Yes	No	Yes	Yes	Yes
	Distribution: Capacity	Yes	Yes	Yes	Yes	Yes
	Distribution: System Losses	Yes	No	Yes	Yes	Yes
	Distribution: O&M	Yes	No	No	No	Yes
	Distribution: Voltage	No	No	No	No	No
	General: Financial Incentives	Yes	No	Yes	Yes	Yes
	General: Program Administration Costs	Yes	No	Yes	Yes	Yes
	General: Utility Performance Incentives	No	No	Yes	Yes	No
	General: DG tariffs	No	No	Yes	Yes	No
	General: Credit and Collection Costs	Yes	No	Yes	Yes	Yes
	General: Risk	No	No	No	No	No
	General: Reliability	No	No	No	No	No
General: Resilience	No	No	No	No	No	

Discussion – Electric Utility System Impacts

Question 1: For impacts not currently treated consistently across DERs, is it due to:

- Impact not being applicable because of specific DER or use case?
- Lack of data?
 - What are the priority impacts to value?
- Not material?

Question 2: What impacts are currently not included for any DER but should be?

- Distribution voltage, Risk, Reliability, and Resilience

Gas Utility Impacts – Current Practice

(based on Puget Sound)

Impact Category	Specific Impact	EE	DR	DG	DS	EVSE
Gas Utility System Impacts	Energy: Gas Commodity	Yes	No	No	No	No
	Energy: Environmental Compliance	No	No	No	No	No
	Energy: Market Price Effects	No	No	No	No	No
	Transp: Pipeline Capacity	Yes	Yes	No	No	No
	Distribution: Pipeline losses	Yes	No	No	No	No
	Distribution: Gas distribution	Yes	Yes	No	No	No
	General: Credit and Collection Costs	Yes	No	No	No	No
	General: Financial Incentives	Yes	Yes	No	No	No
	General: Program Administration Costs	No	No	No	No	No
	General: Utility Performance Incentives	No	No	No	No	No
	General: Credit and Collection Costs	Yes	No	No	No	No
	General: Risk	No	No	No	No	No
	General: Reliability	No	No	No	No	No
	General: Resilience	No	No	No	No	No

Discussion – Gas Utility System Impacts

- EE and DR are the main DERs that impact the gas system.

Question 1: For impacts not currently treated consistently across DERs, is it due to:

- Impact not being applicable because of specific DER or use case?
- Lack of data?
 - What are the priority impacts to value?
- Not material?

Question 2: What impacts are currently not included for any DER but should be?

- Environmental Compliance? Market price effects?
Program Admin?
- Risk, Reliability, and Resilience

5-minute break

NSPM Step 3: Decide Which **Non-Utility System Impacts** to Include in Test

Non-Utility System Impacts

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

Mapping Policies to Non-Utility System Impacts

- All categories of impacts are covered under two umbrella policies:
 - Clean Energy Transformations Act (CETA)
 - Climate Commitment Act (CCA)

Impact type	Impact category	Electric policy, statute, or decision	Gas policy, statute, or decision
Other Fuels	Other Fuels (gas, oil, propane)	CETA, CCA - all DERs	CCA - all DERs
Societal	Resilience	CETA, CCA - all DERs	CCA - all DERs
	Energy Security	CETA, CCA - all DERs	CCA - all DERs
	GHG Emissions	CETA, CCA - all DERs	CCA - all DERs
	Other Environmental	CETA, CCA - all DERs	CCA - all DERs
	Public Health	CETA, CCA - all DERs	CCA - all DERs
	Economic Development/ Jobs	CETA, CCA - all DERs	CCA - all DERs
	Energy Burden/Equity	CETA, CCA - all DERs	CCA - all DERs
Host Customer	Host Customer (non-low Income)	CETA, CCA - all DERs	CCA - all DERs
	Host Customer Low-Income	CETA, CCA - all DERs	CCA - all DERs

Potential Host Customer Impacts

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

NEIs	Description
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)

Host Customer Impacts – Current Practice

(based on Puget Sound)

Impact Category	Specific Impact	EE	DR	DG	DS	EVSE
Host Customer Impacts	Measure Costs (Host)	Yes	No	Yes	Yes	Yes
	Transaction costs (Host)	No	No	Yes	Yes	Yes
	Interconnection Fees	No	No	Yes	Yes	Yes
	Risk	No	No	No	No	No
	Reliability	No	No	Yes	Yes	No
	Resilience	No	No	Yes	Yes	No
	Other Fuel	No	No	No	No	Yes
	Tax Incentives	No	No	Yes	Yes	No
	Non-Energy Impacts (non-low income)	Yes	No			
	Asset value	Yes	No	No	No	Yes
	Productivity	Yes	No	No	No	No
	Economic well-being	Yes	No	No	No	No
	Comfort	Yes	No	No	No	No
	Health & safety	Yes	No	No	No	No
	Empowerment & control	No	No	No	No	No
	Satisfaction & pride	No	No	No	No	No
	Non-Energy Impacts (Low income)	Yes	No	No	No	

Host Customer 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, DERs, and use cases
- They can be difficult to measure, quantify, and monetize
- Estimates are often approximate and uncertain

Discussion: Host Customer Impacts

NSPM Principles

- Symmetry Principle
 - If participant costs are included, then participant benefits 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

Options for Participant Impacts

- Include participant costs and benefits and quantify NEIs prior to first application of test (e.g., using proxy % adder)
- Exclude participant costs and benefits
- Exclude participant costs and benefits unless and until NEIs have been quantified

Other Fuels and Water Impacts

- Other Fuels Impacts

- For states with an “all-fuels” policy other fuel impacts on the overall industry should be included – referred to as “other fuel system impacts”.
- These are a separate and distinct category from direct host customer impacts.

Type	Other Fuel Impact (oil, propane, wood, gasoline)	Description
Other Fuels	Commodity	The fuel and O&M impacts associated with other fuels
	Environmental Compliance	Actions required to comply with environmental regulations
	Market Price Effects	The change in wholesale prices as a result of changes in customer consumption

- Water Impacts

- DERs that create water savings will impact the overall hydro industry.
- Like Other Fuels, these impacts are a separate and distinct category from direct host customer impacts.

Societal Impacts – Current Practice

(based on Puget Sound)

Impact Category	Specific Impact	EE	DR	DG	DS	EVSE
Societal Impacts	Greenhouse Gas Emissions	Yes	No	Yes	Yes	Yes
	Other Environmental Impacts	Yes	No	No	No	Yes
	Public Health	Yes	No	No	No	Yes
	Economic Development and Jobs	No	No	No	No	No
	Resilience	No	No	No	No	No
	Energy Security	No	No	No	No	No

Impact type	Impact category	Electric policy, statute, or decision	Gas policy, statute, or decision
Societal	Resilience	CETA, CCA - all DERs	CCA - all DERs
	Energy Security	CETA, CCA - all DERs	CCA - all DERs
	GHG Emissions	CETA, CCA - all DERs	CCA - all DERs
	Other Environmental	CETA, CCA - all DERs	CCA - all DERs
	Public Health	CETA, CCA - all DERs	CCA - all DERs
	Economic Development/ Jobs	CETA, CCA - all DERs	CCA - all DERs
	Energy Burden/Equity	CETA, CCA - all DERs	CCA - all DERs

Societal Impacts - Discussion

Question 1: For impacts not currently treated consistently across DERs, is it due to:

- Impact not being applicable because of specific DER or use case?
- Lack of data?
 - What are the priority impacts to value?
- Not material?

Question 2: What impacts are currently not included for any DER but should be?

Societal Impacts – Economic Impacts

Definition: The value of any incremental economic development and jobs provided by a DER

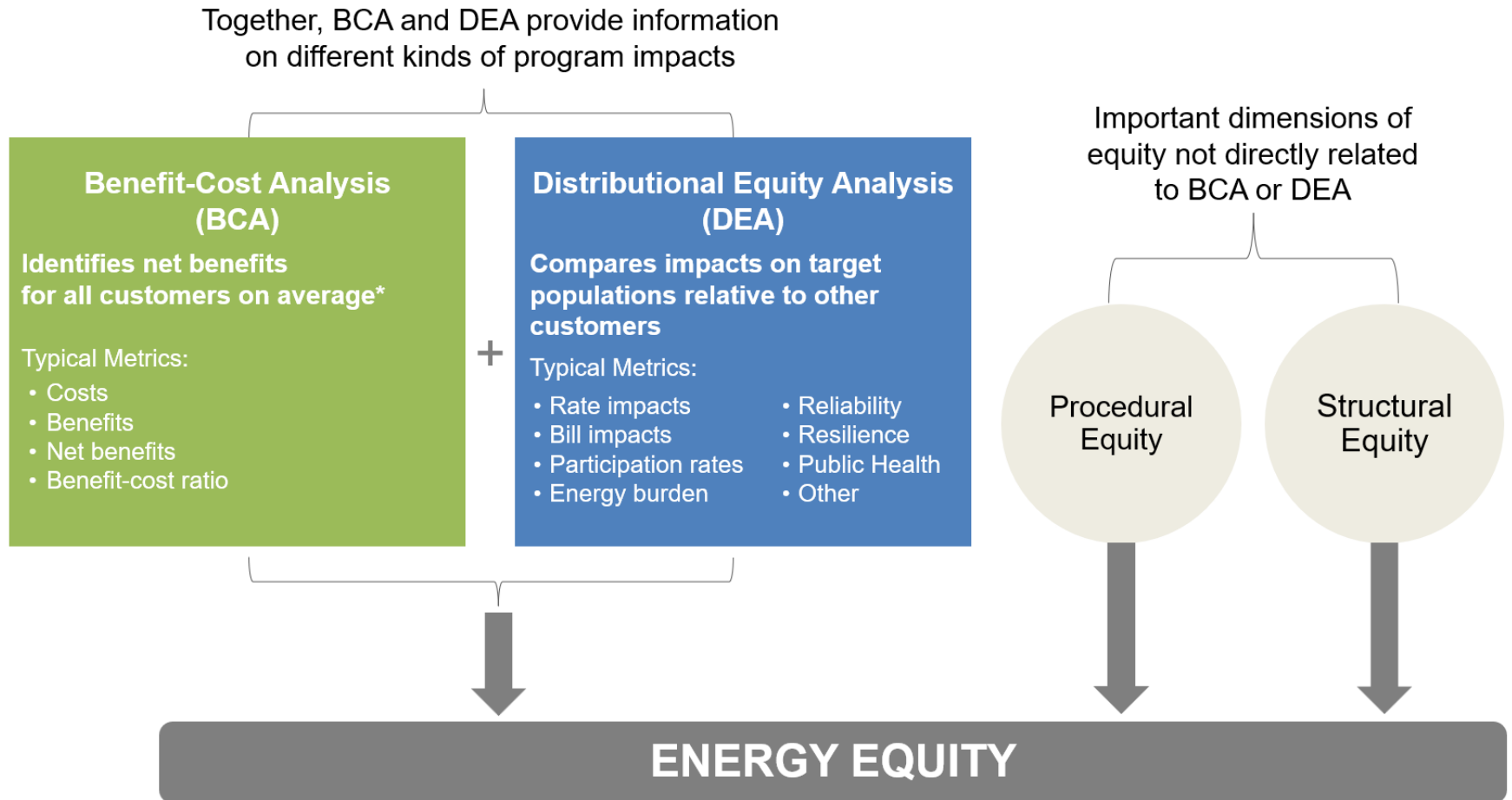
- Common practice to estimate net-job impacts in the state
- Treatment of macroeconomic impacts in a BCA
 - Monetary value of macroeconomic impacts should not be added to monetary values of BCA because that would result in double-counting
 - Nonetheless, job impacts can be included in a quantitative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

Societal Impacts – Resilience

- It is important to avoid double-counting between societal, utility system, and host customer resilience benefits.
 - **Utility System Definition:** The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions
 - **Host Customer Definition:** The ability of host customers to avoid, mitigate, or quickly respond to power outages.
- Societal resilience impacts are incremental to those experienced by utilities or host customers.
 - Example: DG combined with storage allow for critical facilities such as hospitals, fire stations, etc. to continue providing services during a planned or unplanned power outage.
 - The services that these critical facilities provide to society go beyond the benefits enjoyed by the host customers themselves.

Accounting for Energy Equity

It is important to distinguish between a BCA and a Distributional Equity Analysis (DEA) .

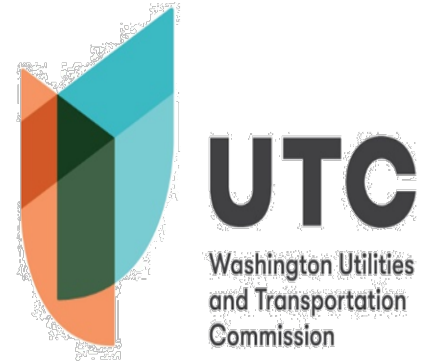


*Non-utility system impacts can be accounted for in BCAs if consistent with the jurisdiction's policy goals, but inclusion of these impacts in BCA does not provide a measure of equity across target populations.

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.

Future workshop to refer to Methods Tools & Resources (MTR) Handbook to help inform accounting for impacts: <https://www.nationalenergyscreeningproject.org/resources/quantifying-impacts/>



Q&A and Next Steps



Next Steps

Straw Proposal

- Staff will prepare Straw Proposal for stakeholder comment and discussion at next workshop.

Workshop #4 (TBD - late October)

- Discuss Straw Proposal on proposed primary BCA test
- Address methods for quantifying key impacts
- Discuss additional topics, e.g., secondary tests, discount rates

Workshop #5 (TBD - November)

- Accounting for Energy Equity, complementary analysis to BCA
- Step 5: Ensure transparency (BCA inputs, results, decision framework)

Homework Assignments:

Upcoming notice for comment with short turnaround time

- For the utilities:
 - Explain the inconsistency in the tables regarding the impacts. For example, are impacts not relevant or is it a lack of data, etc.
- For all:
 - Table of impacts across DERs.
 - Indicate if the impact be quantified, addressed qualitatively, or be included as a proxy in the first use of the test.
 - Add any impacts currently missing.
- Contact Staff: Jennifer.Snyder@utc.wa.gov



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