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

## **Workshop #4**

**Docket UE-210824**

**Wednesday, November 9, 2022, at 10:00 a.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 #4**

## **Washington UTC Workshops**

**Jennifer Snyder, WA Utilities & Transportation Commission (UTC)**

**Courtney Lane, Synapse Energy Economics**

**Julie Michals, E4TheFuture**

**November 9, 2022**

# Today's Meeting Agenda

## Introduction (5 min)

- Objectives for today's workshops

## Overview of Straw Proposal (1 hr 20 min)

- Utility System Impacts
- Non-Utility System Impacts
  - Other Fuels
  - Host Customer
  - Societal

## Application of the WA Test (15 min)

- Example applications of WA Test

## Q&A and Next Steps (20 min)

- Written comments on Straw Proposal
- Next workshop

# Today's Speakers/Moderator



Courtney Lane  
Principal Associate  
Synapse Energy Economics



Julie Michals  
Director of Valuation  
E4TheFuture  
NESP Project Coordinator

# The WA Test Straw Proposal

- The Straw Proposal covers the first three steps of the NSPM for DERs:
  - Step 1. Articulate Applicable Policy Goals.
  - Step 2. Include All Utility System Impacts.
  - Step 3. Decide Which Non-Utility System Impacts to Include.
- The proposal contains a comprehensive list of DER impacts that captures the state's policy goals.
- Not every impact will be applicable to each DER or DER use case.
- The Straw Proposal indicates what impacts should be included in the WA Test and the definitions of those impacts.
  - It does not prescribe methods or assign values

# WA Test Straw Proposal Summary

Impact Type	Impact Category	Impact
<b>Utility System</b>	Electric Utility System	All
	Gas Utility System	All
<b>Non-Utility System</b>	Other Fuels (Oil, Propane, Wood, Gasoline)	Commodity
		Environmental Compliance
		Market Price Effects
	Host Customer	Energy Impacts
		Non-Energy Impacts
		Low-Income Non-Energy Impacts
	Societal Impacts	Greenhouse Gas Emissions
		Other Environmental
		Public Health
		Economic and Jobs
		Energy Security
		Energy Equity
		Resilience

# Mapping Policies to Impacts

- WA Test Straw Proposal includes 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



# Utility System Impacts

# Electric Utility System Impacts



Category	Impact
Generation	Energy Generation
	Capacity
	Environmental Compliance
	Renewable Portfolio or Clean Energy Compliance
	Market Price Effects
	Ancillary Services
Transmission	Transmission Capacity
	Transmission System Losses
Distribution	Distribution Costs
	Distribution Voltage
	Distribution System Losses
General	Financial Incentives
	Program Administration Costs
	Utility Performance Incentives
	Distributed Generation Compensation Mechanisms
	Credit and Collection Costs
	Risk
	Reliability
	Resilience

# Discussion – Electric Utility System Impacts

## 1. General feedback on proposal

## 2. Clarification needed

- a. Environmental Compliance
  - i. How should this be defined for WA state?
  - ii. What is already embedded in generation?
- b. RPS/CES
  - i. Is there agreement that CETA zero-carbon goals should be included in this impact?

# Gas Utility System Impacts

Category	Impact
Commodity/Supply	Gas Commodity
	Environmental Compliance
	Market Price Effects
Transportation	Pipeline Capacity
Distribution	Gas Distribution
	Pipeline Losses
General	Same as Electric Utility System Impacts

# Discussion – Gas Utility System Impacts

## 1. General feedback on proposal

## 2. Clarification needed

- a. Environmental Compliance
  - i. How should this be defined for WA state?
  - ii. What is already embedded in gas commodity?

# Non-Utility System Impacts

# Other Fuel Impacts

Category	Impact	Definition
Other Fuels	Commodity	The fuel and O&M impacts associated with other fuels
	Environmental Compliance	Actions to comply with environmental regulations
	Market Price Effects	The change in wholesale prices as a result of changes in customer consumption

# Discussion – Other Fuel Impacts

## 1. General feedback on proposal



# Host Customer Energy Impacts

Type	Impact	Definition
Host Customer Energy Impacts	Measure Costs	Host customer share of costs incurred to install and operate DERs
	Transaction Costs	Other costs incurred to install and operate DERs
	Interconnection Fees	Cost 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
	Other Fuels	Change in the Host Customer's consumption of oil, gasoline, propane, natural gas, and water due to the installation of a DER
	Tax incentives	Federal, state, and local tax incentives provided to host customers to defray the costs of some DERs

# Host Customer Non-Energy Impacts

Type	Impact	Definition
Host Customer NEIs	Water	Changes in water consumption resulting from a DER
	Asset value	Changes in the value of a home or business resulting from a DER
	Productivity	Changes in a customer's productivity
	Economic well-being	Economic impacts beyond bill savings
	Comfort	Changes in comfort level (e.g., thermal, noise, and lighting impacts)
	Health & safety	Changes in customer health or safety
	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
	Low-Income NEIs	Impacts that are different from non-low-income host customer impacts, such as reduced home foreclosures.

# Discussion: Host Customer Impacts

## 1. Reminder of 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 either.
- Hard-to-Quantify Principle
  - Relevant impacts cannot be ignored just because they are difficult to quantify

## 2. What should be included in the WA Test?

- 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

## 3. General feedback on proposal

# Societal Impacts



Category	Impact	Description
<b>Societal Impacts</b>	GHG Emissions	Non-embedded GHG emissions. Should be incremental to values included in utility system impacts
	Other Environmental	Other air emissions, solid waste, land, water, and other environmental impacts
	Public Health	Health impacts, medical costs, and productivity affected by health
	Economic and Jobs	Incremental economic development and job impacts represented in job-years. Job-years should be quantified but should not be directly included as a monetary value in cost-effectiveness
	Resilience	Definition to be determined through working group process
	Energy Security	Reduction in imports of various forms of energy to help inform the goals of energy independence and security

# Discussion – Societal Impacts

## 1. General feedback on proposal

## 2. Clarification needed

### a. GHG Emissions

- i. How should this be defined?

### b. Other Environmental

- i. How should this be defined? Need to ensure no overlap with Public Health and Utility System Impacts.

### c. Public Health

- i. How should this be defined? Need to ensure no overlap with Host Customer NEIs and Other Environmental.

## Discussion Societal Impacts – Energy Security

**Definition:** Reductions in imports of various forms of energy help advance the goals of energy independence & security.

- Focus tends to be on costs, risks, volatility of fossil fuel imports.
- There is potential for overlap with utility system reliability and risk.

**How should this be defined for WA state?**

## Discussion 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

# Risk, Reliability, and Resilience



## Discussion – Risk

- It is important to avoid double-counting between utility system, and host customer risk benefits.
  - **Utility System Definition:** Uncertainty including operational, technology, cybersecurity, financial, legal, reputational, and regulatory risks.
  - **Host Customer Definition:** Uncertainty including price volatility, power quality, outages, and operational risk related to failure of installed DER equipment and user error.
- Jurisdictions often included risk as a utility system resource risk related to fossil fuel volatility whereby DERs provide a price hedge.

## Discussion – Reliability

- It is important to avoid double-counting between utility system, and host customer reliability benefits.
  - **Utility System Definition:** Maintaining generation, transmission, and distribution system to withstand instability, uncontrolled events, cascading failures, or unanticipated loss of system components.
  - **Host Customer Definition:** The ability to prevent or reduce the duration of host customer outages.
- Utility reliability metrics often include SAIDI/SAIFI but that cannot be monetized in BCA.
- NSPM MTR describes methods for calculating the Value of Lost Load, Customer Interruptions Costs, and Service Restoration Costs.

## Discussion – 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 Definition:** 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.

# Application of the WA Test

# Applying the WA Test

- All impacts are included in the WA Test but not all impacts apply to each DER and DER use case.
- Utilities should consider the use case of the DER to determine which impacts are applicable.

Category	Impact	EE	DR	DG	DS	EVs
Generation	Energy Generation	X	X	X	X	X
	Capacity	X	X	X	X	X
	Environmental Compliance	X	X	X	N/A	X
	Renewable Portfolio or Clean Energy Compliance	X	N/A	X	N/A	X
	Market Price Effects	X	X	N/M	N/M	X
	Ancillary Services	N/M	X	X	X	X
Transmission	Transmission Capacity	X	X	X	X	X
	Transmission System Losses	X	X	X	X	X
Distribution	Distribution Costs	X	X	X	X	X
	Distribution Voltage	N/M	N/A	X	N/A	X
	Distribution System Losses	X	X	X	X	X
General	Financial Incentives	X	X	X	X	X
	Program Administration Costs	X	X	X	X	X
	Utility Performance Incentives	X	N/A	N/A	N/A	N/A
	Distributed Generation Compensation Mechanisms	N/A	N/A	X	N/A	N/A
	Credit and Collection Costs	X	N/A	X	X	X
	Risk	X	X	X	X	X
	Reliability	X	X	X	X	X
	Resilience	X	X	X	X	N/A

# Example Application of the WA Test

**Program:** Residential Off-Peak Charging Program

**Description:** Utility provides rebate to encourage off-peak charging

	Category	Impact	Included in BCA	Monetized in BCA	Notes
<b>Electric Utility System Impacts</b>	Generation	Energy Generation	Yes	Yes	Impact of load shifting on energy generation
		Capacity	Yes	Yes	Benefit of reduced peak
		Environmental Compliance	Yes	Yes	Potential benefit if off-peak tied to lower carbon generation or increased renewable generation.
		Renewable Portfolio or Clean Energy Compliance	N/A	N/A	Not applicable – load shifting only
		Market Price Effects	Yes	Yes	Benefit from reduction in peak consumption
		Ancillary Services	Yes	Yes	Benefit due to load reduction during peak hours
	Transmission	Transmission Capacity	Yes	Yes	Benefit from reduced transmission peak from lower consumption
		Transmission System Losses	Yes	Yes	Benefit from reduced transmission volume at peak
	Distribution	Distribution Costs	Yes	Yes	Benefit from reduced distribution peak from lower consumption
		Distribution Voltage	N/A	N/A	Could be modest benefit but excluded because not material
		Distribution System Losses	Yes	Yes	Benefit from reduced distribution volume at peak
	General	Financial Incentives	Yes	Yes	Utility rebate to participants
		Program Administration Costs	Yes	Yes	Utility cost to administer program
		Utility Performance Incentives	N/A	N/A	Not applicable – no utility incentive in place
		Distributed Generation Tariffs	N/A	N/A	Not applicable
		Credit and Collection Costs	N/A	N/A	Not applicable
		Risk	Yes	No	Could address through proxy or qualitatively
Reliability		N/A	N/A	Not applicable	
Resilience	N/A	N/A	Not applicable		

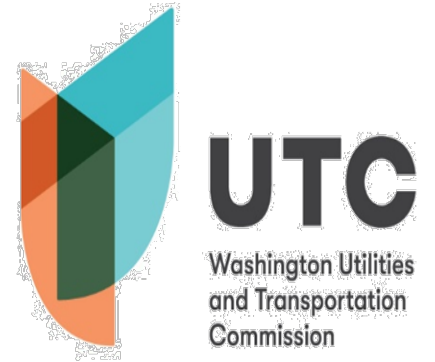
# Example Application Continued



**Program:** Residential Off-Peak Charging Program

**Description:** Utility provides rebate to encourage off-peak charging

	Category	Impact	Included in BCA	Monetized in BCA	Notes
<b>Gas Utility System Impacts</b>	Not applicable – electric only measure				
<b>Other Fuel Impacts</b>	Not applicable – electric only measure				
<b>Host Customer Energy Impacts</b>	Host Customer	Measure Costs	N/A	N/A	No customer cost
		Transaction Costs	N/M	N/M	Not material
		Interconnection Fees	N/A	N/A	Not applicable
		Risk	N/A	N/A	Not applicable
		Reliability	N/A	N/A	Not applicable
		Resilience	N/A	N/A	Not applicable
		Other Fuels	N/A	N/A	Not applicable
		Tax incentives	N/A	N/A	Not applicable
<b>Host Customer NEIs</b>	Non-low income	Water	N/A	N/A	Not applicable
		Asset value	N/A	N/A	Not applicable
		Productivity	N/A	N/A	Not applicable
		Economic well-being	N/A	N/A	Not applicable
		Comfort	N/A	N/A	Not applicable
		Health & safety	N/A	N/A	Not applicable
		Empowerment & control	N/A	N/A	Not applicable
		Satisfaction & pride	N/A	N/A	Not applicable
	Low-Income	Low-Income NEIs	N/A	N/A	Not applicable – non-low-income program
<b>Societal Impacts</b>	Societal	GHG Emissions	Yes	Yes	Potential benefit if off-peak tied to lower carbon generation or increased renewable generation.
		Other Environmental	N/A	N/A	Not applicable
		Public Health	No	No	No – benefit of reduced criteria air pollutants already included in Utility System Impacts.
		Economic and Jobs	No	No	Addressed separately
		Resilience	N/A	N/A	Not applicable
		Energy Security	N/A	N/A	Not applicable



## Q&A and Next Steps





# Next Steps

## **Straw Proposal**

- Provide feedback via written comments

## **Workshop #5** (December 5)

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

# Homework Assignments

Notice of Opportunity to Comment

Feedback on straw proposal

Requests for workshops for Phase 2

Contact Staff: [Jennifer.Snyder@utc.wa.gov](mailto:Jennifer.Snyder@utc.wa.gov)



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