



*2021 PSE Integrated Resource Plan*

# K

## Economic, Health and Environmental Benefits Assessment of Current Conditions

*This appendix describes the proposed methodology and initial assumptions for the Economic Health and Environmental Benefits Assessment per WAC 480-100-620 (9). Results will be reported in the final IRP filing after publication of the Department of Health cumulative impact analysis and further public participation.*



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## 1. OVERVIEW

The Clean Energy Transformation Act (CETA) requires utility resource plans to ensure that all customers benefit from the transition to clean energy. To achieve this goal, an Economic, Health and Environmental Benefits Assessment must be performed to provide guidance to the development of the utility's Clean Energy Action Plan (CEAP)<sup>1</sup> and Clean Energy Implementation Plan (CEIP).<sup>2</sup> The purpose of the assessment is to identify and quantify the existing conditions for all customers and to identify disparate impacts to communities within and around PSE's service territory that are related to resource planning. The goal is for the utility to propose actions and programs that are not simply lowest reasonable cost, but also distribute its benefits equitably among customers.

This appendix explains the methodology proposed to create PSE's assessment, the data sources used to define certain customer groups and the metrics used to measure current conditions; however, PSE acknowledges that these plans are preliminary. The current description is informed by PSE's understanding of the initial rulemaking drafted by the Washington Utility and Transportation Commission (WUTC), but the analysis will evolve based on the cumulative impact analysis from the Washington Department of Health expected at the end of December 2020 and on stakeholder feedback.

## Proposed Strategy and Definitions

To evaluate the equitable distribution of benefits, the assessment considers the following as defined in WAC 480-100-620 (9):

- energy and non-energy benefits and reductions of burdens to vulnerable populations and highly impacted communities
- long-term and short-term public health and environmental benefits, costs, and risks, and
- energy security risk

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<sup>1</sup> / The Clean Energy Action Plan is a 10-year outlook that achieves the clean energy transformation standards.

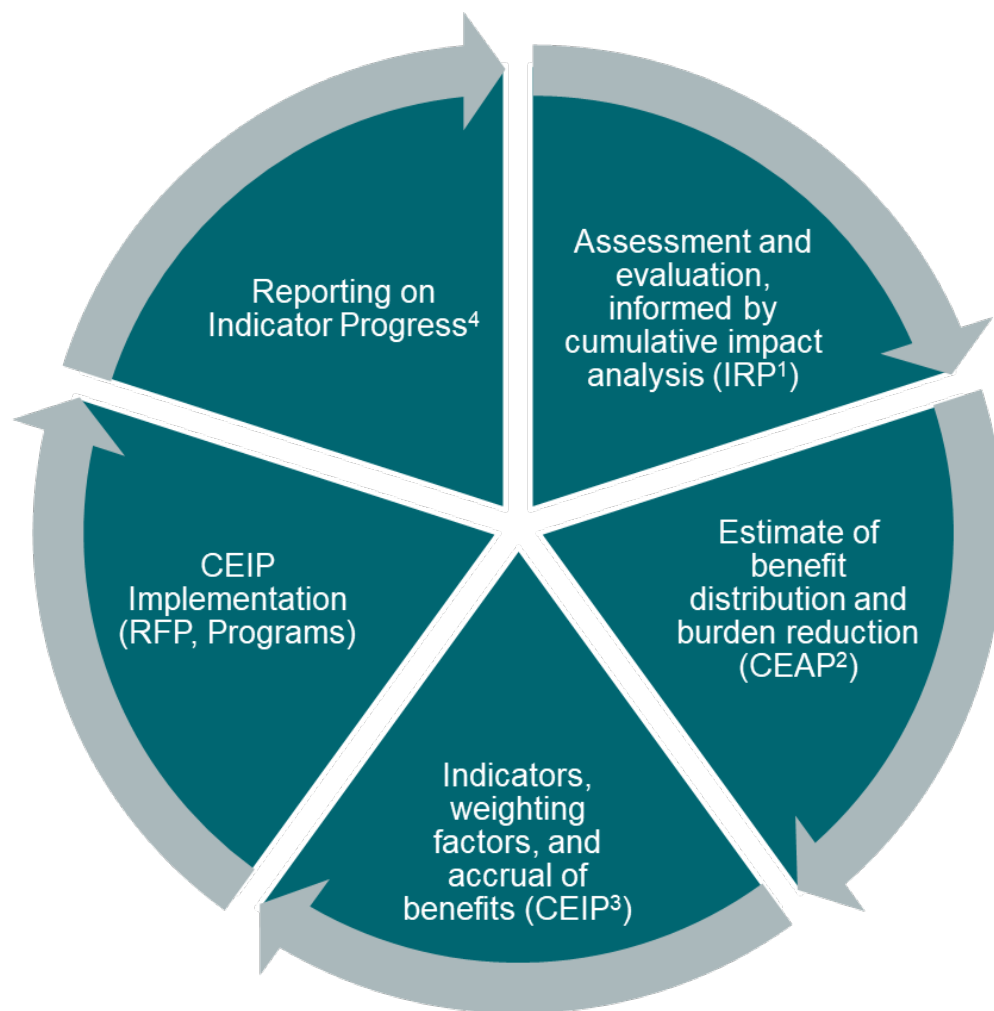
<sup>2</sup> / The Clean Energy Implementation Plan identifies specific targets and actions PSE will take toward meeting the energy transformation standards.



## Life Cycle Process

Figure K-1 shows the life cycle process PSE proposes to undertake in assessing customer groups, defining customer benefit indicators and reporting on progress.

Figure K-1: CETA Equitable Distribution of Benefits Lifecycle



### NOTES

1. IRP Assessment and Evaluation: Draft WAC 480-100-620(9) and (11)(g)
2. CEAP Estimates: Draft WAC 480-100-620(12)(c)(ii)
3. CEIP Indicators and Weighting Factors: Draft WAC 480-100-640(4) and (5)(a)
4. Reporting on indicator progress: Draft WAC 480-100-650(1)(d)

The assessment will identify specific metrics and be informed by the cumulative impact analysis from the Washington State Department of Health, which anticipates completing this analysis by the end of December 2020; the results of that study will be reported in the Final 2021 IRP filing.



## Definitions

Definitions are key to this assessment, and PSE anticipates the following definitions may change between the draft and final IRP as a result of stakeholder feedback and the Department of Health's cumulative impact report.

**ENERGY BURDEN.** The share of annual household income used to pay annual home energy bills.

**EQUITABLE DISTRIBUTION.** A fair and just, but not necessarily equal, allocation of benefits and burdens from the utility's transition to clean energy. Equitable distribution is based on disparities in current conditions. Current conditions are informed by, among other things, the assessment described in RCW 19.280.030(1)(k) from the most recent integrated resource plan.

**HIGHLY IMPACTED COMMUNITIES.** A community designated by the Department of Health based on the cumulative impact analysis required by RCW 19.405.140 or a community located in census tracts that are fully or partially on "Indian country," as defined in 18 U.S.C. Sec. 1151.

**VULNERABLE POPULATIONS.** Communities that experience a disproportionate cumulative risk from environmental burdens due to: Adverse socioeconomic factors, including unemployment, high housing and transportation costs relative to income, access to food and health care, linguistic isolation, and sensitivity factors, such as low birthweight and higher rates of hospitalization.

**CUSTOMER BENEFIT INDICATOR.** An attribute, either quantitative or qualitative, of resources or related distribution investments associated with customer benefits described in RCW 19.405.040(8).

### INDICATOR VS. ASSESSMENT METRIC

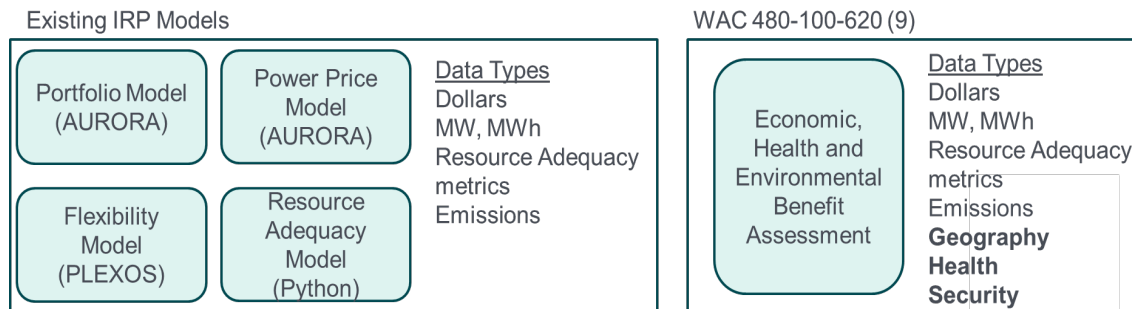
- Indicator shows progress as it is tied to an attribute of a resource or program.
- Assessment metrics give a snapshot in time of specific measures related to economic, health, environmental, and energy security and resiliency impacts.



## 2. METHODOLOGY

The IRP traditionally analyzes specific quantitative data such as cost measured in dollars, resource adequacy metrics and emissions. With the inclusion of this assessment, the IRP must also consider additional data types such as geography, health and security as shown in Figure K-2

*Figure K-2: WAC 480-100-620(9) Assessment Objectives*



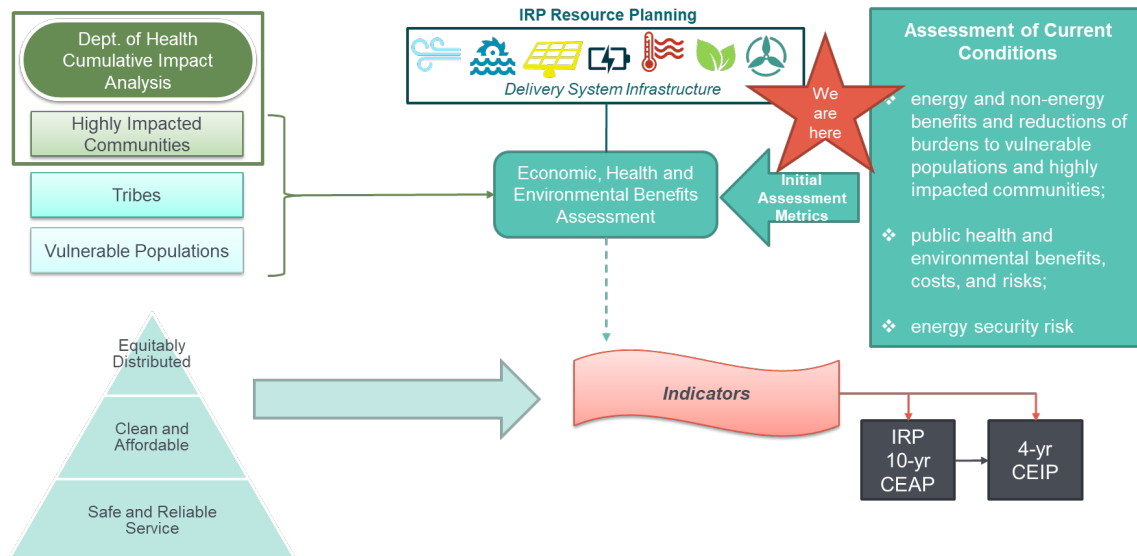
Because some of these data types are qualitative in nature, they do not necessarily align with existing IRP model framework. In order to begin to collect data and perform the analysis for this assessment, PSE has broken down the necessary steps as follows:

1. Define assessment metrics.
2. Evaluate current conditions and define highly impacted communities and vulnerable populations concurrently.
3. Compare current conditions for all PSE customers to highly impacted communities and vulnerable populations.
4. Measure disparities.



Figure K-3 was shared with stakeholders during the IRP public participation process and illustrates the role of the assessment in the IRP as well as how it relates to the Clean Energy Action Plan and the Clean Energy Implementation Plan. PSE solicited stakeholder feedback on the assessment during the IRP public process.

*Figure K-3: Incorporating the Assessment into the IRP*



This assessment informs the development of the CEAP and CEIP. Feedback on the actions, indicators and targets from this assessment will be captured through the CEIP.

The assessment metrics and definitions of highly impacted communities and vulnerable populations presented here are preliminary and PSE expects to update the metrics as it evolves its understanding for future assessments.

## Assessment Metrics

As required by the CETA legislation and IRP/CEIP rulemaking, assessment metrics will include but not be limited to the areas of economics, health and environmental benefits. The purpose of these metrics is to quantify existing conditions observed across PSE's customers in order to evaluate disparities between populations within that customer base. PSE developed an initial set of metrics and they are included in Figure K-5. The initially proposed categories, data sources and definitions for each assessment metric are also included in Figure K-5. Proposed and available metrics are still being evaluated and may change.





Figure K-5: Summary of Proposed Assessment Metrics

PSE Defined Category	Proposed Assessment Metric	Definition	Data source
Health	Death from Cardiovascular Disease	Measures the proportion of deaths in a population due to cardiovascular disease	Wash. Department of Health (Fortress) <a href="https://fortress.wa.gov/doh/wn/WTNIBL">https://fortress.wa.gov/doh/wn/WTNIBL</a>
	Low Birthweight	Measures the count of infants born at term with a birthweight less than 2,500 grams	
Environmental	NO <sub>x</sub> – Diesel Emissions	Measures NO <sub>x</sub> emissions within a specific census tract area	Wash. Department of Health (Fortress) <a href="https://fortress.wa.gov/doh/wn/WTNIBL">https://fortress.wa.gov/doh/wn/WTNIBL</a>
	Ozone Concentration	Measures the three-year, mean concentration of daily maximum 8-hour rolling averaged ozone	
	PM2.5 Concentration	Measures the 3-year, mean concentration of daily maximum PM 2.5 levels	
	Populations Near Heavy Traffic Roadways	Measures number of people exposed to air pollutants from living near busy roadways	
	SO <sub>2</sub> Levels	Emission levels tied to PSE 's owned resources	PSE, EPA COBRA Tool <a href="https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool">https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool</a>
	NO <sub>x</sub> Levels	Emission levels tied to PSE 's owned resources	PSE, EPA COBRA Tool <a href="https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool">https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool</a>
Economic	Energy Burden of Average Customer	Percentage of household income spent on energy	Department of Energy LEAD Tool <a href="https://www.energy.gov/eere/slsc/maps/lead-tool">https://www.energy.gov/eere/slsc/maps/lead-tool</a>
	Transportation Expense	Percentage of income spent by Median Income Families	Wash. Department of Health (Fortress)





PSE Defined Category	Proposed Assessment Metric	Definition	Data source
	Unemployed	Measures percentage of the population that are in the labor force and registered as unemployed	<a href="https://fortress.wa.gov/doh/wn/WTNIBL">https://fortress.wa.gov/doh/wn/WTNIBL</a>
Energy Security & Resiliency	Resiliency metrics	<i>To be provided in final IRP</i>	PSE
	Resource adequacy metrics	<i>To be provided in final IRP</i>	

**Energy Security & Resiliency.** The Washington State Department of Commerce and other utilities are leveraging reliability metrics to address the consideration of energy security and resiliency. However, energy industry reports consistently highlight that reliability metrics are not a measure of resiliency. Resilience is the ability of the power grid and supply to withstand man-made and natural disasters, including weather-related events. Current working groups under the Electric Power Research Institute and Edison Electric Institute are discussing what metrics are appropriate to represent resiliency. PSE would suggest that this consideration is about preventing large-scale long-duration outages, not reducing the average number of outages across a system, but there is more work to be done.

## Customer Groups

### All PSE Customers

The definition for PSE customers will be based on PSE's service territory for electric ONLY customers. This full set of customers will be assessed based on the Summary of Proposed Assessment metrics from Figure K-5 to capture the current conditions across PSE's electric only customers. This snapshot will serve as a baseline from which to measure current disparities.

### Vulnerable Populations

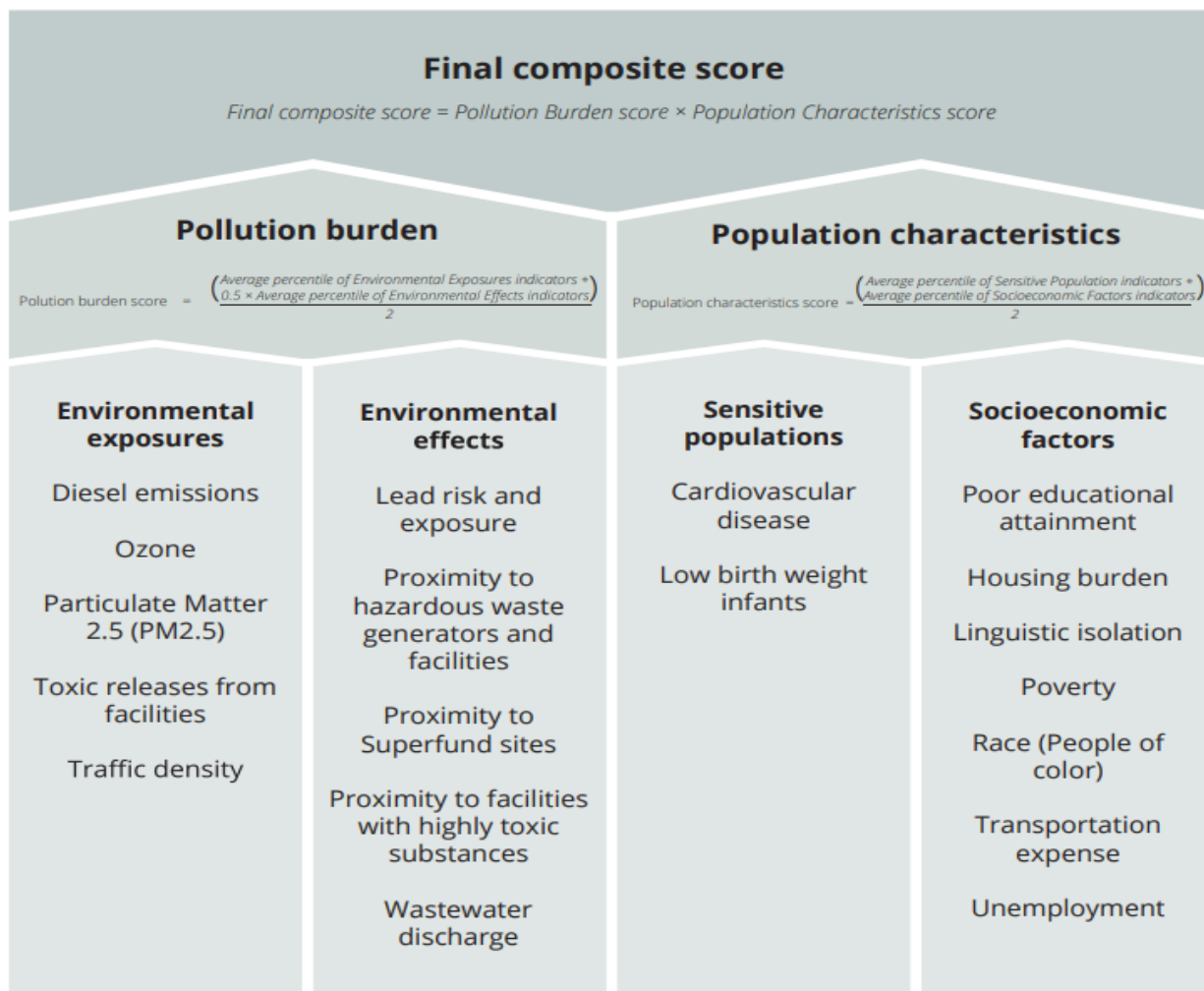
Vulnerable populations attributes are intended to describe disproportionate cumulative risk from environmental burdens due to:

- Adverse socioeconomic factors, including unemployment, high housing and transportation costs relative to income, access to food and health care, and linguistic isolation; and
- sensitivity factors, such as low birthweight and higher rates of hospitalization



The Washington State Department of Health developed a health disparities map and composite score as defined in the Washington Environmental Health Disparities report.<sup>3</sup> With the report, vulnerability is represented by indicators of socioeconomic factors and sensitive populations. The attributes listed under the sensitive populations and socioeconomic factors closely align with the definition of vulnerable populations in the rulemaking and are illustrated in Figure K-6. PSE is proposing to use some of the attributes from this list, as shown in Figure K-7.

Figure K-6: Indicators, Washington Environmental Health Disparities Map



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<https://www.doh.wa.gov/DataandStatisticalReports/WashingtonTrackingNetworkWTN/InformationbyLocation/WashingtonEnvironmentalHealthDisparitiesMap>



Figure K-7: Proposed Attributes for Vulnerable Populations

Indicators	Specific Attribute
Sensitive Populations	Cardiovascular disease
	Low birthweight
Socioeconomic Factors	Housing burden
	Linguistic isolation
	Poverty
	Transportation expense
	Unemployment

### Highly Impacted Communities

Attributes: To be determined from Department of Health cumulative health analysis.

### Tribes

Attributes: To be determined and provided in the final IRP.

## 3. CURRENT CONDITIONS RESULTS

*[To be provided in final IRP]*

## 4. CUSTOMER GROUP COMPARISON RESULTS

*[To be provided in final IRP]*

## 5. CUSTOMER BENEFIT INDICATORS

*[To be provided in final IRP]*

## 6. [FUTURE] DISPARITY ASSESSMENT/RESULTS

*[To be provided in final IRP]*