

Clean Energy Implementation Plan



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Introduction:

This Clean Energy Implementation Plan report serves as a supplement to the reporting template and describes each section of Clark Public Utilities' CEIP in detail. It describes the development, goals and specific plans to reach milestones outlined in the Clean Energy Transformation Act (CETA) in detail.



About the CEIP:

The Clean Energy Implementation Plan (CEIP) is a four-year roadmap that will guide Clark Public Utilities' clean energy actions, programs and investments for the defined four-year period of 2022 – 2025. It's an important part of our energy planning efforts to meet the goals of [Washington's Clean Energy Transformation Act \(CETA\)](#).

The Washington State Department of Commerce has adopted [comprehensive reporting procedures](#) for consumer-owned utilities including public utility districts such as Clark Public Utilities. Washington's consumer-owned utilities are required to complete the CEIP and submit it to Commerce by January 1, 2022.

The goal of the CEIP is to develop an implementation plan of specific actions to be taken over the next four years to track progress being made toward meeting clean energy goals. The CEIP is also a tool that defines and demonstrates how our customers are benefitting from the transition to clean energy through:

- Equitable distribution of energy and non-energy benefits and reduction of burdens to named communities
- Long-term and short-term public health and environmental benefits
- Energy security and resiliency

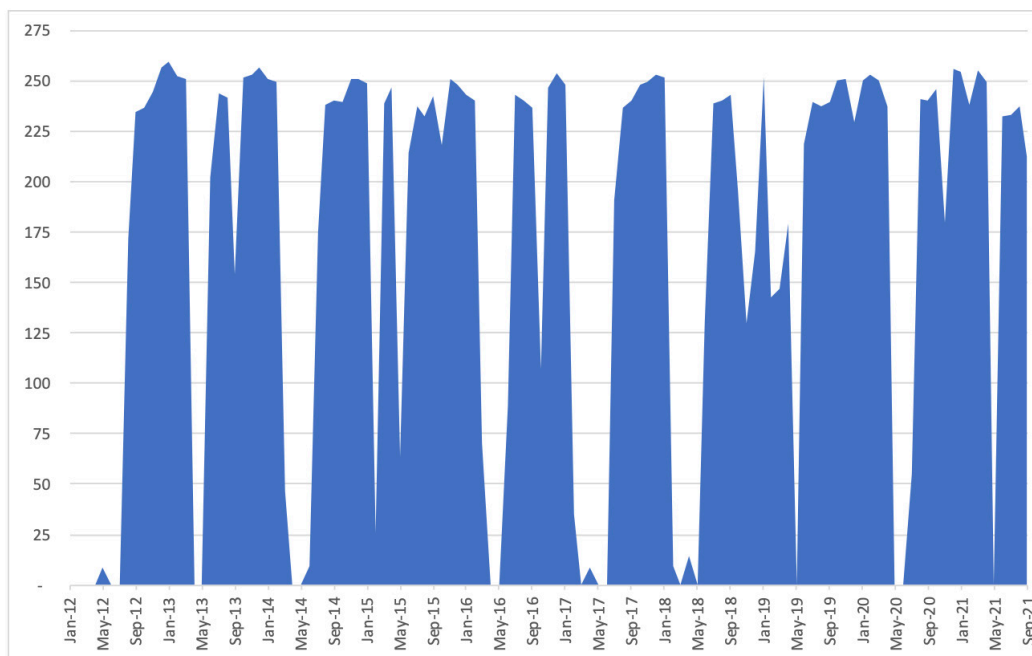
Targets & Actions:

Clark Public Utilities' contract to purchase all of the output of the Combine Hills II wind project and its 18 percent share of the Packwood hydro project are both 100 percent renewable energy purchases. Based on Bonneville Power Administration's (BPA) 2019 and 2020 fuel mix reports, 84 percent of BPA power is assumed to be renewable (hydro and wind) and 11 percent of BPA power is assumed to be non-emitting. Under CETA, which requires utilities to be 80 percent renewable and/or non-emitting by 2030 and 100 percent carbon-free by 2045, BPA power would be 95 percent compliant. Clark Public Utilities' BPA purchase is split approximately 50/50 between the Block and Slice products. Average water conditions were assumed for the BPA slice portion of Clark Public Utilities' BPA purchase. Clark Public Utilities' resource portfolio includes two emitting resources: the natural gas-fired River Road Generating Plant (RRGP) and unspecified market purchases. Based on BPA's 2019 and 2020 fuel mix reports, 5 percent of BPA power is assumed to be sourced to unspecified market purchases.

Clark Public Utilities plans for RRGp to run 11 months each year allowing for a 1-month maintenance outage. As conditions change from planning to actual operations, opportunities arise when wholesale power can be procured from the market at prices less expensive than the cost of power produced at RRGp. Clark Public Utilities will take action to capture these savings. This process is referred to as "economic displacement." Between 2012 and 2020 RRGp was economically displaced approximately 10 weeks or 2.5 months per year. The CEIP assumes no economic displacement in 2022, two weeks of displacement in 2023, four weeks of displacement in 2024 and six weeks of displacement in 2025.



FIGURE 1
2012-20 ACTUAL RRGp GENERATION (MW)



Note: Displacement months include: 2012: Jan-Jul, 2013: Apr, 2014: Mar-Jun, 2015: Feb, 2016: Mar-Jun, 2017: Feb-Jun, 2018: Feb-Jun 15, 2019: Feb 15 – Mar 15, 2020: Jun-Jul

Figure 1 above shows RRGp's daily generation for calendar years 2012 through 2020. RRGp was shut down for maintenance each May. The other months in which the plant was not operating, such as January through April and June through July in 2012, are months in which the plant was shut down for economic displacement.

With more solar and wind coming on-line WECC-wide in the next four years, it is expected that the opportunities to economically displace RRGp with renewable energy will increase each year. Given this trend, and the fact that RRGp has historically been economically displaced in January through July when hydro generation is plentiful, the CEIP assumes that renewable energy is procured to replace RRGp generation when the plant is economically displaced in 2023, 2024 and 2025.

Based on the assumptions discussed above, Clark Public Utilities' carbon-free electricity targets for each year of the four-year period are (note: CETA 2030 target is 80 percent over a 4-year compliance period):

- 2022: Renewable: 58%, Non-Emitting: 7%, Total: 65%
- 2023: Renewable: 60%, Non-Emitting: 7%, Total: 67%
- 2024: Renewable: 62%, Non-Emitting: 7%, Total: 69%
- 2025: Renewable: 64%, Non-Emitting: 7%, Total: 71%

Total renewable energy used to serve retail load over the four-year period 2022-2025 is projected to be 11,237,588 MWh (equal to 61% of the total retail load over the four-year period). As discussed above the renewable energy will be sourced to BPA purchases, the Packwood hydro project, the Combine Hills II Wind Project and market purchases sourced to renewable generating projects (hydro, wind and solar).

Clark Public Utilities' 2021 Conservation Potential Assessment shows cost-effective 4-year (2022-2025) energy savings of 17.91 aMW¹, or 156,994 MWh (as measured in first-year savings). Figures 2 and 3 below show the cost-effective energy efficiency savings potential by sector over two-, four-, 10-, and 20-year periods.

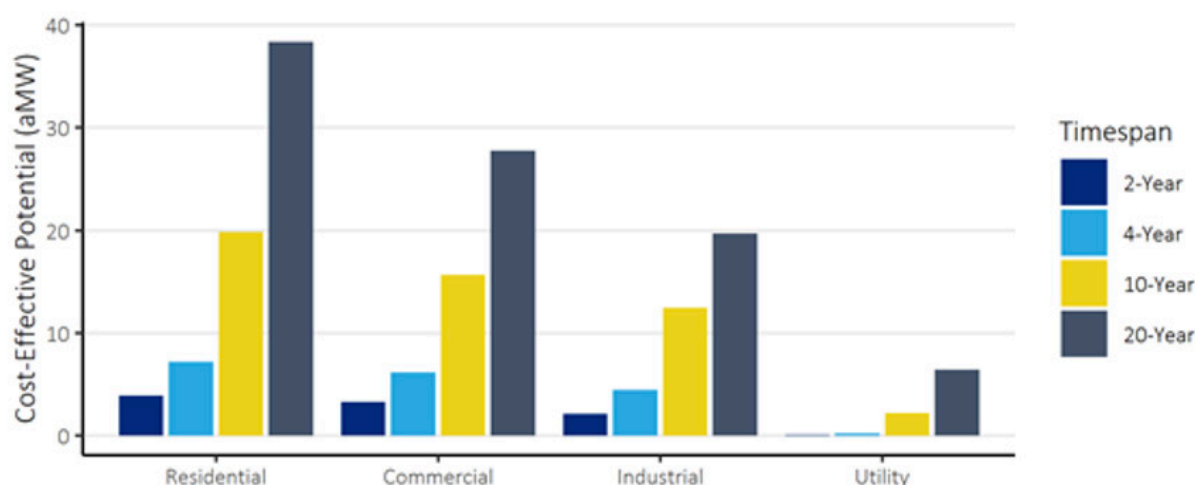
FIGURE 2
COST-EFFECTIVE ENERGY SAVINGS POTENTIAL BY SECTOR (aMW)

Sector	2-Year	4-Year	10-Year	20-Year
Residential	3.91	7.17	19.81	38.37
Commercial	3.28	6.12	15.66	27.78
Industrial	2.13	4.41	12.43	19.67
Utility	0.05	0.20	2.17	6.38
Total	9.37	17.91	50.07	92.20

Source: 2021 Conservation Potential Assessment

¹ An aMW is the equivalent of 1 Mega-watt hour per hour across an entire year or 8,760 MWh/year. The energy does not necessarily have to average 1 MWh per hour every hour.

FIGURE 3
COST-EFFECTIVE ENERGY SAVINGS POTENTIAL BY SECTOR



Source: 2021 Conservation Potential Assessment

Clark Public Utilities endeavors to meet or exceed the targets included in the 2021 CPA. Annual conservation targets are as follows:

- 2022: 4.685 aMW or 41,041 MWh
- 2023: 4.685 aMW or 41,041 MWh
- 2024: 4.270 aMW or 37,508 MWh (*note: 2024 is a leap year*)
- 2025: 4.270 aMW or 37,405 MWh

Clark Public Utilities' 2021 Demand Response Potential Assessment (DRPA), which was provided by Lighthouse Consulting, shows 58 MW of annual demand response (DR) potential in the winter season and 56 MW of DR potential in the summer season. Most of the DR measures included in the DRPA typically require Advanced Metering Infrastructure (AMI) which Clark Public Utilities has yet to deploy.

Smart thermostats used to control residential space heating and cooling equipment was the product with the highest potential across both seasons and was also the only cost-effective DR product identified in the assessment, although it was only marginally cost-effective in the winter. Smart thermostat demand response programs require AMI. The DRPA recommends that Clark Public Utilities evaluate this product further to refine the regional assumptions for program participation, cost, and impacts to see if a DR program using this technology across both seasons could be a cost-effective capacity resource.

Figure 4 below shows the result of the cost-effectiveness screening for each winter DR product. Products are ranked in descending order by benefit-cost ratio. The 20-year DR potential for each product is also shown. Residential smart thermostats were the only winter product identified as cost effective, with several other products falling just below the cost-effectiveness threshold of 1.0.

FIGURE 4
WINTER BENEFIT-COST RATIO
RESULTS BY PRODUCT

Product	Benefit-Cost Ratio	MW
Res Thermostat	1.1	12.2
Res Time of Use	0.9	3.8
Res ERWH Grid-Ready	0.8	10.4
Res Critical Peak Pricing	0.8	5.2
Ind Demand Curtailment	0.8	1.0
Com Demand Curtailment	0.5	0.5
Res ERWH Switch	0.5	1.4
Com Thermostat	0.5	0.4
Medium Com Space Heat Switch	0.4	0.3
Res Space Heat Switch	0.4	4.2
Res HPWH Grid-Ready	0.4	11.0
Com Critical Peak Pricing	0.4	1.2
Small Com Space Heat Switch	0.3	0.4
Ind Critical Peak Pricing	0.2	0.9
Res HPWH Switch	0.2	1.0
Res EV Charging	0.2	3.6
Ind Real Time Pricing	0.1	0.2

ERWH = Electric Resistance Water Heater
HPWH = Heat Pump Water Heater

FIGURE 5
SUMMER BENEFIT-COST RATIO
RESULTS BY PRODUCT

Product	Benefit-Cost Ratio	MW
Res Thermostat	1.4	15.2
Res Critical Peak Pricing	0.9	6.0
Res Time of Use	0.8	5.1
Ind Demand Curtailment	0.8	1.0
Med Com A/C Switch	0.7	1.1
Res ERWH Grid-Ready	0.6	10.4
Com Thermostat	0.5	0.6
Ind Critical Peak Pricing	0.5	1.8
Com Critical Peak Pricing	0.5	1.6
Com Demand Curtailment	0.5	0.3
Res ERWH Switch	0.2	0.9
Small Com A/C Switch	0.2	0.4
Res A/C Switch	0.2	1.4
Res EV Charging	0.2	3.6
Ind Real Time Pricing	0.1	0.4
Res HPWH Grid-Ready	0.1	5.5
Res HPWH Switch	0.1	0.7

In the summer season, smart thermostats were again identified as cost effective, as shown in Figure 5 above.

The only measures shown above that do not require AMI are commercial and industrial demand curtailment and residential EV charging. Because the cost-effective DR programs require AMI and Clark Public Utilities does not have AMI, total demand response over the four-year period 2022-25 is projected to be 0 MW.

The specific actions Clark Public Utilities will take over the next interim performance period to demonstrate progress toward meeting Clark Public Utilities' interim targets and the 2030 GHG neutral and 2045 clean electricity standard (WAC 194-40-200(1)) are described below.

Upgrade River Road Generating Project by Investing in Flexibility Product

Clark Public Utilities is currently exploring the option of upgrading the RRGP plant with equipment that will a) result in a lower heat rate when the plant is operating at baseload generation and b) allow plant generation to be ramped down from its base generating level to near 95 MW when it is economic to do so. If approved by the Board, Clark Public Utilities is planning to install the required hardware and software in 2023. Historically, Clark Public Utilities has economically displaced the plant for a minimum of two weeks as opportunities arose. The plant upgrade will allow Clark Public Utilities to reduce generation in, for example, many off-peak hours when the plant is not economic to run and/or the energy is not needed to serve load.

Clark Public Utilities is usually surplus energy during off-peak hours² and the cost of generating power is, on a unit cost basis, often greater than the wholesale market price of power in off-peak hours. The plant upgrade will allow Clark Public Utilities to reduce plant generation to a minimum operating level of near 95 MW. This will reduce the plant's generation (MWh), carbon emissions and power supply costs over a given year. The reduction in heat rate when operating at baseload generation will result in less gas consumption on a per MWh basis and lower emissions, including emissions of carbon dioxide and nitrous oxide. The reduction in NOx will result in a reduction in the volume of ammonia consumed for NOx emission control.

With the expected buildout of tens of thousands of megawatt-hours of solar and wind projects in the west over the next few years, these intermittent resources will not always match load profiles. This opens the door for RRGP to provide economic and environmental value to both Clark Public Utilities and renewable generation owners in need of energy when renewable generation ramps down.

Post-2028 BPA Power Contract

Clark Public Utilities has been working with BPA and BPA's preference customers on an agreement that will allow Clark Public Utilities to reduce the amount of RRGP generation that is dedicated to serve load in its BPA power contract. Under the proposed agreement, the RRGP resource declaration will decrease by 123 aMW and Clark Public Utilities' allocation of BPA power will increase by 123 aMW. Clark Public Utilities' allocation of BPA power under the current BPA power contract, known as its Contract High-Water Mark, is currently 323 aMW. All other things being equal, the agreement would result in a 123 aMW increase in Clark Public Utilities' allocation, up to 446 aMW.

In addition, Clark Public Utilities is encouraging BPA to provide a 100 percent carbon-free product option under the new power contracts that begin in October 2028. BPA's resource portfolio is currently 95 percent carbon-free. Clark Public Utilities and other BPA customer utilities have asked BPA to provide an option for a 100 percent carbon-free product. Utilities interested in a 100 percent carbon-free product would most likely pay a slightly higher rate to BPA. Such a product would immediately increase Clark Public Utilities' renewable energy by 5 percent.

Additional Renewable Resources

In October 2021, Clark Public Utilities signed a term sheet that is expected to lead to a power purchase agreement (PPA) with Pend Oreille Public Utility District for the entire output of the Box Canyon Hydroelectric Project (Box Canyon). The PPA would add additional hydro generation to Clark Public Utilities' resource portfolio beginning in 2026. The generation would be 100 percent carbon-free and would be included as "renewable" energy in Clark Public Utilities' second CEIP. Average generation from Box Canyon is expected to be 50 aMW, equal to approximately 9 percent of projected 2026 retail load. Adding more hydro generation to the resource portfolio will allow us to displace the RRGP plant more often, especially during spring runoff. Reductions in RRGP generation will reduce local pollutants.

Additional Non-Emitting Resources

CETA requires carbon-free resources be either renewable, such as hydro, solar and wind or non-emitting, such as nuclear. In 2021 Clark Public Utilities signed a non-binding letter of intent with a Small Modular Reactor (SMR) developer and has been exploring the potential to add generation from SMRs to its resource portfolio beginning in 2030. The generation would be 100 percent carbon-free and would be included as "non-emitting" energy in Clark Public Utilities' third CEIP. The SMRs under consideration are also designed to work with renewables including being able to ramp up power quickly enough to meet high evening demand when solar generation ramps down. In addition, adding more non-emitting generation to the resource portfolio will allow us to displace the RRGP plant more often. Reductions in RRGP generation will reduce local pollutants.

² Off-Peak hours is a defined period for energy transactions that consist of energy delivered during the hours ending 0100-0600 and 2300-2400 for Monday through Saturday and all 24 hours on Sundays and certain Federal Holidays delineated by the North American Electric Reliability Council. Off-peak can also generally refer to those hours during a day when loads are at their lowest.

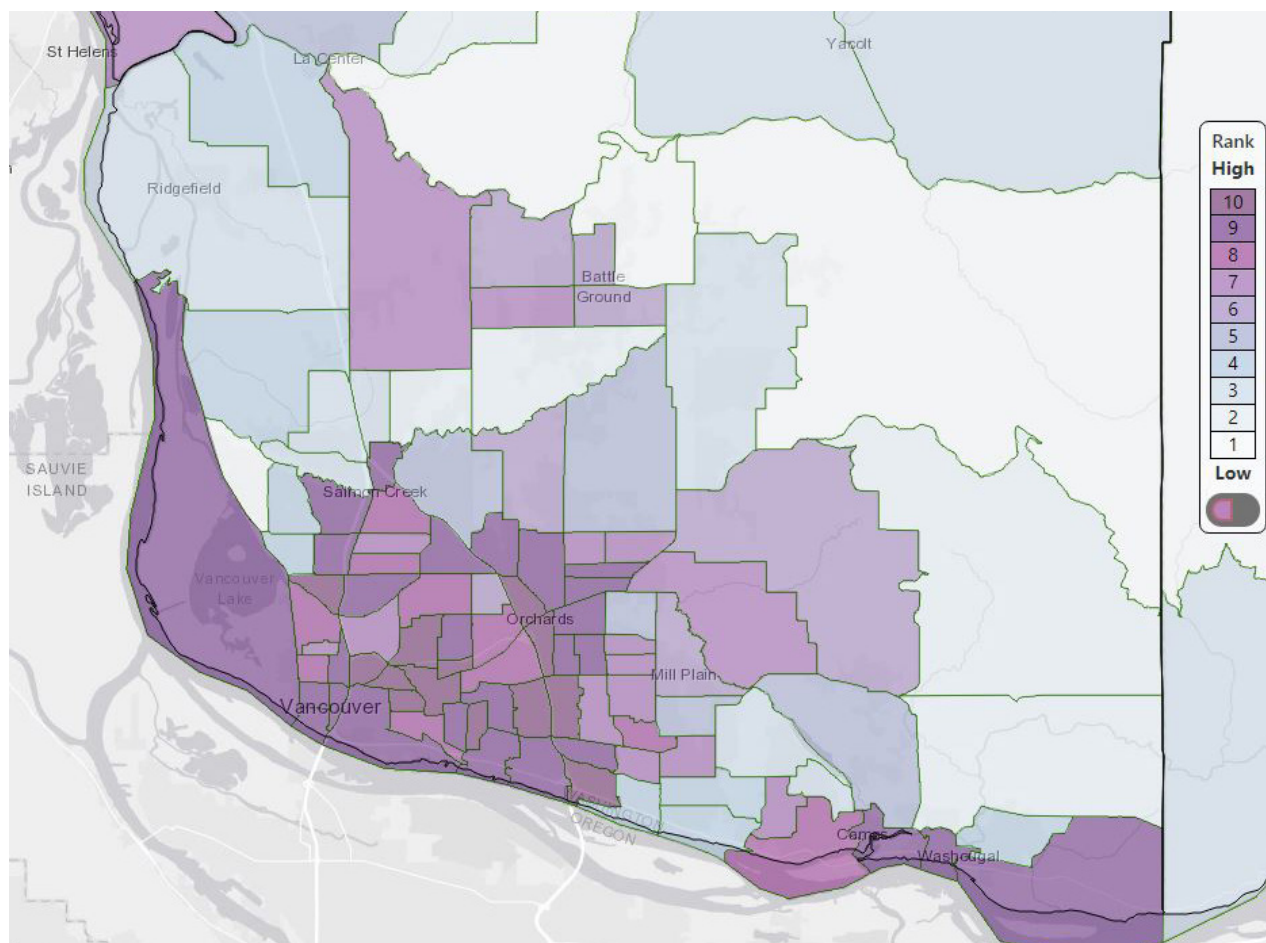


Highly Impacted Communities:

The Washington Department of Health designates Highly Impacted Communities (HIC) as those ranking 9 or 10 on the [Environmental Health Disparities \(EHD\) map](#). Rankings are determined by the Department of Health on cumulative impact analyses by census tract. There are 40 census tracts within Clark County that meet this designation.

Census Tract (enter 11 digit FIPS code)	County	Tribal Lands (Yes/No)	Health Disparities Topic Rank
53011041005	Clark	No	9
53011041110	Clark	No	10
53011041007	Clark	No	10
53011041600	Clark	No	10
53011040904	Clark	No	9
53011041201	Clark	No	9
53011041206	Clark	No	10
53011041309	Clark	No	10
53011041700	Clark	No	10
53011041800	Clark	No	10
53011041900	Clark	No	9
53011042300	Clark	No	9
53011040808	Clark	No	9
53011041112	Clark	No	9
53011041111	Clark	No	10
53011041331	Clark	No	9
53011041330	Clark	No	9
53011040707	Clark	No	9
53011042400	Clark	No	9
53011041010	Clark	No	9
53011040411	Clark	No	9
53011042500	Clark	No	9
53011042600	Clark	No	9
53011042700	Clark	No	10
53011042900	Clark	No	9
53011043000	Clark	No	10
53011043100	Clark	No	9
53011041009	Clark	No	9
53011041322	Clark	No	9
53011041313	Clark	No	10
53011041312	Clark	No	9
53011040507	Clark	No	9
53011040509	Clark	No	9
53011041500	Clark	No	9
53011040706	Clark	No	9
53011041205	Clark	No	9
53011040703	Clark	No	9
53011041104	Clark	No	10
53011041317	Clark	No	10
53011040806	Clark	No	9

HIGHLY IMPACTED COMMUNITIES MAP



Vulnerable Populations:

CETA defines vulnerable populations (VP) as “communities that experience disproportionate cumulative risk from environmental burdens due to variety of factors, including socioeconomic factors and unemployment.”

Clark Public Utilities will focus on assisting customers defined as having a high “energy burden” that spend 6 percent or more of household income on utility bills and are in the most need of utility bill assistance. Future CEIP’s will focus on additional factors.

Clark Public Utilities partnered with Empower Dataworks to perform an analysis and identify energy burdened customer populations. That work resulted in the identification of 18,153 households in Clark County that meet the energy burdened definition. Over the next four years Clark Public Utilities will work to provide targeted bill assistance and energy conservation programs to identified households.

Factors	Details	Source	Date Last Updated	Approximate number of households
Energy burden	> 6% of household income spent on energy bills	Empower Dataworks dashboard	2021	18,153

Forecast of Impacts:

Clark Public Utilities has identified specific utility actions, as well as customer benefit indicators, that will serve as a roadmap to ensure there is an equitable transition to our clean energy future.

Also included in this effort was the development of specific "equity areas" related to the different utility services and operations that we will focus on to help ensure this equitable transition. Much of the work noted in the 2022-2025 CEIP includes the development of targeted energy assistance and energy conservation programs aimed to assist our customers that are in the most need of assistance. These efforts will focus on energy burdened customers, as well as customers who reside in highly impacted communities as identified using the WA Department of Health Environmental and Health Disparities mapping tool.

The table below summarizes the distribution of energy and non-energy costs and benefits strategy:

Category	Indicator	Details	Source	Last Updated
Energy Benefits	Customer participation rates in utility programs and services; energy conservation programs, renewable energy programs, and electric vehicle programs.	Use internal utility program data, along with, the vulnerable population customer dashboard developed by Empower Dataworks.	Utility data	2021
Non-energy Benefits	Customer awareness of utility programs.	Use internal survey results combined with proprietary and external survey data.	Utility data and third-party data	2021
Environment and Public Health	Electric vehicle (EV) registrations and percentage of above-code new construction.	Use WA Dept. of Licensing EV registration data. Use Clark County permit data combined with internal utility data related to new construction programs.	Utility data and third-party data	2021
Reduction of Burdens	The percentage and volume of customers who spend 6% or more of their household income on energy bills.	Use vulnerable population customer dashboard developed by Empower Dataworks, as well as internal utility data.	Utility data and third-party data	2021
Public Health	Health and comfort of utility customers by census tract.	Use utility data and the Dept. of Health EHD map.	Utility data and third-party data	2021
Resiliency	Number of outages in utility census tracts.	Use SAIDI and CAIDI data geolocated across our service territory. Overlay utility data with the Dept. of Health EHD map.	Utility data and WA Dept. of Health data.	2021

Customer Benefit Indicator Table:

Clark Public Utilities engaged with over 30 local, community-based non-profit groups focused on low and limited income populations to develop our Customer Benefit Indicator list. Each customer benefit indicator has an associated “equity area” that describes a service or area of operations related to Clark Public Utilities. The program and impact column for each indicator describes the tools and programs Clark Public Utilities will use to gauge progress in meeting the equitable transition mandates within CETA.

Equity Area	Indicator	Program & Impact
Access to Clean Energy	Participation Rates: -Conservation programs -EV programs -Bill assistance programs -Net Metering	Measure program participation across all conservation/EV/assistance/solar programs and develop strategies to increase rates.
Community Engagement	Customer Awareness of Utility Programs	Measure awareness metrics from customer surveys (proprietary and industry) and develop strategies to increase awareness.
Community Improvement	Registered Clark County EV's and energy efficient new construction	Track EV registrations from WA DOL and participation rates in New Construction Programs (single-family & multifamily).
Reliability	Outage Information by Census Tract	Track outage data using the WA DOH map for Clark County census tracts.
Energy Burden / Affordability	-Customers who pay 6% or more of income on energy expenses -Total dollar amount of customer bills that exceeds 6% of income	Track Energy Burdened customers and develop strategies to reduce the number of customers that are burdened.
Non-Energy Benefits	Impact on health and comfort	Number of VP/HIC customers served by programs that improve indoor air quality or temperature.

Long-Term Plans:

This CEIP is consistent with Clark Public Utilities' 2021 Integrated Resource Plan (IRP). This CEIP is also consistent with the Clean Energy Action Plan (CEAP) included in the 2021 IRP.

Consistent with the CEAP, Clark Public Utilities is taking the following actions:

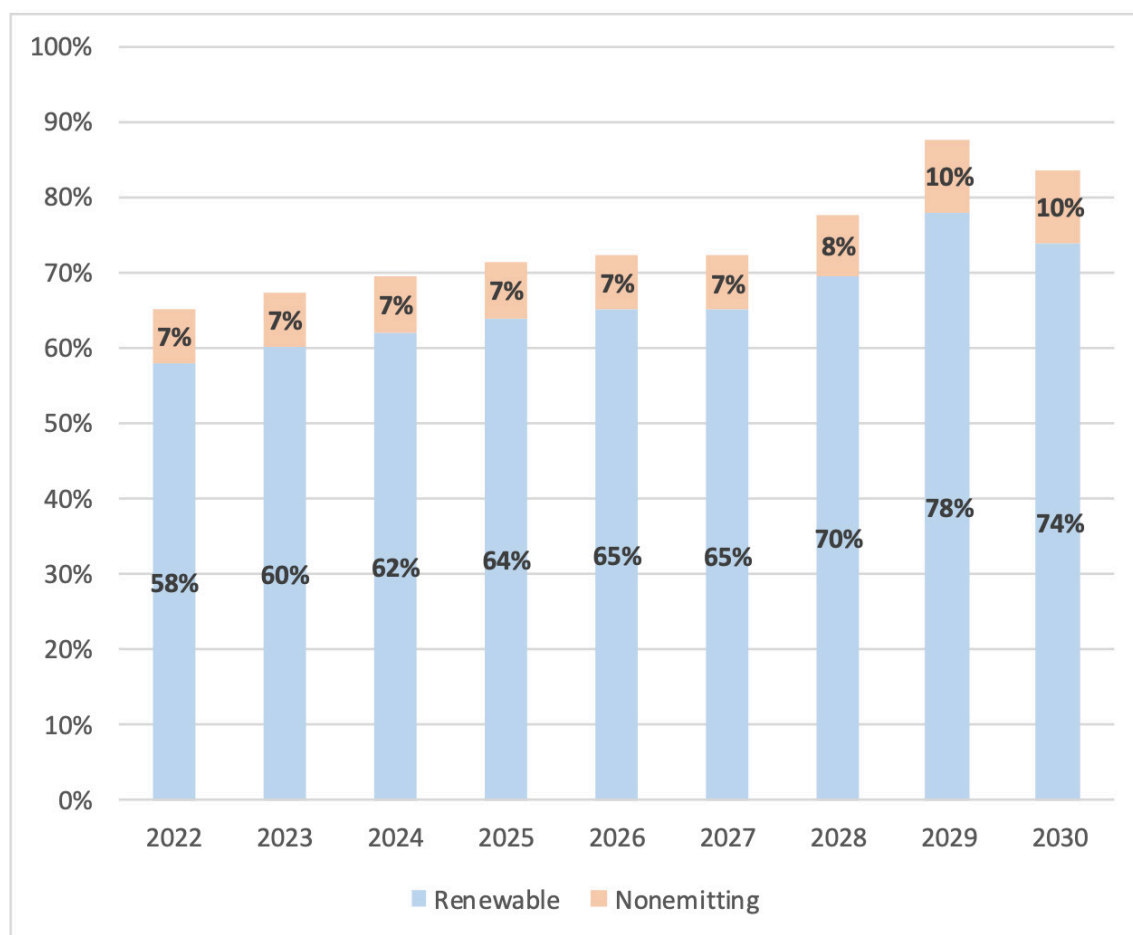
- 1 **Energy Efficiency:** Clark Public Utilities will acquire cost-effective conservation consistent with NWPCC models and Clark Public Utilities' 2021 Conservation Potential Assessment (CPA). Clark Public Utilities' 2021 CPA shows cost-effective 2-year (2022-23) energy savings of 9.37 aMW, 4-year savings of 17.91 aMW, 10-year savings of 50.07 aMW and 20-year savings of 92.20 aMW. Clark Public Utilities will endeavor to meet or exceed the targets included in the 2021 CPA.
- 2 **BPA Power:** Clark Public Utilities is purchasing all BPA Tier 1 power made available to us under the current BPA power contract that expires September 30, 2028 and is taking steps necessary to purchase all power made available under the next BPA contract that begins October 1, 2028. Clark Public Utilities has been working with BPA to come to an agreement that will allow us to reduce the amount of RRGP generation that is dedicated to serve load under the post-2028 BPA power contract. Under the proposed agreement, the RRGP resource declaration will decrease by 123 aMW and Clark Public Utilities' allocation of BPA power will increase by 123 aMW. In addition, Clark Public Utilities is encouraging BPA to provide a 100 percent carbon-free product option under the post-2028 power contracts. Such a product would immediately increase Clark Public Utilities' renewable energy by 5 percent.
- 3 **Small Modular Reactors:** In 2021 Clark Public Utilities signed a non-binding letter of intent with a Small Modular Reactor developer and has been exploring the potential to add generation from SMRs to its resource portfolio beginning in 2030. The generation would be 100 percent carbon-free and would be included as "non-emitting" energy in Clark Public Utilities' third CEIP.
- 4 **River Road Generating Plant Operations:** In 2021 Clark Public Utilities hired EES Consulting/GDS Associates to develop a RRGP Operational Flexibility Report. Based on the report, which showed that plant upgrades would result in an increase in plant capacity and reductions in carbon emissions and power costs, Clark Public Utilities is planning to upgrade the RRGP with the new equipment in 2023. The new equipment will result in a lower heat rate when operating at base load generation and allow plant generation to be ramped down from its base generating level to a minimum operating level near 95 MW and replace plant generation with renewable generation (hydro, wind or solar) when it is economic to do so. The reduction in heat rate when operating baseload generation will result in less gas consumption on a per MWh basis and lower emissions.
- 5 **Demand Response:** Based on the results of its 2021 Demand Response Potential Assessment (DRPA), Clark Public Utilities will increase its efforts to explore the Demand Response measures identified in the DRPA. Specifically, Clark Public Utilities will survey customers to validate voluntary and mandatory DR program participation and incentive levels, research DR program designs and implementation costs, explore technologies that enable DR programs and begin designing and launching pilot DR programs.

- 6 Additional Hydro Generation:** In October 2021 Clark Public Utilities signed a term sheet with Pend Oreille Public Utility District for the entire output of the Box Canyon Hydroelectric Project. Box Canyon would add 50 aMW of additional hydro generation to Clark Public Utilities' resource portfolio beginning in 2026. The generation would be 100 percent carbon-free and would be included as "renewable" energy in Clark Public Utilities' second CEIP.
- 7 Renewable Distributed Generation:** Clark Public Utilities currently operates 319 kW of installed community solar sited within the county. In 2019, the Board of Commissioners allocated 5%, approximately 15 kW, of the community solar array to the utility low-income program, Operation Warm Heart. This design change allowed for many members of our most vulnerable populations to realize the benefit of local, renewable energy resources. Clark Public Utilities is currently exploring additional opportunities that will allow for limited and low-income customers to participate in renewable energy programs and projects. Clark Public Utilities has engaged governmental agencies located in the county in these conversations.
- 8 Electric Vehicle Programs:** In March 2021, Clark Public Utilities launched the Transportation Electrification Plan (TEP). Under the TEP all residential customers are eligible for a \$500 rebate for the installation of a connected, Energy Star rated, Level II EV charger and a \$100 rebate for the installation of a non-connected Level II charger. Limited income customers are eligible for a rebate of up to \$2,000 for the purchase and Clark County registration of an EV with a purchase price of less than \$20,000. The plan also includes an Electric Vehicle Grant Opportunity (EV-GO) through which local and state governmental agencies, non-profit organizations and municipalities can apply for grants to cover up to 50% of the cost of installing EV charging equipment including site preparation and electric service upgrades. Clark Public Utilities will continue to explore opportunities to encourage the installation of EV charging equipment through the TEP. There is a statutory limit of $\frac{1}{4}$ of 1 percent of Clark Public Utilities' retail revenue requirement, placing a ceiling on available funds.

Projected Renewable and Non-Emitting Resources

Clark Public Utilities' projected renewable and non-emitting resources are shown below as percentages of retail load.

FIGURE 6
2022-30 PROJECTED RENEWABLE AND NON-EMITTING RESOURCES



The projections shown above are based on Clark Public Utilities' current resource portfolio and the assumption that our allocation of BPA power will increase by 123 aMW. The renewable percentage increases from 65 to 70 percent between 2027 and 2028 because the assumed increase in the BPA allocation begins in October 2028. The renewable percentage increases to 78 percent in 2029 because 2029 is the first full year with the increased BPA allocation. The renewable percentage decreases to 74 percent in 2030 because the Combine Hills II wind project expires at the end of 2029. However, as noted above, we are currently exploring the potential to add SMRs to the resource mix beginning in 2030 and the output from an existing hydro project beginning in 2026. Either of these additions to our resource portfolio would more than make up for the loss of Combine Hills II from a non-emitting resource perspective. The renewable percentages shown above assume that BPA power is 95 percent renewable and non-emitting in all years.

Reducing Risks to Vulnerable Populations and Highly Impacted Communities

Clark Public Utilities has a long history of implementing successful conservation and energy efficiency initiatives. These programs provide all customers the opportunity to participate and enjoy benefits including lower costs and increased comfort. Conservation and energy efficiency programs of all scales help keep rates low for all customers, including vulnerable populations and customers in highly impacted communities. Incentives are available for many measures to help offset costs. Additionally, the utility offers low interest loans for qualifying energy efficient upgrades to customer homes.

The utility has long pursued all cost-effective conservation and associated peak reduction programs, and will continue consistent with Northwest Power and Conservation Council models and Clark Public Utilities' bi-annual Conservation Potential Assessments.

Additionally, Clark Public Utilities offers bill assistance and energy efficiency programs to low and limited income customers, many unique to the industry, including:

Low Income Home Energy Assistance Program (LIHEAP): Clark Public Utilities partners with Clark County to administer the LIHEAP program for all residents, regardless of heating fuel type.

Senior Rate Credit: Customers age 62 and over who have lived in Clark County at least one year may qualify for a credit based on the January through April billings. Annual household income limits apply.

Operation Warm Heart: An income-based, donation-funded program that provides grants to customers with electric heat who are in financial crisis and may not qualify for other forms of energy assistance.

Low Income Weatherization Program: A partnership with Clark County to offer weatherization and ductless heat pump installations to low-income customers. The program is available to owner-occupied and rental homes, including manufactured homes, if income guidelines are met.

Limited Income Used Electric Vehicle Program: Rebate program providing \$2,000 or \$1,000, depending on household income level, for the purchase and Clark County registration of a used EV under \$19,999.

COVID-19 Response Program: Clark Public Utilities' Board of Commissioners directed surplus funds for a pandemic response program to provide past due bill assistance to customers at or below 225% of the federal poverty level that have also been financially impacted by COVID-19. The program is set to launch in December of 2021, and is planned to extend into the first quarter of 2022.

CETA Program Funds: Clark Public Utilities' Board of Commissioners assigned funds remaining from a retired limited-income thermostat program to be used for future CETA compliance.

Utility Reserve: Surplus funds held in reserve that may be applied toward Resource Adequacy, compliance with CETA, or other uses as determined by the Board of Commissioners.

As the transition to clean energy progresses, these programs will reduce risks to vulnerable populations and highly impacted communities in Clark County through direct financial support including bill assistance programs, and energy efficiency rebates and incentives to offset upgrade costs.

Public Participation:

Clark Public Utilities invited customers to help shape the Clean Energy Implementation Plan through a multi-pronged outreach and participation effort in order to solicit public input through the CEIP process.

Public awareness and promotion of public participation options in development of the CEIP included:

- Engaged with local, community-based non-profit groups focused on low and limited income populations
- CEIP webpage on public website: <http://www.clarkpublicutilities.com/ceip>
- PDF factsheet - hosted on public website, available for digital distribution to customers by staff. English, Spanish and Russian versions available
- Currents customer newsletter (monthly newsletter sent to all customers)

Comment collection and public participation options included:

- Project email (ceip@clarkpud.com) for customers to submit comments
- Web comment form on [CEIP webpage](#)
- Public comments at regularly scheduled Commission meetings

The public participation process was rolled out in stages. We first engaged with local, community-based non-profit organizations focused on low and limited income populations for input on developing Customer Benefit Indicators correlated with Vulnerable Populations and Highly Impacted Communities. Engagement came through a survey of these community partners asking for input on what potential indicators should be included in our CEIP. A draft list of six customer benefit indicators was developed and distributed to more than 30 community partners focused on assisting limited income and in-need populations in Clark County. The feedback was very supportive of the proposed customer benefit indicators.

The feedback showed a focus on:

- Bill assistance programs
- Energy conservation programs
- The need for multi-lingual program materials
- Collaboration across community organizations

Based on this feedback, staff adjusted and honed the benefit indicators into four main equity categories:

- Access to clean energy
- Community engagement
- Electric system reliability
- Affordability

This in turn guided staff to focus customer benefit indicators in these areas. Each of the defined benefit indicators included in this CEIP are influenced by this feedback. Additionally, these focus and equity areas informed our identification of Vulnerable Populations in this CEIP.

Once the draft CEIP was prepared, it was posted for public review on our website. The CEIP informational page on our website additionally contains information around the CEIP. We solicited feedback on the plan from customers through the avenues identified above.

Alternative Compliance Options:

Clark Public Utilities does not intend to use alternative compliance options in 2022-2025.

Resource Adequacy:

Clark Public Utilities includes a planning margin in its incremental electric power requirements calculation as a means to account for resource adequacy (RA). Clark Public Utilities currently uses a 12 percent planning margin as the metric for RA. Clark Public Utilities calculates a deterministic load/resource balance for each month of the year using 112 percent of a one-hour peak load as its obligation. Normal weather drives the peak load forecast.

The Northwest Power Pool (NWPP) is a voluntary organization primarily consisting of major generating utilities serving the Pacific Northwest of the United States and the Pacific Southwest of Canada. The NWPP primarily focuses on utility operations, planning, and operating reserve sharing. From these common interests, in late 2019 RA emerged as a topic of great interest to the NWPP membership and the NWPP began a journey toward developing an RA program for its members. Over the past two years the NWPP developed the Western Resource Adequacy Program (WRAP). Under the WRAP seasonal planning reserve margins will be determined for summer and winter periods and expressed as a percentage of the 1-in-2-year seasonal peak load forecast. Planning for the first non-binding season, winter 2022-23, under the WRAP has begun.

Clark Public Utilities has elected to participate in the non-binding phase of the WRAP. Clark Public Utilities has joined with a group of six other Slice/Block customers that have chosen to participate in the WRAP as a consortium of utilities whose RA requirements will be managed by The Energy Authority. Clark Public Utilities has not yet elected to participate in the binding portion of the WRAP. A decision on whether or not to participate in the binding portion of the program will be made in late 2022.

WRAP participants will plan to a common RA standard. The program will develop common capacity counting methods for generating resources and will allow the pooling of resources to meet the reliability needs of participants and unlock diversity benefits. A centralized entity will administer and execute the RA program on behalf of members.

Incremental Cost:

Clark Public Utilities does not intend to meet compliance requirements using the 2% incremental cost approach.