PacifiCorp's 2022 - 2023 Biennial Conservation Plan for its Washington Service Area

November 1, 2021

PACIFIC POWER
A DIVISION OF PACIFICORP

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Preface

Pursuant to Washington Administrative Code (WAC) 480-109-110 (3), Pacific Power provided a draft of this Biennial Conservation Plan (Plan) to its Demand Side Management (DSM) Advisory Group on October 1, 2021. Members of the DSM Advisory Group, including Commission staff, Public Counsel and the Energy Project provided comments on the draft Plan.

Introduction

Background

Seeking to increase energy conservation in Washington, voters passed Initiative Measure No. 937 (codified as Revised Code of Washington 19.285 and WAC 480-109) in 2006. As a result, each electric utility subject to the jurisdiction of the Washington Utilities and Transportation Commission (Commission) is required to project its cumulative 10-year electric conservation potential and to establish biennial conservation targets.

When determining its 10-year conservation potential, WAC 480-109-100 (2) (a) states that a utility must "…consider all available conservation resources that are cost-effective, reliable, and feasible." The potential must be derived from the utility's most recent Integrated Resource Plan (IRP), including any information learned in its subsequent resource acquisition process, or the utility must document the reasons for any differences. When developing this projection, utilities must use methodologies that are consistent with those used in the Northwest Conservation and Electric Power Plan. The projection must include a list of each measure used in the potential, its unit energy savings value, and the source of that value.[1]

With respect to establishing a biennial conservation target, WAC 480-109-100 (3) states that: a) the biennial conservation target must identify, and quantify in megawatt-hours (MWh), all available conservation that is cost-effective, reliable and feasible, and b) the biennial conservation target must be no lower than a pro rata share of the utility's 10-year conservation potential. In WAC 480-109-060 (19) "pro rata" is defined as "the calculation dividing the utility's projected ten-year conservation potential into five equal proportions to establish the minimum biennial conservation target."

In compliance with these requirements, the Company provides this Biennial Conservation Plan and requests that the Commission approve the 10-year conservation potential, the Energy Independence Act (EIA) Target and the EIA Penalty Threshold established in this Plan.

Types of Conservation Included in the 10-Year Forecast

WAC 480-109-100 (1) (b) establishes six types of conservation for consideration in establishing a conservation forecast:

1. End-use efficiency.
2. Behavioral programs.
3. High efficiency cogeneration.
4. Production efficiency.

[1] WAC 480-109-100 (2) (a) through (c).

5. Distribution efficiency; and
6. Market transformation.

The Company's method for forecasting the potential for each of the above types of conservation is described below.

End-Use Efficiency, Behavioral Program, and Market Transformation

The April 2019 passage of Senate Bill 5116, Clean Energy Transformation Act (CETA) required certain components, such as the social cost of carbon to be included in the modeling of resource options for Washington in the IRP process. PacifiCorp established their target using the CETA compliant preferred portfolio, PO2-MM_CETA[2].

The conservation potential in PO2-MM-CETA was informed by the energy efficiency potential identified in PacifiCorp's *Demand-Side Resource Potential Assessment for 2021-2040* (Conservation Potential Assessment, or CPA), performed by Applied Energy Group, using methodologies consistent with those used by the Northwest Power and Conservation Council (Council) and representing opportunities specific to the Company's Washington service area.[3] The amount of cost-effective, reliable and feasible conservation identified in PO2-MM-CETA encompasses three of the six types of conservation: end-use efficiency, behavioral programs,[4] and market transformation.[5]

Efficiency opportunities from waste heat-to-power and regenerative technologies were included in the 2021 CPA assessment of end-use efficiency. To the extent they are cost effective, they are included in the PO2-MM-CETA portfolio selections.

High-Efficiency Cogeneration

The potential for high-efficiency cogeneration was derived from PacifiCorp's *Private Generation Long-Term Resource Assessment (2021-2040)* (Private Generation Study), performed by Navigant Consulting, Inc.(now known as Guidehouse Consulting)[6] The Private Generation Study is an economic assessment providing forecasts of projected penetration levels of private generation resources within PacifiCorp's service areas through 2040, including a Washington-specific assessment of high-efficiency cogeneration. The Private Generation Study also identified the levelized costs for these resources. CETA focuses on low carbon or non-emitting resources and requires the social cost of carbon be added when considering the economics of emitting resources. To align the analysis of high efficiency co-generation resources, the private generation study costs were increased for two adders, each applied separately; a) social cost of carbon consistent with the

[2] Information on IRP portfolios, including the preferred portfolio, PO2-MM-CETA and underlying assumptions can be found in the 2021 IRP Volume 1 – Chapters 8 and 9.
[3] The 2021 Conservation Potential Assessment and all previous studies are available on the Company's website: https://www.pacificorp.com/energy/integrated-resource-plan/support.html
[4] Because savings from behavioral programs, such as PacifiCorp's Home Energy Reports (HER) program, are already reflected in actual and forecasted sales, IRP selections include only behavioral program savings incremental to current program achievements.
[5] Savings from market transformation are included in the Council's assumption that 85 percent of energy efficiency potential is achievable over 20 years, an assumption that PacifiCorp uses in its CPA.
[6] The Private Generation study is available on the Company's website: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2021-irp/2021-irp-support-and-studies/PacifiCorp_2021_IRP_PG_Resource_Assessment.pdf

process curves used in the IRP and b) the use of renewable natural gas. When the adders were applied, the levelized costs exceed the highest annual cost used in the selection for energy efficiency resources. As a result, no high-efficiency co-generation was added to the 2022-2031 conservation forecast.

Production Efficiency

The analysis for production efficiency for this biennial period included an updated assessment of opportunities and economics for the two gas fired generation plants, Chehalis and Hermiston, fully or partially allocated to Washington according the West Control Area Inter-Jurisdictional Allocation Methodology (WCA) in place during prior biennial periods. WCA was replaced by the Washington Inter-Jurisdictional Allocation Methodology (WIJAM) on January 1, 2021. Opportunities at coal fired plants allocated to Washington were not considered in this period since they will be removed from the allocation at the end of 2025 per CETA. The energy engineering studies performed at these plants in 2011 were updated by the same firm, Cascade Energy Engineering. The updated energy savings and costs were then run through the economic model specific to generation investments. For Chehalis, results were below the thresholds necessary to secure funding and the projects will not be pursued. For Hermiston, the air compressor and lighting projects pass initial economic screening but require analysis and approval by the joint owner using their specific investment criteria and modeling. The projects are on the Q4 joint owner meeting agenda in December, but a joint owner decision is not expected prior to the end of 2021 and as a result, the Company is not forecasting any cost-effective, reliable and feasible production efficiency during the 2022-2031 period, and thus, no savings from production efficiency are included in the Company's 2022-2023 Biennial Conservation Target. Assessment of production efficiency in future biennial periods will be based on plants allocated to Washington using the WIJAM methodology effective as Jan 1, 2021.

Distribution Efficiency

Distribution efficiency in this report builds upon the Company's migration to the new CYME[7] distribution analysis software, projects completed and the on-going process of updating the CYME distribution analysis model with actual field measurements. Throughout the year, and especially as scheduled planning studies are performed, connectivity corrections and equipment ratings and settings are being researched, verified and input. This process competes for time from engineers performing other routine work. The combination of CYME and updated model information will enable more robust analyses of complex scenarios and the assessment of cost-effective, efficiency projects on the distribution system such as Volt Amperes Reactive (VAR) reduction.

During 2022-2023 the Company will use the CYME model to assess energy efficiency opportunities in Washington's approximately 142 distribution circuits where VAR flow is high enough to cause voltage violations, seasonally high enough to create operational issues, or bring a circuit's average power factor below 0.95 lagging. Circuits with these characteristics offer the best opportunity for cost effective VAR reduction, although detailed analysis is required. Cost effectiveness for any potential project will be assessed with tools consistent with financial analysis used to support recovery of other distribution system investments.

[7] CYME is a Power Engineering software program provided by EATON

The Company used the average energy savings from the three completed projects that generated energy savings to inform a forecast for distribution efficiency of 165 MWh for the 2022-2023 biennial period. The total is split between the two years and added to the target. The approach was shared with the DSM Advisory Group during the target setting process.

Ahead of the next biennial period, the Company proposes the following approach and schedule to identify opportunities to inform a multi-year forecast.

- Using CYME, screen all circuits with less than 0.95 power factor for volt VAR opportunities by Oct 1, 2022.[8] Provide list of circuits within the range in the 2023 annual conservation report due in draft by 10-15 and final 11-15.
- Using CYME, conduct detailed analysis on circuits within range in prioritized manner based on circuit total annual MWh usage Feb 1, 2023.
- Estimate costs of implementation and conduct economic analysis by May 1, 2023.
- Provide forecasted costs and savings by year for 2024 -2032 by July 1, 2023.

Overview of 2022-2031 Conservation Forecast & 2022-2023 Targets

Collectively, the analyses described above, and in greater detail later in this Plan, form the basis of the 10-year cumulative conservation potential available in PacifiCorp's Washington service area before applying adjustments to account for updates since the time of the analysis. These adjustments are described later in this Plan and are detailed in Appendix 1. The 10-year cumulative conservation potential deemed cost-effective, reliable, and feasible in PacifiCorp's Washington service area is 509,954 MWh, as shown in Table 1.

Table 1. Cumulative 2022-2031 Conservation Potential by Type

Conservation category	10 - Year Cumulative Potential (MWh at generator)
P02-MM-CETA Selections (End Use Efficiency & Market Transformation)	478,864
Energy Efficiency Adjustments*	26,926
High Efficiency Co-Generation	-
Distribution Efficiency	165
Production Efficiency	-
Total	**505,954**

* Includes existing behavioral programs, and measure-level adjustments based on updated information

To establish a biennial conservation target, consistent with WAC 480-109-100 (3), the Company identified all available conservation that is cost-effective, reliable and feasible for the 2022-2031 period. This amount, 101,191 MWh, is the pro-rata share of the 10-year forecast which is larger than the two-year sum of 76,373 MWh,[9] and thus satisfies the requirement of WAC 480-109-100

[8] Over the last planning cycle (five years), approximately 30% (or 44) circuits of the 142 circuits have shown some combination of voltage violations and/or lagging power factor and/or operational issues.
[9] This represents sum of 2022 and 2023 from Table 3.

(3) (b). The identified 2022-2023 level of conservation is then adjusted, per Commission guidance described later in this Plan, to develop Pacific Power's EIA Penalty Threshold of 93,901 MWh, as shown in Table 2.

Table 2 - 2022-2023 EIA Target and EIA Penalty Threshold

Category	MWh at Gen	MWh at site
Pro-Rata Share of 10-year conservation potential	101,191	94,210
EIA Target	**101,191**	**94,210**
Decoupling threshold	5,060	4,711
Total Utility Conservation Goal	**106,250**	**98,921**
Excluded Programs (NEEA)	**(7,290)**	**(6,774)**
Utility Specific Conservation Goal	**98,960**	**92,147**
EIA Penalty Threshold (EIA Target minus NEEA savings)	**93,901**	**87,436**

Conservation forecast and Clean Energy Implementation Plan (CEIP) targets

CETA requires a four-year conservation target (2022-2025) and an intermediate target (2022-2023). The IRP preferred portfolio with adjustments identified cost-effective, reliable, and feasible conservation from 2022 through 2031 for the EIA target. Pacific Power proposes to use the same forecast to draft specific targets for the CEIP, as follows:

- 2022-2023 Target will be provided with Plan on November 1.
- 2024-2025, use additional two years of conservation pro-rata share, plus adders for decoupling. Update through 2023 Plan process.

Budget and Savings by Program

The Company's 2022-2023 DSM Business Plan is provided as Appendix 2 to this report. The DSM Business Plan contains forecasted savings and expenditures from the Company's existing programs as well as information on adaptive management strategies, pilots, outreach, and evaluation efforts for the 2022-2023 period. The DSM Business Plan also provides cost-effectiveness results in support of the Company's direction and program strategies. The Company may add programs or make changes to existing programs as filed tariff attachments or as revisions to the business plan during the 2022-2023 biennium under the adaptive management program delivery structure, which includes consultation with the Company's DSM Advisory Group. Forecasted savings and budgets are based on the best information available at the time of this filing; a small variance between planned and actual savings and spending is expected, given uncertainty in customer participation levels in the programs during the biennium period and uncertainty related to the COVID-19 pandemic and supply chain constraints that are affecting energy efficiency equipment and the availability of installers. As required by WAC 480-109-

120(2) the Company will file an Annual Conservation Plan for 2023 on or before November 15, 2022.

Excess Conservation

WAC 480-109-100 (3) (c) (i) states that "cost-effective conservation achieved in excess of a biennial conservation target may be used to meet up to twenty percent of each of the immediately subsequent two biennial targets." And that "[t]he presence of excess conservation does not relieve a utility of its obligation to pursue the level of conservation in its biennial target."

As stated in Order 02 in Docket UE-171092, "Pacific Power & Light Company achieved 2,718 megawatt-hours of excess conservation during the 2016-2017 biennium and 2,336 megawatt-hours of excess conservation during the 2018-2019 biennium." At the time of this filing, final achievement from 2020-2021 is expected to be less than the Commission approved target as the result of the COVID-19 pandemic and supply chain issues. The Company's 2021 Annual Conservation Plan indicates a forecast of 79,753 MWh of conservation, approximately 16 percent less than Commission approved EIA penalty threshold. Pacific Power expects to utilize all available excess conservation in the 2020-2021 biennial period as discussed with the DSM Advisory Group.

Stakeholder Engagement

Pacific Power appreciates the collaboration and guidance of stakeholders, in particular its DSM Advisory Group, in the development of the conservation forecast and biennial conservation target established in this Plan. A timeline of stakeholder meetings and topics applicable to the biennial planning process is provided below along with IRP public input meetings[10] where DSM related topics were on the agenda. These meetings, coupled with email communications in which supporting information was shared, were pivotal in helping the Company develop the conservation forecast and biennial target. Additional detail on how the Company complied with stakeholder engagement requirements established in WAC 480-109-110 and Attachment 1 to Order 01 in Docket UE-190908 is provided in the "Plan Compliance Information" section later in this document.

January 10, 2020 meeting with commission staff

- Conservation Potential Assessment and DSM Modeling overview

March 31, 2020 email to DSM Advisory group

- COVID-19 – general company
- COVID-19 – DSM impacts
- Low-income savings potential in CPA
- Funding for Northwest Energy Efficiency Alliance (NEEA) multi-family stock assessment
- Heat pump water heater activity

May 15, 2020 DSM Advisory Group meeting

- COVID-19 impacts

[10] Information on all 2021 IRP public meetings is available at https://www.pacificorp.com/energy/integrated-resource-plan/public-input-process.html.

- Program change(s) preview
- Feedback on May 1 conservation report drafts
- Low-income assessment in next CPA – recommended analysis option
- Heat pump water heaters – additional data

September 21, 2020 DSM Advisory Group meeting

- Current forecast
- COVID-19 updates
- Program changes for January 2021
- 2021 Annual Conservation Plan
- Non-energy impacts
- Collection rate review

November 30, 2020 DSM Advisory Group meeting

- Actuals/forecast
- COVID-19 updates
- VAR reduction study (CYME 4 circuits)
- Non-energy impact (NEI) work plan & details
- HER expansion
- Petition for excess conservation – reconnect

December 21, 2020 DSM Advisory Group meeting

- Actuals/current forecast
- Review of the 2020 communications and outreach plan
- Costs & financial analysis for VOLT/VAR reduction
- NEI update

April 13, 2021 meeting with commission staff

- 2020 results compared with original 2020 forecast
- April 2021 forecast
- December 2020 forecast for reference
- Adaptive management overview

April 28, 2021 DSM Advisory Group meeting

- 2020 results and 2021 forecast. Comparison with two-year target.
- Adaptive management to help close current biennial period shortfall
- 2022-2023 planning /target setting
    - Non-energy impact analysis perfromed by third party consultant DNVGL
    - Approaches for HER
- System Benefit Charge review
- Follow-ups from last meeting
- Meeting dates for balance of 2021

June 17, 2021 DSM Advisory Group meeting

- 2022-2023 planning /target setting

    - NEEA
    - Production Efficiency
    - Distribution Efficiency
    - High efficiency co-generation
- 2020-2021 conditions list
- Tariffs
- Return to in-home activities
- Clean Buildings (House Bill 1257) updates

July 22, 2021 DSM Advisory Group meeting

- Review of and feedback on draft Customer Benefit Indicators (CBIs)
- Initial look at 2021 IRP CETA compliant draft portfolio energy efficiency selections
- NEI update
- Follow-ups from last meeting

September 2, 2021 DSM Advisory Group meeting

- Energy efficiency selections from 2021 IRP CETA compliant preferred portfolio
- Energy efficiency adjustments
- Updated NEEA forecast
- Proposed target
- Competitive procurement framework for conservation and efficiency resources – draft
- Demand Response
- Other updates
    - Forecast
    - CETA
- Scheduling note: Meeting originally scheduled for August 23. Re-scheduled to August 31 and then to September 2 to align with final IRP public input meeting schedule and key stakeholder availability.

October 12, 2021 DSM Advisory Group meeting

- Walk through these specific items in the biennial conservation plan:
    - NEI
    - Competitive Procurement Framework
        - (and our plan to extend three of the contracts)
- CEIP utility actions/program changes
- Other updates
    - Forecast
    - CETA/CEIP

In addition to DSM Advisory Group meetings, 20 public input meeting for the 2021 IRP were held in 2020 and 2021 prior to the filing on the IRP on September 1, 2021. There were four meetings dedicated to the CPA. Meeting dates and presentation materials available at

https://www.pacificorp.com/energy/integrated-resource-plan/public-input-process.html.

Eight comments were received from DSM Advisory Group members. Comments and responses are available at:

https://www.pacificorp.com/energy/integrated-resource-plan/comments.html

Conservation Potential and Conservation Targets

10-Year Conservation Potential

The forecast of cost-effective, reliable and feasible conservation for the 2022-2031 period is provided in Table 3. This section describes the process for developing the 10-year potential forecasts for each of the six types of conservation described above and provides a description of the technologies, data collection, processes, procedures, and assumptions used to develop this figure as required by WAC 480-109-120 (1) (b) (iv).

Table 3. 2022-2031 Annual and 10-Year Conservation Forecast

Category	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2022-2031 Cumulative
Adjusted Energy Efficiency	38,752	37,456	44,431	45,631	55,256	54,456	60,636	55,768	60,268	53,136	505,789
High-Efficiency Co-Generation	-	-	-	-	-	-	-	-	-	-	-
Distribution Efficiency	82	83	-	-	-	-	-	-	-	-	165
Production Efficiency	-	-	-	-	-	-	-	-	-	-	-
Total	**38,834**	**37,539**	**44,431**	**45,631**	**55,256**	**54,456**	**60,636**	**55,768**	**60,268**	**53,136**	**505,954**

End-Use Efficiency, Behavioral Program, and Market Transformation

The conservation forecast for end-use efficiency, behavioral programs and market transformation (collectively referred to in this document as energy efficiency) is developed through the following steps:

1. Completion of the 2021 CPA.
2. Economic screening/selection of resources through the 2021 IRP development process.
3. Addition of projected savings from the existing HER (behavioral) program.
4. Identification of adjustments to the 2021 IRP preferred portfolio conservation resource selections based on updates from Regional Technical Forum (RTF) Unit Energy Savings (UES) values.

The 2021 Conservation Potential Assessment

The Company's 2021 CPA, performed by Applied Energy Group (AEG), identifies energy efficiency that is possible (technical potential) and feasible (achievable technical potential), and the 2021 IRP process identifies the share of this potential that is cost-effective (economic achievable technical potential) in the preferred portfolio which must include the social cost of carbon and the non-energy impact adder to be CETA compliant. To estimate the amount of feasible potential that is reliable, the Company uses the Council's assumptions from the 2021 Draft Power

Plan for the proportion of potential is achievable over a 20-year period, typically 85 percent. It is important to note that the Council's achievability assumption extends beyond utility incentive programs:

> The Council assumes that between 85 and 100 percent of all technical potential can be achieved by the end of the plan period (20 years) to determine the achievable technical potential. Finally, through the resource strategy analysis, the Council looks at whether potential conservation measures are economically achievable. This potential is then translated into savings targets, to be achieved from utility programs, market transformation activities of the Northwest Energy Efficiency Alliance (NEEA), and activities outside of programs including market-induced savings and savings from codes and standards (also known as momentum savings).[11]

Because of what the achievable potential captures, the amount of energy efficiency selected by the IRP model is inclusive of savings from market transformation efforts, including those claimed through NEEA. It also includes incremental savings from behavioral programs, to the extent they are cost-effective. Because of the short measure life associated with Pacific Power's existing HER program, the existing impacts are assumed to be reflected in the Company's load forecast and are excluded from the IRP energy efficiency selections. These impacts are added back into the conservation forecast for the purpose of establishing a 10-year conservation forecast and two-year target.

AEG identified energy efficiency potential in the 2021 CPA through the following steps:

1. Perform a market characterization to describe sector-level electricity use for the residential, commercial, industrial, irrigation, and street lighting sectors for the base year of 2018. To perform the market characterization, AEG used results from primary market research conducted by PacifiCorp wherever possible, supplemented by secondary data sources available from regional and national organizations such as the NEEA and the Energy Information Administration.
2. Develop a baseline projection of energy consumption by sector, segment, and end use for 2021 through 2040. building upon the base year characterization performed in step 1 above.
3. Define and characterize energy efficiency measures to be applied to all sectors, segments, and end uses. This work relied heavily on the measure characterization work performed by the RTF and Council staff in the development of the Seventh Power Plan. The 2021 CPA considered 357 unique measures across sectors, which expand to nearly 30,000 permutations when assessed separately by state, vintage, and market segment. Consistent with WAC 480-109-100 (2) (c), a list of each measure used in the potential, its unit energy savings value, and the source of that value are provided in Appendix G to the 2021 CPA.
4. Estimate the potential from the efficiency measures by applying achievability and ramp rate assumptions, based on the Council's methodology.

AEG used its Load Management Analysis and Planning tool (LoadMAP™) version 6.0 to perform the steps above. AEG developed LoadMAP in 2007 and has enhanced it over time, using it for the

[11] Northwest Power and Conservation Council, *2021 Draft Northwest Power Plan* https://www.nwcouncil.org/2021powerplan_estimating-energy-efficiency-potential

Electric Power Research Institute (EPRI) National Potential Study and numerous utility-specific forecasting and potential studies since. The LoadMAP model:

- Incorporates the Council's methodology and the core principles of rigorous end-use models (such as EPRI's Residential End Use Planning System (REEPS) and Commercial End Use Planning System (COMMEND), but in a simplified and more accessible form.
- Includes stock-accounting algorithms that treat older, less efficient appliance/equipment stock separately from newer, more efficient equipment. Equipment is replaced according to the measure life and appliance vintage distributions.
- Balances the competing needs of simplicity and robustness by incorporating important modeling details related to equipment saturations, efficiencies, vintage, and the like, where market data are available, and treats end uses separately to account for varying importance and availability of data resources.
- Isolates new construction from existing equipment and buildings and treats purchase decisions for new construction and existing buildings separately.
- Uses a simple logic for appliance and equipment decisions, rather than complex decision choice algorithms or diffusion assumptions which tend to be difficult to estimate or observe and sometimes produce anomalous results that require calibration or manual adjustment.
- Includes appliance and equipment models customized by end use. For example, the logic for lighting is distinct from refrigerators and freezers.
- Accommodates various levels of segmentation. Analysis can be performed at the sector level (e.g., total residential) or for customized segments within sectors (e.g., housing type or income level).
- Provides forecasts of baseline energy use by sector, segment, end use, and technology for existing and new buildings. It also provides forecasts of total energy use and energy-efficiency savings associated with the various types of potential.

The estimated potential was grouped by net cost of capacity of conserved energy and converted to hourly shapes for modeling in the 2021 IRP process. To simplify the inputs for modeling purposes, measures are grouped into 27 bundles for each state. The prior 2019 IRP bundling methodology grouped measures with a similar levelized cost of energy (LCOE) value on a $ per MWh basis. In the 2019 IRP, PacifiCorp and stakeholders identified "DSM bundling" as a case to be considered in its portfolio development process. As a result, PacifiCorp developed an alternative bundling methodology based on the net cost of capacity ($/kw-yr). Similar to the prior method, measures were grouped into 27 bundles for each state based on their net cost of capacity ranking. Net cost of capacity bundles are calculated using the following formula:

$$Net\ Cost\ of\ Capacity\ (\$/kw-yr) = \frac{\left(LCOE - Energy\ Value^{12}\right) * \left(Load\ Factor * \frac{Hrs}{yr}\right)}{Capacity\ contribution\ * (\frac{MW}{KW})}$$

Measure cost is characterized as the cost of measure from the perspective of the Total Resource Cost (TRC) test which is then levelized over the lifetime of the measure consistent with

[12] The forecasted energy price is based on marginal resource costs, which include potential fuel and emissions costs using the social cost of carbon for the marginal generator or market transaction in a given hour.

methodology used by the Northwest Power and Conservation Council in the 2021 Power Plan.[13] Capacity contributions of measures were calculated for both summer and winter seasons and measures were assessed and binned based on their net cost of capacity in each corresponding season.

Energy Efficiency in the 2021 IRP process

PacifiCorp's 2021 IRP presents the Company's plans to provide reliable and reasonably priced service to its customers. The primary objective of the IRP is to identify the best mix of resources to serve customers in the future, identified through analysis that measures cost and risk. The least-cost, least-risk resource portfolio—defined as the "preferred portfolio"—is the portfolio that can be delivered through specific action items at a reasonable cost and with manageable risks, while considering customer demand for clean energy and ensuring compliance with state and federal regulatory obligations.

PacifiCorp relies on three models in the development and evaluation of resource portfolios.[14]

1. The Plexos Long-Term planning model (LT model) is used to produce unique resource portfolios across a range of different planning cases.
2. Each portfolio is evaluated in the Short-Term model (ST model) to establish system costs for each portfolio over the entire 20-year planning period. The ST model accounts for resource availability and system requirements at an hourly level, producing reliability and resource value outcomes as well as a present-value revenue requirement (PVRR) which serves as the basis for selecting least-cost least-risk portfolios.

   PacifiCorp uses the Plexos Medium-Term schedule (MT model) to perform stochastic risk analysis of the portfolios. A primary function of the MT model is to calculate an optimized risk-adjustment, representing the relative risk of a portfolio under unfavorable stochastic conditions for that portfolio.

PacifiCorp models energy efficiency (also referred to as Class 2 DSM in the IRP) on a comparable basis with supply-side resources in the IRP models, consistent with state IRP standards and guidelines. For resource portfolio development, conservation is structured as a supply curve that provides capacity and energy (based on predetermined hourly load shapes) at a given marginal levelized cost. Levelized costs of Washington energy efficiency resources are adjusted, consistent with the Council's methodology, to account for the following credits:

- Transmission and distribution investment deferral credit
- Stochastic risk reduction credit
- Northwest Power Act 10 percent credit
- NEI credit

Modeling energy efficiency as a resource with hourly impacts and costs levelized over the planning period allows the IRP to directly compare demand-side and supply side options in assessing cost and risk of different portfolio options. The amount of energy efficiency selected by the IRP represents the optimal amount of savings for the Company to pursue based on the best information available at the time of the analysis, recognizing that some savings is likely to be achieved outside

[13] https://www.nwcouncil.org/2021powerplan_cost-effective-methodology

[14] https://www.pacificorp.com/energy/integrated-resource-plan.html. See Chapter 8 of the Company's 2021 IRP for more detailed discussion on how the Plexos LT, ST and MT models are used in the development of PacifiCorp's IRP.

of utility incentive programs (e.g., codes and standards, market transformation), as discussed previously in this Plan.

NEIs

NEIs were expanded in the 2022-2023 target setting process. Similar to prior period, the supply curves from 2021 CPA include NEIs and are a cost credit that lowers the cost of energy efficiency resources in the IRP model. NEIs (primarily from RTF and woodsmoke analyzed by consulting firm ABT, Inc.) coming in through supply curves include:

- Water/wastewater savings (flow reduction measures)
- Avoided replacement (lighting)
- Woodsmoke (heat pumps)

A new NEI, a proxy value was included in the 2022-2023 planning process. This proxy value was added to ALL Washington energy efficiency resources to ensure NEI "additionality" per the terms of the Commission order and recognizing that quantification of the measure specific values described below required time. The proxy reflects the public health benefits of energy efficiency in the Northwest as quantified by the United States Environmental Protection Agency (U.S. EPA).[15] The NEI credit in the IRP model is $29/MWh.

In a parallel effort with the other Washington investor-owned utilities, Pacific Power contracted with (a third party consultant DNVGL to do a meta study (study of studies) of NEIs using their existing data base of approximately 50 studies. The purpose was to expand the of NEIs and measures they are applied to. The meta study consisted of a review of NEI studies applicable to Pacific Power program measures. DNV mapped published NEI values to Pacific Power's measure list and produced values adjusted to reflect differences in economic, climatic and programmatic conditions. The source of the original values ($/kilowatt-hour (kWh), $, project, etc.) was included in the mapping in assist to applying the result values. As a final step, DNV performed a gap analysis of NEIs from DNV database that are assigned to programs and measures in the Pacific Power tracking data to identify areas in which follow-up research is necessary to refine NEI values.

With the NEI proxy value applied to all measures in addition to the specific NEIs on the measures listed above, and reflected in selections, DNV values which are less certain will not be included as an adjustment to the target. DNV values will be refined and used in assessing cost effectiveness for as delivered 2022-2023 results and to inform the distribution of NEIs in our draft CEIP. The U.S. EPA proxy values not included in assessing cost effectiveness for as delivered 2022-2023 results unless benefit cost ratios are below 1.0 when the DNV values are included in addition to the energy benefits.

Adjustments to the Energy Efficiency Potential identified in the 2021 IRP Process used to P02-MM-CETA.

WAC 480-109-100 (2) (b) referring to a utility's 10-year conservation potential, states "This projection must be derived from the utility's most recent IRP, including any information learned in its subsequent resource acquisition process, or the utility must document the reasons for any

[15] https://www.epa.gov/statelocalenergy/public-health-benefits-kwh-energy-efficiency-and-renewable-energy-united-states. Table ES-1, high value of Pacific NW for Uniform EE. Value is 2.8 ¢/kWh in 2017$ grossed up to 2020 dollars to be consistent with the rest of the IRP model assumptions

differences." Accordingly, in developing this projection, the Company assessed the need to adjust IRP energy efficiency selections and identified the following categories of required updates:

- **Energy efficiency opportunities not assessed in the CPA:** Projected savings from existing behavioral programs. The behavioral program forecast is based on the Company's recent expansion and of the treatment and control groups developed for the 2020-2021 biennial period. Cadmus, a third-party evaluator with experience in evaluating home energy report program provided their recommendation that the existing groups should continue to be treated instead of re-randomized. This information was shared with the DSM Advisory Group as part of the target setting process during 2021. The forecast, and associated cost-effectiveness analysis, assumes a two-year measure life and that the savings repeat every two year to ensure projected savings are accurately reflected in the pro-rata calculation.
- Updates to CPA measure savings resulting from updated RTF information: The Company's CPA relied on the most current and applicable data available at the time of the analysis (through January 2018). As part of the analysis to identify PacifiCorp's ten-year conservation potential and biennial conservation target, AEG reviewed updated data sources, including updates to RTF deemed measures. These measure-level updates are described in detail in Appendix 1 to this Plan.

The forecast for energy efficiency (encompassing end-use efficiency, behavioral programs and market transformation), accounting for the above adjustments, is provided in **Table 4.**

Table 4. 2022-2031 Energy Efficiency Forecast – Summary of Adjustments

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2022-2031
Washington - first year EE from P02-MM-CETA	**34,003**	**37,231**	**39,530**	**45,254**	**50,201**	**53,928**	**55,500**	**55,259**	**55,204**	**52,754**	**478,864**
Behavioral Programs (HER)	4,414	(182)	4,414	(182)	4,414	(182)	4,414	(182)	4,414	(182)	21,161
RTF adjustments (total)	335	407	486	558	641	710	721	691	650	564	5,765
Adjusted Energy Efficiency Forecast	**38,752**	**37,456**	**44,431**	**45,631**	**55,256**	**54,456**	**60,636**	**55,768**	**60,268**	**53,136**	**505,789**

High-Efficiency Cogeneration

To support the 2021 IRP process, Navigant Consulting, Inc. (now Guidehouse) prepared the Private Generation Long-Term Resource Assessment (2021-2040) on behalf of PacifiCorp. The potential for high-efficiency cogeneration in Washington is from this study, which is an economic assessment providing forecasts of projected penetration levels of private generation resources within PacifiCorp's service areas through 2040, including a Washington-specific assessment of high-efficiency cogeneration. Inputs and levelized costs specific to Washington high-efficiency cogeneration resources are provided in Appendix C.

WAC 480-109-060 (13) defines high-efficiency cogeneration as "the sequential production of electricity and useful thermal energy from a common fuel source." Two of the resources included in the Navigant study, combined heat and power (CHP) reciprocating engines and CHP micro turbines, meet this definition and were investigated in detail to determine whether any cost-effective, reliable and feasible potential could be identified in Washington for the 2020-2029 period.

CETA focuses on low carbon or non-emitting resources and requires the social cost of carbon be added when considering the economics of emitting resources. To align the analysis of high efficiency co-generation resources with analysis of emitting resources in the IRP, the private generation study costs were increased for two adders, each applied separately; a) social cost of carbon consistent with the process curves used in the IRP and b) the use of renewable natural gas.[16] When the adders were applied, the levelized costs exceed the highest annual cost used in the selection for energy efficiency resources. Information on the adders, resultant costs and comparison with cost of energy efficiency selections was shared at the June 17, 2021 DSM Advisory Group meeting. As a result, no high-efficiency co-generation was added to the 2022-2031 conservation forecast and it was not included in the draft targets shared on September 2, 2021 with the DSM Advisory Group.

Distribution Efficiency

As discussed in previous Pacific Power Plans, the ability to cost-effectively conserve energy through distribution system initiatives is highly dependent on the characteristics of a given utility's system.

Distribution efficiency in this report builds upon the Company's migration to the new CYME distribution analysis software, projects completed and the on-going process of updating the CYME distribution analysis model with actual field measurements. Throughout the year, and especially as scheduled planning studies are performed, connectivity corrections and equipment ratings and settings are being researched, verified and input. This process competes for time from engineers performing other routine work. The combination of CYME and updated model information will enable more robust analyses of complex scenarios and the assessment of cost-effective, efficiency projects on the distribution system such as VAR reduction.

During 2022-2023 the Company will use the CYME model to assess energy efficiency opportunities in Washington's approximately 142 distribution circuits where VAR flow is high enough to cause voltage violations, seasonally high enough to create operational issues, or bring a circuit's average power factor below 0.95 lagging. Circuits with these characteristics offer the best opportunity for cost effective VAR reduction, although detailed analysis is required. Cost effectiveness for any potential project will be assessed with tools consistent with financial analysis used to support recovery of other distribution system investments.

The Company used the average energy savings from the three completed projects that generated energy savings to inform a forecast for distribution efficiency of 165 MWh for the 2022-2023 biennial period. The total is split between the two years and added to the target. The approach was shared with the DSM Advisory Group during the target setting process.

Ahead of the next biennial period, the Company proposes the following approach and schedule to identify opportunities to inform a multi-year forecast.

- Using CYME, screen all circuits with less than 0.95 power factor for volt VAR opportunities by October 1, 2022.
- Provide list of circuits within the range in the 2023 annual conservation report due in draft by 10-15 and final 11-15.

[16] Renewable natural gas (RNG) is not explicitly required by CETA. The RNG adder follows from DSM Advisory Group discussions on this resource during the last biennial period planning process.

- Using CYME, conduct detailed analysis on circuits within range in prioritized manner based on circuit total annual MWh usage February 1, 2023
- Estimate costs of implementation and conduct economic analysis by May 1, 2023.
- Provide forecasted costs and savings by year for 2024 -2032 by July 1, 2023.

Production Efficiency (in non-hydro generation facilities)

Production Efficiency means investments and actions that save electric energy from power consuming equipment and fixtures at an electric generating facility." WAC 480-109-060 (20). Projects need to be in generating facilities allocated to Washington. The facility allocation methodology changed from WCA to WIJAM on January 1, 2021. Facilities allocated to Washington under WCA include:

- Wind: GoodNoe Hills, Marengo I, Marengo II, Leaning Juniper
- Thermal: Jim Bridger, Chehalis, Hermiston, and Colstrip

Detailed studies of opportunities at these plants have been completed in prior periods[17] and a production side cost test model was developed that aligned with the investment criteria for funding projects at plants, including securing joint owner approval and recovering investments through rates. This "production-side" cost test model was presented to the Washington DSM Advisory Group in prior biennial periods and as an Appendix to the Company's DSM Business Plans for the last two biennial periods.

Opportunities at coal fired plants allocated to Washington, Jim Bridger and Colstrip were not considered in this period since they will be removed from the allocation at the end of 2025 per CETA.

The analysis for production efficiency for this biennial period included an updated assessment of opportunities and economics for the two gas fired generation plans, Chehalis and Hermiston, fully or partially allocated to Washington according the WCA allocation methodology in place during prior biennial periods. WCA was replaced by WIJAM on January 1, 2021. The engineering studies performed at these plants in 2011 were updated by the same firm, Cascade Energy Engineering and are included as Appendix 5.

The updated energy savings and costs were then run through the economic model specific to generation investments. For Chehalis, results were below the thresholds necessary to secure funding and the projects will not be pursued. For Hermiston, the air compressor and lighting projects pass initial economic screening but require analysis and approval by the joint owner using their specific investment criteria and modeling. A joint owner decision is not expected prior to the end of 2021 and as a result, the Company is not forecasting any cost-effective, reliable and feasible production efficiency during the 2022-2031 period, and thus, no savings from production efficiency are included in the Company's 2022-2023 Biennial Conservation Target. Assessment of production efficiency in future biennial periods will be based on plants allocated to Washington using the WIJAM methodology effective as Jan 1, 2021.

[17] Starting in 2011 and completed in 2012, Cascade Energy completed studies at seven of the eight non-hydro facilities that serve Washington customers.

2022-2023 EIA Target and Penalty Threshold

Pacific Power's EIA Penalty Threshold for 2022-2023 is 93,901[18] as shown in Table 5. The process of converting the 10-year forecast to a target is described in detail below.

Table 5. 2022-2023 EIA Target and Penalty Threshold

Category	MWh at Gen	MWh at site
Pro-Rata Share of 10-year conservation potential	101,191	94,210
EIA Target	**101,191**	**94,210**
Decoupling threshold	5,060	4,711
Total Utility Conservation Goal	**106,250**	**98,921**
Excluded Programs (NEEA)	**(7,290)**	**(6,774)**
Utility Specific Conservation Goal	**98,960**	**92,147**
EIA Penalty Threshold (EIA Target minus NEEA savings)	**93,901**	**87,436**

Cost-Effective, Reliable and Feasible Conservation

As described in WAC 480-109-100 (3), the biennial conservation target must quantify all available conservation that is cost-effective, reliable and feasible, and be no less than a pro-rata share of the 10-year conservation forecast. As shown in Table 5 above, available conservation that is cost-effective, reliable and feasible for the 2022-2023 period is 101,191 MWh, and is the pro-rata share of the 10-year forecast which is larger than the two-year sum of 76,373 MWh,[19] and thus satisfies the WAC requirement.

Treatment of NEEA Initiatives

The 2018 Statewide Advisory Group report, which recommended how NEEA is treated in the EIA conservation planning process, was filed in Docket UE-171092 and can be found at: https://www.utc.wa.gov/casedocket/2017/171092/docsets. The treatment of NEEA in this plan is consistent with those recommendations.

In preparation for the 2022-2023 biennial target-setting process, Pacific Power (and the other investor-owned utilities) engaged NEEA to provide a savings forecast for the 2022-2023 period using baselines consistent with the Council's Seventh Power Plan. NEEA provided a draft forecast on June 8, 2021 and an updated version on August 13, 2021. Both were shared with the DSM Advisory Group during regular meetings. NEEA outlined the codes and standards that were incorporated into their forecast so that AEG could assess how these codes and standards were treated in the 2021 CPA. This review is similar to prior biennial periods. The review of the current NEEA forecast indicated there was no overlap and no adjustments were necessary. The August 13, 2021 forecast is incorporated into the target.

[18] To remain consistent with the Council's regional power plan, the 10-year potential and two-year target values in this report are shown prior to any net-to-gross adjustment and except for production efficiency, where applicable, include line losses between the installed equipment or customer site and the generation source.
[19] Sum of 2022 and 2023 from Table 3.

NEEA outlined their methodology to align their forecast with the regional work, specifically the draft 2021 Power plan. Specifically, NEEA's forecast.

- Incorporates savings rates and technical assumptions from the RTF approved prior to June 1, 2021.
- In the case where RTF savings rates are not available, the report uses savings rates from the draft 2021 Power Plan.
- If draft 2021 Power plan rates are not available, NEEA calculates savings rates using the 2021 Power Plan baseline (e.g., 2020).

Forecasted savings from NEEA, inclusive of programs and codes and standards initiatives (but excluding "trackable measures"), totaled 7,290 MWh (including line losses) for the 2021-2022 period. Consistent with information provided above, these savings are subtracted from the Company's identified EIA target for the purpose of establishing the EIA Penalty Threshold. NEEA's forecast for the 2021-2022 period is described in additional detail in Appendix 3 to this Plan.

Decoupling Commitment

On September 1, 2016, the Commission issued Order 12 in Docket UE-152253. Section (7)(4) of the Order specifies:

> Pacific Power must increase its annual conservation targets by 2.5 percent for the current 2016-2017 biennium, and by 5 percent per biennium thereafter through the period when decoupling is in effect. The Company's failure to meet its incremental conservation target will be subject to financial penalties.

During development of the 2018-2019 targets, the Company initially applied the five percent adder to the target subject to penalty (after the NEEA deduction). Staff believed it was more appropriate to apply it to the conservation target prior to the NEEA deduction. For the 2022-2023 biennium, the Company is applying the full five percent decoupling adjustment, adding 5,060 MWh (at the generator) based on five percent of the target prior of the NEEA deduction) to the biennial conservation target.

PacifiCorp's 2022-2023 Business Plan

In addition to providing the 10-year conservation potential and the biennial conservation target, WAC rules require utility Biennial Conservation Plans to provide additional detail relating to conservation program implementation outreach, and evaluation. To satisfy the WAC requirements while clearly delineating between target-setting and implementation activities, the Company includes its DSM Business Plan as Appendix 2 to this Plan. The DSM Business Plan includes the following information:

- Biennial program details, biennial program budgets, and cost-effectiveness calculations, consistent with WAC 480-109-120 (1) (b) (iii),
- Information on evaluation, measurement and verification activities for the biennium, consistent with WAC 480-109-120 (1) (b) (vi),
- Pilot initiatives identified for the 2018-2019 biennium, consistent with WAC 480-109-100 (1) (c), and

The savings, budgets, and cost-effectiveness results presented in the Business Plan represent Pacific Power's current forecast based on the best information available at the time of this filing. On or before November 15, 2022, Pacific Power will file an Annual Conservation Plan for 2023, reflecting updated forecasts for savings and budgets for the remainder of this biennial period.

Cost Recovery Mechanism

PacifiCorp recovers costs associated with its demand-side management programs through the System Benefits Charge (SBC), which is administered through Schedule 191. The SBC was originally approved by the Commission in Docket UE-001457. The SBC was last adjusted in April 2019 when it was decreased from an annual collection rate of approximately $12.3 million to the current collection rate of $10.8 million. The current SBC collection rate was approved in Docket UE-170678 with an effective date of April 1, 2019. The current SBC collection rate represents approximately 3.03 percent of Washington retail electric revenues. A petition for exemption from WAC 480-109-130 and Condition 11(d) in Order 01 in Docket UE - 190908 was filed in Docket UE-210352 and allowed to become effective per the Consent Agenda on July 29, 2021

For the 2022-2023 biennium, PacifiCorp intends to recover through the SBC costs associated with approved conservation programs, planning (including Pacific Power's estimated share of NEEA's end use load research initiative) and program administrative costs, and costs associated with compliance with WAC 480-109 and conditions from Commission's Order 01 in Docket UE-152072. As specified in condition (9) (d) of that order, costs associated with distribution and production efficiency will be recovered through a general rate case, rather than through the SBC. Projected costs for the 2022-2023 biennium are provided in the DSM Business Plan, Appendix 2 to this Plan.

Consistent with WAC 480-109-130, related to conservation cost recovery adjustment, Pacific Power will review the adequacy of Schedule 191 collections each year and make a filing, if necessary, to adjust the collection rate no later than June 1, with an effective date of at least 60 days after the filing. If no adjustment is needed, the Company will file a request for exception and supporting documents explaining why an adjustment is not needed no later than May 1.

Plan Compliance Information

Table 6. 2022-2023 Plan Development Compliance Requirements

DSM Advisory Group	
WAC 480-109-110 (1)	
A utility must maintain and use an external conservation advisory group of stakeholders to advise the utility on conservation issues, including those listed in the above-referenced section of the code.	A list of DSM Advisory Group meetings and topics covered is provided in the "Stakeholder Engagement" section of this Plan.
WAC 480-109-110 (2)	
A utility must meet with its conservation advisory group at least four times per year.	A list of the relevant 2020 and 2021 DSM Advisory Group meetings and IRP Public Input meetings is provided in the Stakeholder Engagement section of this Plan. As of October 1, the DSM Advisory Group has met 4 times in 2021. At least one more meeting is planned for 2021.
WAC 480-109-110 (3)	
A utility must provide its conservation advisory group an electronic copy of all conservation filings that the utility intends to submit to the commission at least thirty days in advance of the filing.	A draft version of this Plan was provided to the DSM Advisory Group on October 1, 2021. The Company will continue to comply with this requirement during the 2022-2023 biennium.
Docket UE-190908 Order 01 Attachment A (3) (c)	
Pacific Power must also coordinate a meeting with Advisory Group members and the entity conducting the conservation potential assessment (CPA) addressing the scope and design of the CPA. Such a meeting must address the assumptions and relevant information utilized in the development of Pacific Power's integrated resource plan as they apply to development and/or modification of the ten-year conservation potential. This meeting must be held early enough in the integrated resource plan public process to incorporate the group's advice.	CPA overview and DSM modeling presentation provided by AEG (the entity conducting the CPA) to Commission staff on January 10, 2020. Four CPA workshops were held in 2021 IRP public participation process. January 21, 2020, February 18, 2020, April 16, 2020 and August 28, 2020. Company will arrange for presentation of 2023 CPA work plan to DSM Advisory Group after the entity is selected. This meeting is estimated to occur in Q4 2021 or early in Q1 2022.
Docket UE-190908 Order 01 Attachment A (3) (c)	
Pacific Power must notify DSM Advisory Group members of IRP advisory group meetings that present the Company's natural gas and energy price forecasts and generation	DSM Advisory Group members are on the IRP listserv and receive direct notification of IRP meetings.

resource cost assumptions used in the development of the Company's integrated resource plan	
Docket UE-190908 Order 01 Attachment A (3) (d)	
Pacific Power must consult with its DSM Advisory Groups starting no later than July 1, 2021, to begin to identify achievable conservation potential for 2022-2031 and to begin to set annual and biennial targets for the 2022-2023 biennium, including necessary revisions to program details.	Pacific Power began discussing the development of its 2022-2031 conservation forecast and 2022-2023 biennial conservation target at the June 17, 2021 DSM Advisory Group meeting. Conversations continued leading up to the filing of this Plan.
Docket UE-190908 Order 01 Attachment A (3) (e)	
Pacific Power must inform the Advisory Group members when its projected expenditures indicate that Pacific Power will spend more than 120 percent or less than 80 percent of its annual conservation budget.	2020 forecast ($12,092,191) vs. actual ($10.840,492) expenditures are found in table 5 of 2020 annual report. Actual 2020 expenditures were 83% of forecast. 2021 expenditures 2021 annual conservation plan are $14,642,787. Expenditures from August 18,2021 forecast shared with DSM Advisory Group are $13,989,366. And represent 96% of the $14,642,787 from the 2021 Annual Conservation Plan.
Docket UE-190908 Order 01 Attachment A (3) (f)	
Prior to filing the Biennial Conservation Plan, Pacific Power must provide the following information to the Advisory Group: draft ten-year conservation potential and two-year target by August 2, 2021; draft program details, including budgets, by September 1, 2021; and draft program tariffs by October 1, 2021.	Amended Order 01 revised the draft ten-year conservation potential and two-year target to date to September 2, 2021 and draft program details and budgets to September 15, 2021. Target was shared at the September 2, 20201 DSM AG meeting. Draft budgets and program details were provided in draft September 15, 2021 DSM Business Plan provided to DSM AG on September 15, 2021.

Conservation Forecast and Target Development	
WAC 480-109-100 (2) and (3)	
By January 1, 2010, and every two years thereafter, a utility must project its cumulative ten-year conservation potential and establish a biennial conservation target.	This Plan provides the projection for the 2022-2031 period and the target for the 2022-2023 biennium.
This projection must consider all available conservation resources that are cost-effective, reliable and feasible. This projection must be derived from the utility's most recent IRP, including any information learned in its subsequent resource	The process for identifying cost-effective, reliable and feasible potential, beginning with the results of PacifiCorp's 2021 IRP process (including the use of CETA compliant portfolio and incorporating a non-energy impact adder), is described in the Conservation Potential and Conservation Targets section of this Plan.

acquisition process, or the utility must document the reasons for any differences.	
When developing this projection, utilities must use methodologies that are consistent with those used in the Northwest Conservation and Electric Power Plan.	The methodology used by the Company to develop its conservation forecast is detailed in Chapter 2 of Volume 2 of the 2021 CPA[20] and in the Conservation Potential and Conservation Targets section of this Plan. During 2018, the utility members of the Statewide Advisory Group produced an updated matrix comparing their elements of the Total Resource Cost (TRC) test and the Northwest Power and Conservation Council. As described in the August 8th, 2019 open meeting staff memo, "each utility was similar enough to be considered consistent with the method used by the NWPCC". The matrix updated in 2018 was first developed in 2011 as part of the Methodology Sub-Committee of the Washington Collaborative Working group on Avoided Costs and Total Resource Cost Determinants. An in-depth review of methodologies was also provided as Appendix 3 of Pacific Power's 2016-2017 Biennial Conservation Plan.
The projection must include a list of each measure used in the potential, its unit energy savings value, and the source of that value.	A list of each measure used in the potential, including the required information, is provided as Appendix G of the 2021 Conservation Potential Assessment.
The biennial conservation target must identify, and quantify in megawatt-hours, all available conservation that is cost-effective, reliable and feasible and (b) The biennial conservation target must be no lower than a pro rata share of the utility's ten-year conservation potential.	The process for developing the 2022-2023 biennial conservation target is detailed in the Conservation Potential and Conservation Targets section of this Plan. The identified target, before adjusting for NEEA and decoupling, is the pro-rata share of the ten-year forecast.
Program Implementation, Management and Evaluation	
WAC 480-109-110 (4)	
A utility must notify its conservation advisory group of company and commission public meetings scheduled to address its conservation programs, its conservation tariffs, or the development of its conservation potential assessment.	"Stakeholder Engagement" section in this Conservation Plan provides the list of meetings where information relevant to the development of the ten-year conservation potential and/or conservation program information was presented. In a prior biennial period, Company confirmed that members of the Company's

[20] The 2021 CPA and all previous studies are available on the Company's website: https://www.pacificorp.com/energy/integrated-resource-plan/support.html .

	DSM Advisory Group were included on the Company's IRP stakeholder contact/email list. Communications to the DSM Advisory group are also sent to UTCenerg@utc.wa.gov.
Docket UE-190908 Order 01 Attachment A (4)	
Pacific Power must provide its proposed annual budgets in a detailed format with a summary page indicating the proposed budget and savings levels for each electric conservation program, and subsequent supporting spreadsheets providing further detail for each program and line item shown in the summary sheet.	Projected annual budgets for the 2022-2023 biennium are provided in the DSM Business Plan.
Docket UE-190908 Order 01 Attachment A (5)	
Pacific Power must maintain its conservation tariffs with program descriptions on file with the Commission. Program details about specific measures, incentives, and eligibility requirements must be filed as tariff attachments or as revisions to the Company DSM Business Plan.	This process is described in the DSM Business Plan (Appendix 2 to this Plan).
WAC 480-109-100 (5) (a) & (b)	
A utility must use RTF deemed savings or other reliable and relevant source data that has verified savings levels and been presented to the Advisory Group for comment.	Data sources used to develop the conservation forecast and biennial target are outlined in Volume II of the 2021 CPA. Appendix D of the 2021 CPA provides a direct comparison of unit energy savings values used in that study to those developed by the RTF and by the Council for its Seventh Power Plan. Adjustments to those values, where appropriate, are described in detail in Appendix 1 of this Plan.
Docket UE-190908 Order 01 Attachment A (6) (c)	
Pacific Power must spend a reasonable amount of its conservation budget on EM&V.	Pacific Power's planned evaluation activities and associated budgets are provided in the DSM Business Plan (Appendix 2 to this Plan).
WAC 480-109-100 (7)	
A utility must offer a mix of conservation programs to ensure it is serving each customer sector, including programs targeted to the low-income subset of residential customers.	The comprehensive portfolio of programs, available services and incentives described in the DSM Business Plan (Appendix 2 to this Plan) are relevant to all customer sectors, including limited income customers.
WAC 480-109-100 (10)	
A utility may fully fund low-income conservation measures that are determined by the implementing agency to be cost-effective	The Company plans to continue to fully fund low-income conservation measures through its Low-Income Weatherization program. Projected savings from these efforts are

consistent with the *Weatherization Manual* maintained by the department. A utility may exclude low-income conservation from portfolio-level cost-effectiveness calculations. A utility must count savings from low-income conservation toward meeting its biennial conservation target.	included in the Biennial Conservation Target but excluded from portfolio-level cost-effectiveness analysis. Program details, including projected savings and budgets, are provided in the DSM Business Plan (Appendix 2 to this Plan).
Docket UE-190908 Order 01 Attachment A (7) (c)	
PacifiCorp may spend up to 10 percent of its conservation budget on programs whose savings impact has not yet been measured, as long as the overall portfolio of conservation passes the Total Resource Cost (TRC) test. As modified by the Council. These programs may include information-only, behavior change, and pilot projects. Pacific Power may ask the Commission to modify this spending limit following full Advisory Group consultation.	As described in the Business Plan, the only conservation effort without EM&V is the "Be Wattsmart, Begin at Home" school initiative. Forecasted expenditures for this effort during the biennial period are $129,046 and represents 0.28% of the preliminary PacifiCorp conservation budget of $45,837,776.
Docket UE-190908 Order 01 Attachment A (8) (a-c) & WAC 480-109-100 (8) & (10)	
a) The Commission uses the Total Resource Cost Test (TRC), as modified by the Council, as its primary cost-effectiveness test. The Council-modified TRC test includes quantifiable non-energy benefits, a risk adder, and a 10 percent conservation benefit adder. Pacific Power's portfolio must pass the TRC test. All cost-effectiveness calculations will assume a Net-to-Gross ratio of 1.0, consistent with the Council's methodology. b) Pacific Power must also provide calculations of the Program Administrator Cost Test (also called the Utility Cost Test) as described in the National Action Plan for Energy Efficiency's study "Understanding Cost-Effectiveness of Energy Efficiency Programs." c) Conservation-related administrative costs must be included in portfolio level analysis	Pacific Power uses the Total Resource Cost test, as modified by the Council, to screen Washington energy efficiency resources in its IRP. Program and portfolio-level cost-effectiveness results for the 2022-2023 biennial period, showing that the portfolio is expected to be cost-effective from the TRC perspective (including conservation-related administrative costs) and Utility Cost Test results are provided in the DSM Business Plan (Appendix 2 to this Plan).

Docket UE-190908 Order 01 Attachment A (9) (a)	
• Pacific Power must develop a plan and conduct the research necessary to achieve sustained energy burden reductions for low-income households, with advice and review provided by the Advisory Group(s) outlined in 3(b). • Low-income savings potential must be included in the 2022-2023 Biennial Conservation Plan. • Description of how the plan prioritizes energy assistance to low-income households with the highest energy burden and future actions under consideration to improve this prioritization.	Company expanded low-income bill assistance as outlined in UE-210533. Changes were approved by Commission and took effect on August 1, 2021. See Appendix G of Conservation Potential Assessment. Low income is a segment. See filing and staff review of UE-210533. DSM Business Plan includes proposed changes to Schedule 114 to increase repair budget and permit installation of efficient electric heat in an expanded set of baseline conditions. Both changes, if approved by the Commission, should help increase homes treated and the scope of project within homes.
Docket UE-190908 Order 01 Attachment A (9) (b)	
Pacific Power must design and implement pilot programs that serve some highly impacted communities and vulnerable populations.	COVID-19 and managing attendant safety concerns dominated 2020-2021 program delivery. Pandemic impacts are not gone and are likely to continue to affect 2022-2023 program delivery. Identification of highly impacted communities (HIC) and vulnerable populations is occurring within the new Equity Advisory Group and will be included in the Clean Energy Implementation Plan. HIC information is available to program implementation team and is being used to inform pilots and offers described in the DSM Business Plan.
Docket UE-190908 Order 01 Attachment A (9) (c)	
Pacific Power must evaluate opportunities for location-targeted programs that provide non-wires alternatives to	Location targeted efforts were impacted by COVID-19 during 2020-2021 biennial period as the Company and their implementation contractors focused on a) safety, and b)

eliminate or delay the need for distribution system investments	achieving the overall targets. Circuits with potential for deferral of capital projects are listed in the DSM Business Plan under the pilot's section.
Docket UE-190908 Order 01 Attachment A (10) (a-c)	
a) During this biennium, Pacific Power must demonstrate progress towards identifying, researching, and developing a plan to properly value nonenergy impacts that have not previously been quantified. The nonenergy impacts considered must include the costs and risks of long-term and short-term public health benefits, environmental benefits, energy security, and other applicable nonenergy impacts. b) Pacific Power must identify the discrete nonenergy impacts and the monetized value used in cost-effectiveness testing for each electric conservation program. This must be provided in a detailed format with a summary page and subsequent supporting spreadsheets, in native format with formulas intact, providing further detail for each program and line item shown in the summary sheet in annual plans and reports. c) To the extent practicable, Pacific Power must begin to identify the distribution of energy and nonenergy benefits in annual plans and reports. This reporting must use currently quantified nonenergy impacts as well as values and estimates of additional impacts as they become available	Pacific Power in conjunction with the other investor-owned utilities contracted with DNV to assess and quantify additional non-energy impacts. Work scope, preliminary findings their application to the 2022-2023 planning process were shared with the DSM Advisory Group. The final DNV report is included as Appendix 4 in the Biennial Conservation Plan. Non-energy impacts by measure included in AEG cost effectiveness memos included with DSM Business Plan. Non-energy impacts by measure will be included in cost effectiveness provided in the 2021 annual report and the 2022 Annual Conservation Plan.

List of Appendices

1) Conservation Forecast Adjustments made to PacifiCorp's Ten-Year Conservation Forecast
2) PacifiCorp's Washington Demand-side Management 2022-2023 Business Plan
3) Northwest Energy Efficiency Alliance 2022-2023 Forecast for PacifiCorp's Washington service territory
4) Non-energy impacts report and NEI values (two files)
5) Production Efficiency Studies (two files)
6) Completive Procurement Framework