# Washington CEIP 3rd Technical Workshop

November 10, 2021
1-3 pm Pacific






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# Meeting Agenda

**1:00-1:15 pm pacific:** Introductions

**1:15-1:30 pm pacific:** Overview of Draft CEIP

**1:30-2:00 pm pacific:** Interim and Specific Targets

**2:00-2:30 pm pacific:** Specific Actions

**2:30-3:00 pm pacific:** Incremental Cost

# Overview






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# PacifiCorp’s Draft Clean Energy Implementation Plan

- PacifiCorp filed its Draft Clean Energy Implementation Plan (CEIP) on November 1
- PacifiCorp’s first CEIP describes how the utility fulfills requirements of Washington State’s Clean Energy Transformation Act (CETA)
- PacifiCorp's 2021 Integrated Resource Plan (IRP) informs the company's actions toward meeting the requirements of CETA.

# The CEIP Chapters

| | |
|---|---|
| Interim and Specific Targets | PacifiCorp's **pathway to carbon-neutral by 2030** and **100% renewable and non-emitting by 2045**, including **what actions can be taken over the next four years** to move toward targets. |
| Customer Benefit Indicators | Discussion of the co-development of **Customer Benefit Indicators, metrics, and weighting.** |
| Specific Actions and Narrative | Detailed actions for the next four years, including **projects (utility-scale and distributed), programs, company initiatives, and other compliance actions**. |
| Incremental Cost and Rates Calculation | The **total cost to retail customers** of CETA compliance; incremental cost is the difference between the CETA-compliant portfolio and the alternative lowest reasonable cost portfolio. |
| Public Participation | **Feedback** from the public, advisory groups, and other stakeholders, and PacifiCorp's plans to address barriers to participation in the future. |

# Interim and Specific Targets






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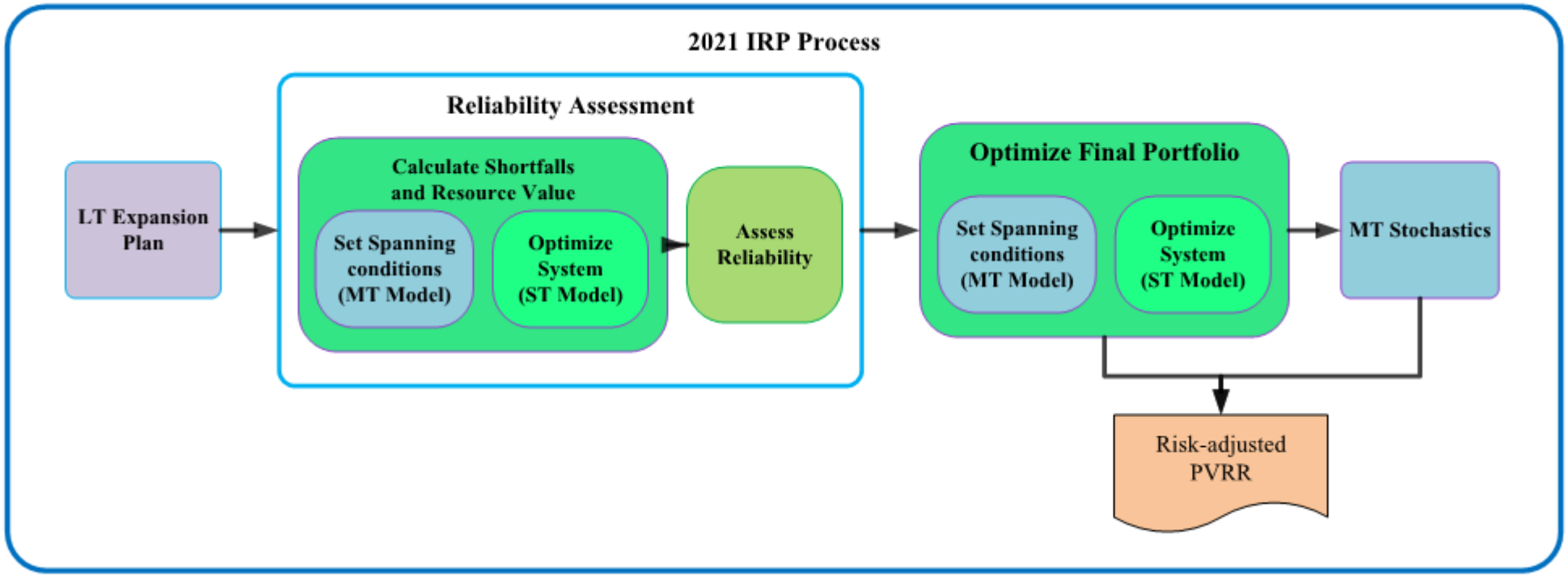
# Resource Planning and the CEIP

- In the 2021 IRP, the Plexos model was used to optimally develop a range of least-cost least-risk portfolios under various policy and cost environments. The policy and cost scenarios include:
  - low, medium, and high natural gas prices
  - zero, medium and high carbon dioxide prices
  - an additional scenario including the social cost of greenhouse gasses
- The CEIP is informed by the 2021 IRP preferred portfolio of resources.
- The resulting set of portfolios informed the selection of the 2021 IRP Preferred Portfolio: the top-performing portfolio over a range of metrics including expected costs, low-probability high-cost outcomes, reliability and carbon dioxide emissions, which also demonstrates the ability to meet the requirements of RCW 19.405.040 and 19.405.050 and evaluated relative to the requirements of CETA.

**PacifiCorp's IRP-to-CEIP workplan provides additional detail on how the IRP informs CEIP development:**
https://www.pacificorp.com/energy/washington-clean-energy-transformation-act-equity.html

# 2021 IRP Portfolio Production Process



# CETA Assessment

**Methodological process**

1. PacifiCorp develops its least-cost least-risk portfolio
2. The optimal portfolio is analyzed against CETA targets (outside of Plexos):
   a) Use hourly generation outcomes from ST model
   b) Develop Washington-allocated portfolio
   c) Determine if Washington-allocated portfolio meets CETA requirements:
      i. Coal generation is out of rates by 2025
      ii. Generation is carbon greenhouse gas neutral by 2030
      iii. Generation only comes from renewable and non-emitting resources by 2045
3. A compliance shortfall was identified relative to the 2030 target:
   a) A resources is situs-assigned to Washington
   b) 2021 IRP Preferred Portfolio: developed to be the least-cost least-risk portfolio forecasted to meet CETA requirements

Key notes:

- Washington retail electric sales are defined as total energy supplied to Washington customers net of distributed generation, demand-side management and private generation
- Washington-allocated energy from system resources is determined given assumptions about future allocation methodology
- CETA-compliant energy assumed to include hydro electric, solar, wind, nuclear and hydrogen non-emitting peaking units
- Trends across the planning horizon were extrapolated out to 2045

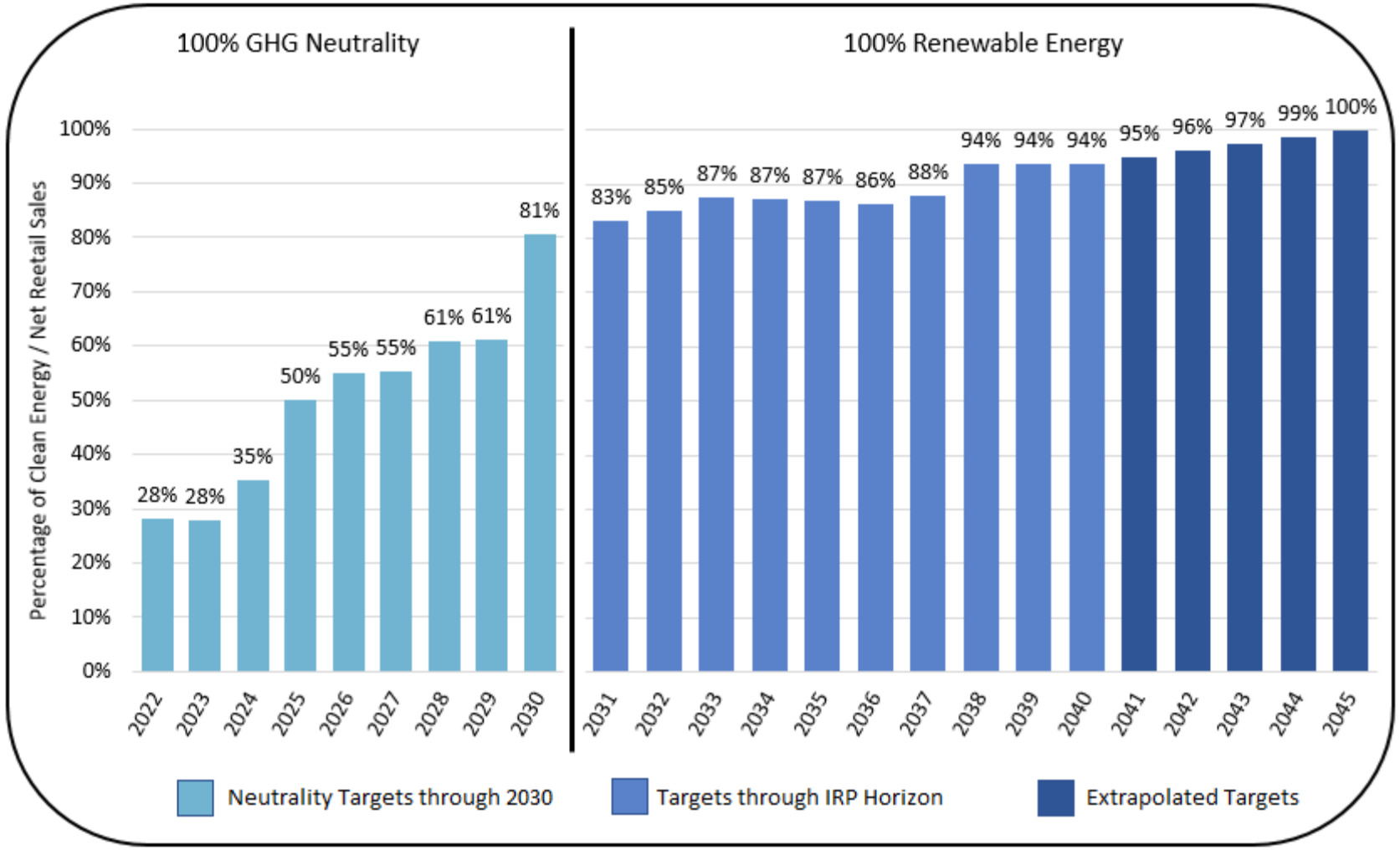
Targets are expressed as the ratio of CETA-compliant energy as a share of Washington retail electric sales based on the 2021 IRP Preferred Portfolio

# Target Development

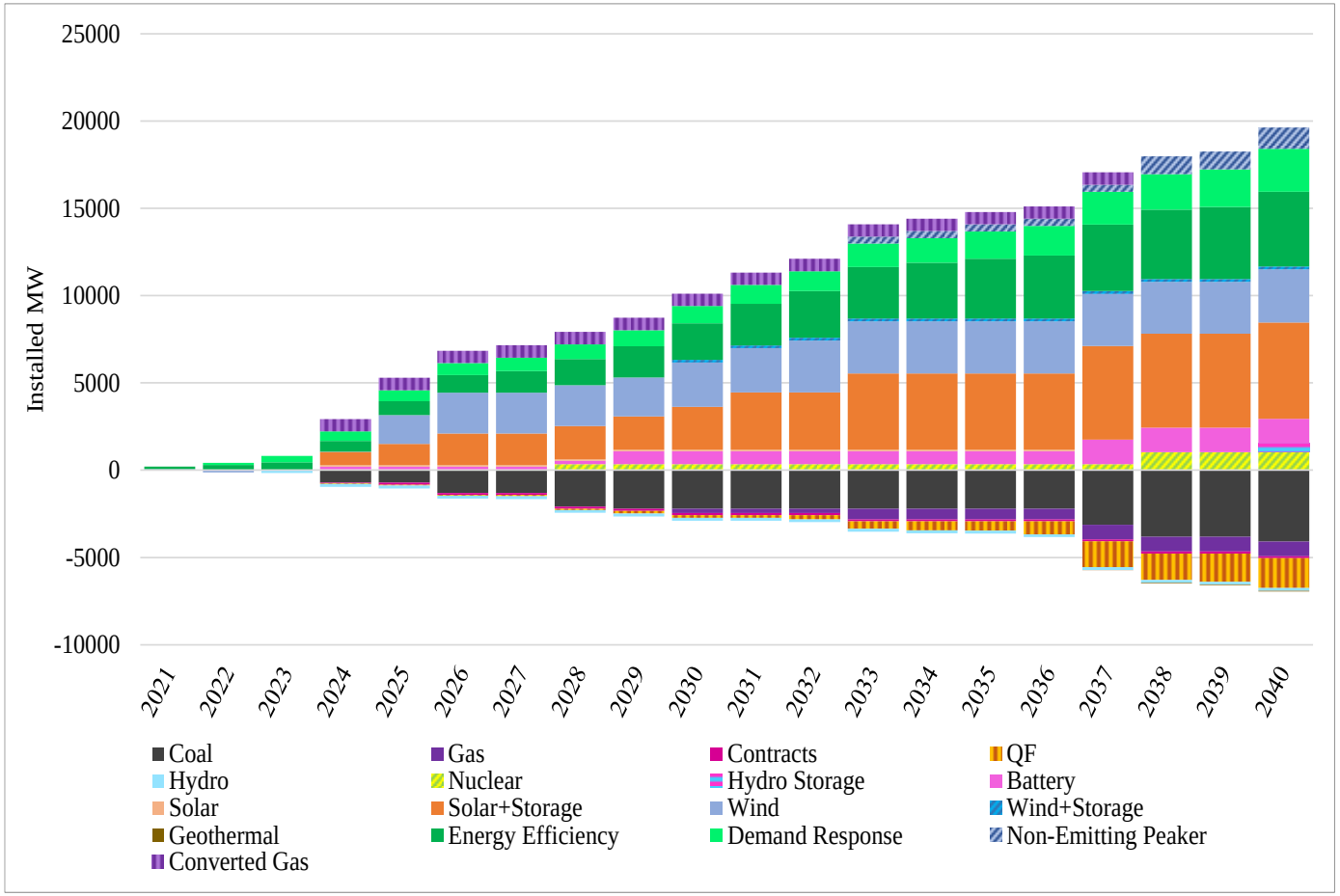
| | Notes | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| **Washington Load (MWh)** | Pre-DSM, post-DG, at gen. | 4,591,020 | 4,656,030 | 4,710,640 | 4,730,240 |
| **Washington Load (MWh)** | Post DSM | 4,470,759 | 4,497,813 | 4,513,387 | 4,487,813 |
| **WA Allocation of System Energy (MWh)** | existing and new proxy resources | 4,110,338 | 3,833,986 | 4,475,942 | 5,436,944 |
| **Proxy Market Purchases (allocation to Load MWh)** | Assumed to be the source of energy covering the gap between allocation and load | 360,422 | 663,827 | 37,445 | 0 |
| **WA Non-emitting (MWh)** | Includes Hydro, Nuclear, Non-emitting peakers | 319,897 | 277,076 | 273,837 | 271,349 |
| **WA REC Generating Resources (MWh)** | Excludes Hydro RECs | 937,443 | 970,361 | 1,312,645 | 1,971,213 |
| **Total CETA compliant** | | 1,257,341 | 1,247,437 | 1,586,482 | 2,242,561 |
| **Annual Target Percentage** | | **28%** | **28%** | **35%** | **50%** |

# Targets

This chart, from the draft CEIP, shows PacifiCorp's path to reach CETA targets.



# System-Wide Contribution to the Targets: Preferred Portfolio




- The 2021 IRP resource plan furthers investments in new wind and transmission, while adding significant new solar and storage resources, demand side management resources, and for the first time, advanced nuclear.
- Based on the 2021 IRP, PacifiCorp is projected to add new projects from the 2020 all-source Request for Proposals (RFP) final shortlist resources including 1,792 MW of wind, 1,302 MW of solar additions and 697 MW of battery storage capacity – 497 MW paired with solar and a 200 MW standalone battery by the end of 2024
- Through the end of 2026, the preferred portfolio also includes the acquisition and repowering of Rock River I (49 MW) and Foote Creek II-IV (43 MW) wind projects located in Wyoming.
- Additionally, the preferred portfolio includes an additional 745 MW of wind and additional 600 MW of solar co-located with storage by the end of 2026.

# Specific Targets: Energy Efficiency

- Relies primarily on the IRP preferred portfolio conservation from 2022 through 2031 with HER and RTF adjustments for the target. PacifiCorp proposes to use the same forecast for EIA and the biennial conservation plan to draft specific targets for the CEIP.
- 2022-2023 - Draft Target was provided with the Biennial Conservation Plan on November 1, 2021.
- 2024-2025 - Used additional two years of conservation pro-rata share, plus adders for decoupling. Will be updated through 2023 Biennial Conservation Plan process.

CEIP Energy Efficiency Targets (2022-2025)

| MWh at Generation | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| Washington - first year Energy Efficiency from the 2021 IRP Preferred Portfolio | 34,003 | 37,231 | 39,530 | 45,254 |
| Behavioral Programs (HER) | 4,414 | (182) | 4,414 | (182) |
| RTF adjustments (total) | 335 | 407 | 486 | 558 |
| Adjusted Energy Efficiency Forecast - annual | 38,752 | 37,456 | 44,431 | 45,631 |
| Adjusted Energy Efficiency Forecast - pro-rata | 50,579 | 50,579 | 50,579 | 50,579 |
| Decoupling commitment - five percent | 2,529 | 2,529 | 2,529 | 2,529 |
| Annual Target - pro-rata basis | **53,108** | **53,108** | **53,108** | **53,108** |
| 2022-2025 target | | | | **212,431** |

# Specific Targets: Demand Response

- The majority of demand resources (DR) included in the near term 2021 IRP  modeling were derived from competitive bids in the 2021 DR RFP. The company plans to use competitive RFP bids as the basis for DR targets during the implementation period.

- PacifiCorp developed an actionable target of 37.4 MW for DR programs during the implementation period. This assumes that programs are filed and approved in 2022.

- The Company is currently in the process of negotiating contracts for programs and is actively working to increase certainty regarding potential volume from vendors.

# Specific Actions



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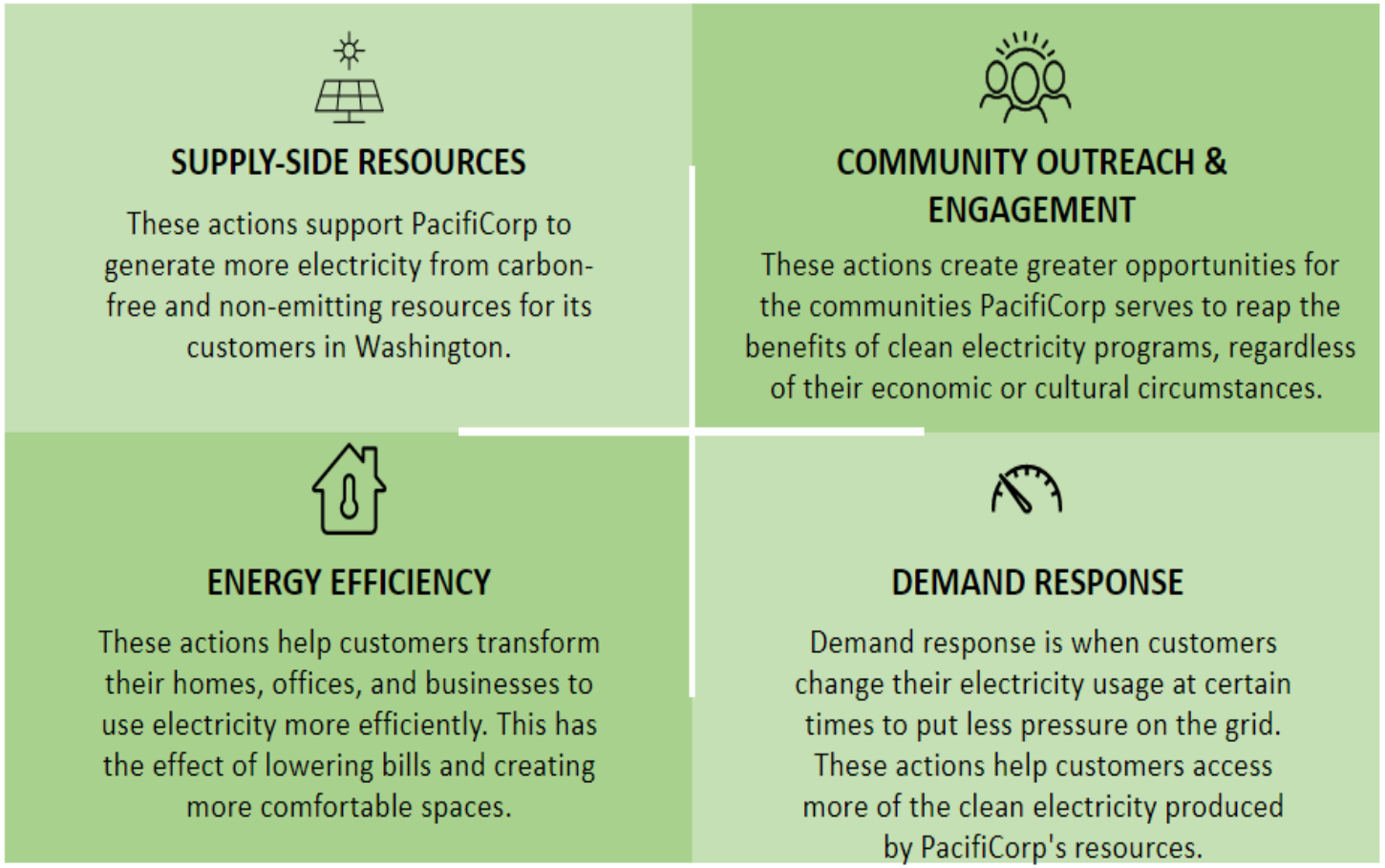
# Overview of Specific Actions



# Supply-side Resources

Proposed specific actions for renewable energy resulting from the 2020 All-Source Request for Proposals

| Project Name | Bidder/Owner | Type | Location | Resource Size (MW) | Battery Size (MW) | Expected Online |
|---|---|---|---|---|---|---|
| **Anticline** | NextEra | Wind | Wyoming East | 100.5 | n/a | 2024 |
| **Cedar Springs IV** | NextEra | Wind | Wyoming East | 350.4 | n/a | 2024 |
| **Rock Creek I*** | Invenergy | Wind | Wyoming East | 190 | n/a | 2024 |
| **Rock Creek II*** | Invenergy | Wind | Wyoming East | 400 | n/a | 2024 |
| **Boswell Springs** | Innergex | Wind | Wyoming East | 320 | n/a | 2024 |
| **Two Rivers** | Blue Earth & Clearway | Wind | Wyoming East | 280 | n/a | 2024 |
| **Cedar Creek** | rPlus Energies | Wind | Goshen ID | 151 | n/a | 2023 |
| **Fremont** | Longroad Energy | Solar with Battery | Utah South | 99 | 49.5 | 2023 |
| **Rush Lake** | Longroad Energy | Solar with Battery | Utah South | 99 | 49.5 | 2023 |
| **Parowan** | First Solar | Solar with Battery | Utah South | 58 | 58 | 2024 |
| **Rocket Solar II** | DESRI | Solar with Battery | Utah North | 45 | 12.5 | 2023 |
| **Hornshadow I & II** | enyo energy | Solar with Battery | Utah South | 300 | 75 | 2023 |
| **Green River I & II** | rPlus Energies | Solar with Battery | Utah South | 400 | 200 | 2024 |
| **Hamaker** | ecoplexus | Solar with Battery | Southern OR | 50 | 12.5 | 2023 |
| **Hayden 2** | ecoplexus | Solar with Battery | Southern OR | 160 | 40 | 2023 |
| **Dominguez I** | Able Grid | Battery Storage | Utah North | n/a | 200 | 2024 |
| **Glen Canyon** | sPower | Solar Photo-voltaic | Utah South | 95 | n/a | 2023 |

# Supply-side Resources

Proposed 2022 All-Source Request for Proposal Specific Action Resources resulting from the 2021 IRP

| Project Name | Bidder/Owner | Type | Location | Resource Size (MW) | Battery Size (MW) | Expected Online |
|---|---|---|---|---|---|---|
| **Portland/N. Coast** | TBD | Wind | NW Oregon | 130 | n/a | 2025 |
| **Willamette** | TBD | Wind | NW Oregon | 615 | n/a | 2025 |
| **Borah Hemingway** | TBD | Solar with Battery | Idaho | 600 | 600 | 2025 |

- Filed a request for the Washington Utilities and Transportation Commission to approve at its November 12 public meeting an independent evaluator to oversee an energy supply solicitation process in 2022.
- More information on how the public can participate can be found here:
- Washington Independent Evaluator Request for Proposal to support PacifiCorp's 2022 All-Source Request for Proposal
- https://www.pacificorp.com/suppliers/rfps/wa-ie-rfp.html

# Energy Efficiency

Energy efficiency programs to deliver energy efficiency targets

| Program or Initiative (MWh/Yr) | 2022 | 2023 | 2024 | 2025 | 2022-2025 |
|---|---|---|---|---|---|
| Low Income Weatherization (114) | 182 | 182 | 182 | 182 | |
| Home Energy Savings (118) | 10,349 | 10,986 | 10,349 | 10,986 | |
| Home Energy Reports | 4,414 | (182) | 4,414 | (182) | |
| Total Residential Programs | 14,945 | 10,986 | 14,945 | 10,986 | |
| Wattsmart Business (140) - Commercial | 22,645 | 23,256 | 22,645 | 23,256 | |
| Wattsmart Business (140) - Industrial | 13,936 | 13,776 | 13,936 | 13,776 | |
| Wattsmart Business (140) - Irrigation | 935 | 935 | 935 | 935 | |
| Total Business Programs | 37,516 | 37,967 | 37,516 | 37,967 | |
| Northwest Energy Efficiency Alliance | 3,314 | 3,977 | 3,314 | 3,977 | |
| Total Conservation | 55,774 | 52,930 | 55,774 | 52,930 | 217,408 |

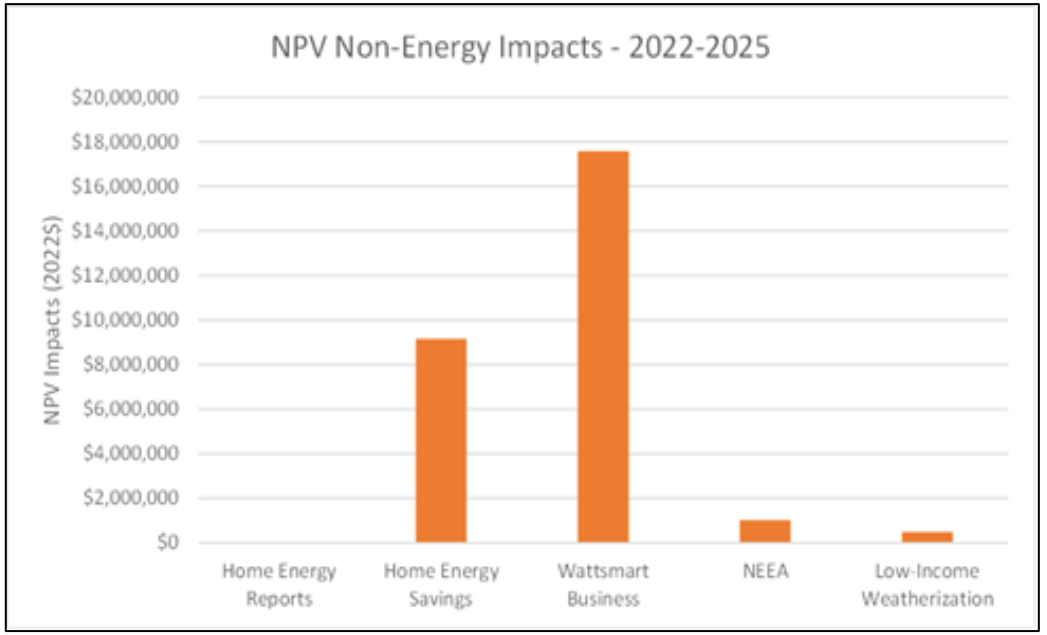
# Energy Efficiency

Proposed cost (millions) of Energy Efficiency programs

| Year | Incentives/direct benefits | General implementation | Total |
|---|---|---|---|
| 2022 | $ 14.72 | $ 8.09 | $ 22.81 |
| 2023 | $ 14.72 | $ 8.31 | $ 23.03 |
| 2024 | $ 14.72 | $ 8.09 | $ 22.81 |
| 2025 | $ 14.72 | $ 8.31 | $ 23.03 |
| Total | $ 58.87 | $ 32.79 | $ 91.67 |

Non-energy impacts by program for 2022-2025

| Program | NEI ($) |
|---|---|
| Low Income Weatherization | $495,672 |
| Home Energy Savings | $9,160,974 |
| Home Energy Reports | $0 |
| Wattsmart Business | $17,586,509 |
| Northwest Energy Efficiency Alliance | $1,021,151 |
| Total Conservation | $28,264,306 |



# Demand Response

Proposed actions include DR programs covering most customer classes: Irrigation, C&I curtailment, residential water heaters, residential bring your own thermostats, and batteries.

Costs and capacity volumes are derived from successful bids in the 2021 DR RFP that were selected as part of the preferred portfolio in the 2021 IRP.

Additional resources during the implementation period may be procured from forthcoming demand-side RFP. The characteristics of those resources are unknown and would likely be procured towards the end of the period. As such, they are not included in volumes and cost estimates.

| Year | Target Cumulative Capacity (MW) | Incentives/Direct Customer Benefit | General Implementation Expense | Total Spending |
|---|---|---|---|---|
| **Total 2022-2025** | 37.4 | $3,400,000 - $4,200,000 | $2,850,000 - $3,500,000 | $6,250,000 - $7,700,000 |

*Costs are not considered incremental in the context of CETA as they would have been considered cost-effective in the absence of CETA.

# Community Outreach and Engagement

Actions that focus on the delivery of programs and communications to customers in named communities.

**Outreach, language, and education**

- Improve language accessibility by assessing customer needs, reviewing current programs, identifying gaps, and developing clear plans and processes for action.
- Identify opportunities to develop program materials, web content, and outreach in non-English languages.
- Review current program outreach and look for ways to improve targeting and outreach to named communities.


# Community Outreach and Engagement

**Outreach, language, and education**

- Develop a webpage to host educational resources in English and Spanish.
    - This will include energy-related educational collateral, modules, and resources for customer and community use.
- Identify and expand outreach to non-profits that provide services to named communities with the goal of increasing grant applications and approvals.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# Community Outreach and Engagement

**Establish an Electric Vehicle (EV) Grant program**

- Establish an Electric Vehicle (EV) Grant program that provides additional support for named communities.
- Install electric vehicle charging infrastructure, purchase electric vehicle charging infrastructure, conduct outreach and education related to transportation electrification, and potentially purchase electric vehicles.
- Annual program will be developed with stakeholders to ensure an inclusive grant program design.

# Incremental Cost






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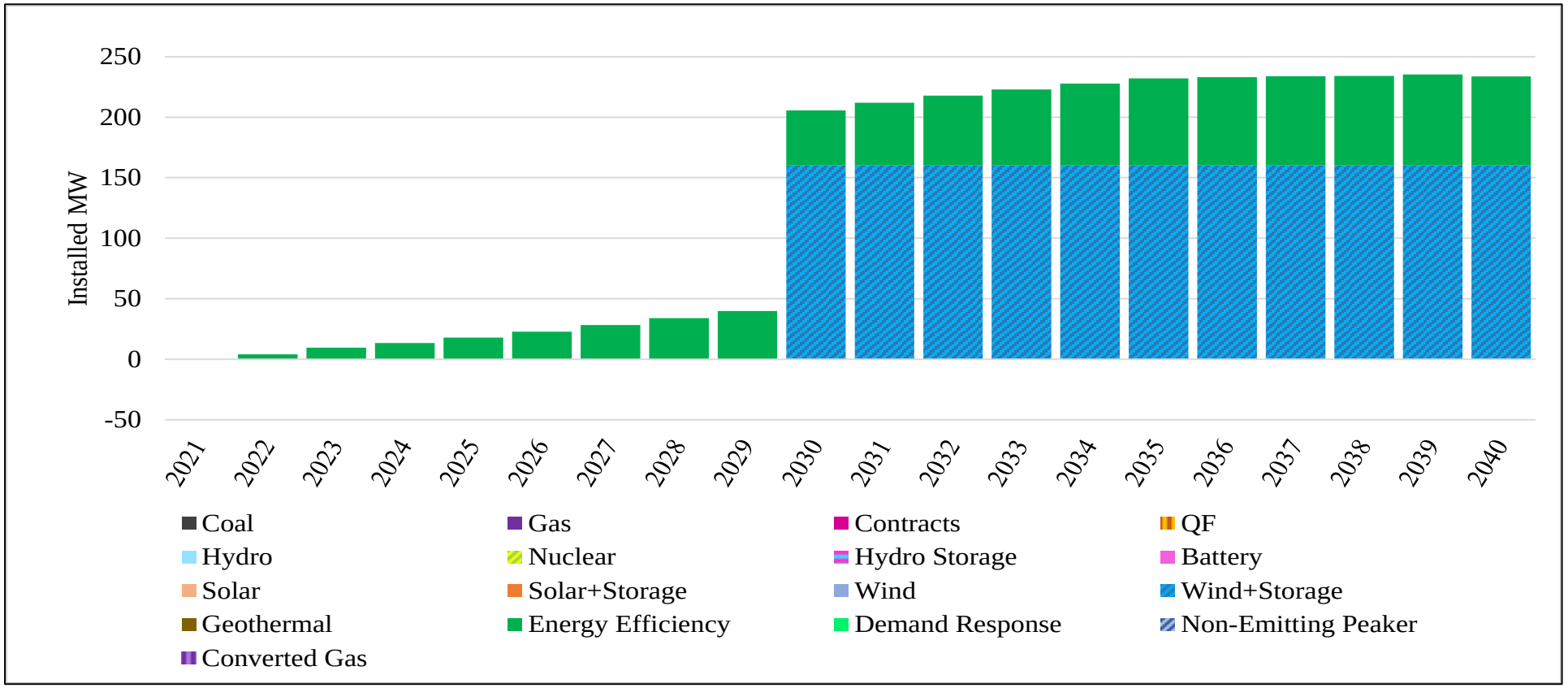
# Incremental Cost Calculation

- WAC 480-100-660(1) states that to determine the "incremental cost of the actions taken to comply with RCP 19.405.040 and 19.405.050" the utility must compare its lowest reasonable cost portfolio (i.e. our CETA-compliant preferred portfolio) to the **alternative lowest reasonable cost portfolio that would have resulted in the absence of CETA requirements.**
- The forecasted incremental costs for 2022 through 2025 reflect both IRP-derived and non-modeled incremental costs.
- The average annual costs based on current estimates is approximately $5.6 million per year
- IRP costs for each portfolio are derived using build costs (LT model) and variable and fixed costs (ST model) with a risk-adjusted premium (MT model).
  - The delta between the portfolios in capital investments, variable and fixed costs are used to derive the incremental cost of CETA – moving from the alternative portfolio to the preferred portfolio of resources.
  - Example costs can include incremental energy efficiency or resource acquisitions added for the purpose of meeting CETA targets.
- Additional costs not modeled in the IRP would include:
  - Costs of CETA implementation like the Equity Advisory Group (EAG)
  - Equity consideration in DSM program
  - Currently, these costs are estimated to be in the $2 million range annually

# Cumulative CETA Impacts

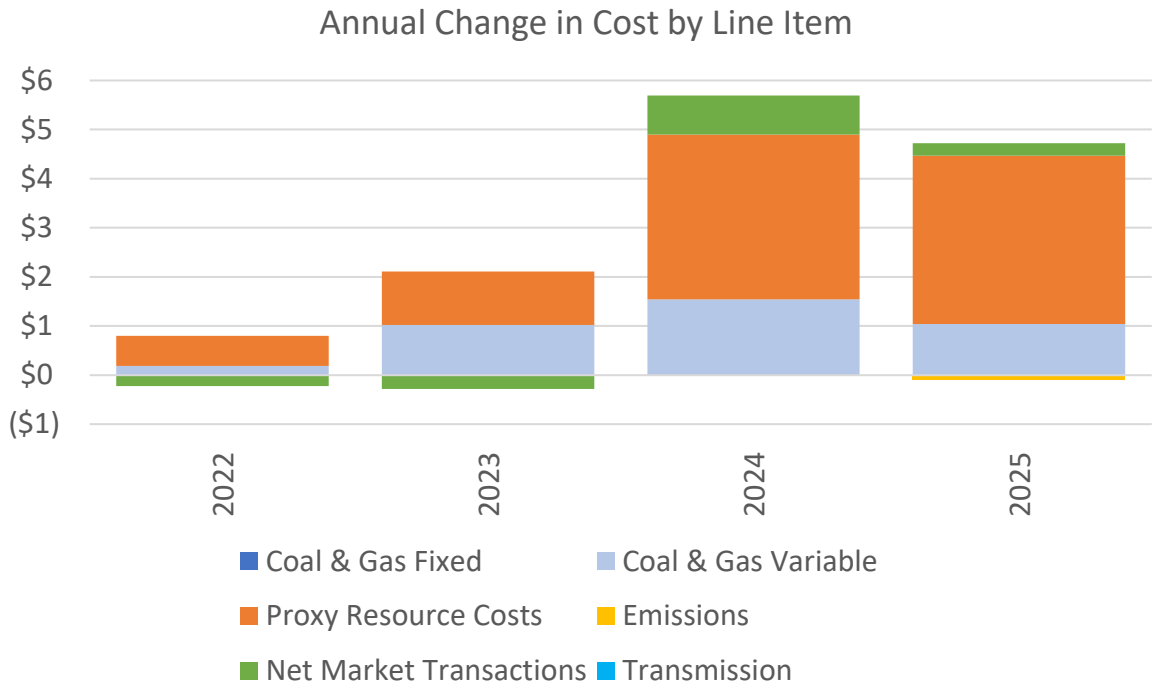


# Incremental Cost Calculation

Difference between CETA-compliant preferred portfolio and the alternative lowest reasonable cost portfolio (millions)

| (Benefit)/Cost of P02-MM-CETA | NPV | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Coal Fuel | $0 | $0 | $1 | ($0) | ($1) |
| Gas Fuel | $3 | ($0) | ($0) | $2 | $2 |
| Gas VOM | $0 | ($0) | $0 | $0 | $0 |
| Non-Gas VOM/PTC | $0 | $0 | ($0) | $0 | $0 |
| Energy Efficiency | $7 | $1 | $2 | $3 | $3 |
| Market Purchases | $0 | ($0) | ($0) | $0 | $0 |
| Market Sales | $0 | ($0) | ($0) | $0 | ($0) |
| Emissions | ($0) | $0 | $0 | $0 | ($0) |
| Deficiency | ($0) | ($0) | ($1) | $1 | $0 |
| Total Variable | $13 | $1 | $2 | $6 | $5 |
| | | | | | |
| Proxy Capital | $0 | $0 | $0 | $0 | $0 |
| Proxy Fixed | ($0) | $0 | ($0) | ($0) | $0 |
| Coal Fixed | $0 | $0 | $0 | $0 | $0 |
| Gas Fixed | $0 | $0 | $0 | $0 | $0 |
| Demand Response | $0 | $0 | $0 | $0 | $0 |
| Transmission | $0 | $0 | $0 | $0 | $0 |
| Total Fixed | $0 | $0 | $0 | $0 | $0 |
| | | | | | |
| Total | $13 | $1 | $2 | $6 | $5 |

| | NPV | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| Coal & Gas Fixed | $0 | $0 | $0 | $0 | $0 |
| Transmission | $0 | $0 | $0 | $0 | $0 |
| Proxy Resource Costs | $7 | $1 | $1 | $3 | $3 |
| Coal & Gas Variable | $3 | $0 | $1 | $2 | $1 |
| Emissions | ($0) | $0 | $0 | $0 | ($0) |
| Net Market Transactions | $0 | ($0) | ($0) | $1 | $0 |
| Net Cost/(Benefit) | $10 | $1 | $2 | $6 | $5 |




All cost differences between these two portfolios are directly attributed to actions taken to comply with CETA requirements – the only resource changes are those attributed to Washington customers

# Revenue Requirement for 2022-2025

***Revenue Requirement = Rate of Return x (Net Rate Base) + Operating Costs***

| **$-Millions** | **2022** | **2023** | **2024** | **2025** |
|---|---|---|---|---|
| **Revenue Requirement** | | | | |
| Capital Investment | - | - | - | - |
| Depreciation Reserve | - | - | - | - |
| Net Rate Base | - | - | - | - |
| Pre-Tax Rate of Return | 8.409% | 8.409% | 8.409% | 8.409% |
| Pre-Tax Return on Rate Base | - | - | - | - |
| Depreciation | - | - | - | - |
| Operating & Maintenance | | | | |
| Net Power Costs | (0.23) | 0.00 | 3.16 | 1.27 |
| Energy Efficiency | 0.79 | 1.81 | 2.51 | 3.35 |
| Administrative & General | | | | |
| DSM Program Costs | 1.21 | 1.22 | 1.22 | 1.22 |
| EV Grant Program Costs | 0.25 | 0.25 | 0.25 | 0.25 |
| Outreach Costs | 0.37 | 0.27 | 0.27 | 0.27 |
| Materials | 0.03 | 0.03 | 0.03 | 0.03 |
| Staffing | 0.56 | 0.57 | 0.58 | 0.60 |
| Data Support | 0.10 | 0.11 | 0.11 | 0.11 |
| **Total Revenue Requirement** | **3.08** | **4.26** | **8.13** | **7.10** |
| **Average Revenue Requirement** | **5.64** | | | |

# Reminder About Sharing CEIP Feedback

- The November 1 Draft CEIP is available at **pacificorp.com/ceip**
- Participate and provide input at the November 10 Public Meeting, 6-8 pm PT
- Participate and provide input at the November 17 EAG Meeting,  1-4 pm PT
- Submit comments directly to PacifiCorp via email at CEIP@PacifiCorp.com
- File comments with the Washington UTC Records Center
    - Use the "Submit a Comment" feature at https://www.utc.wa.gov/consumers/submit-comment