BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 435

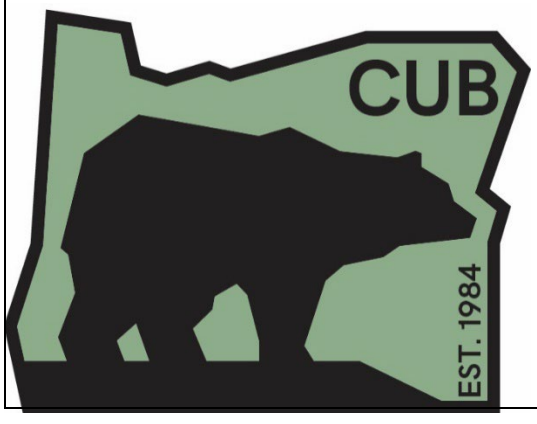
In the Matter of	)
	)
PORTLAND GENERAL ELECTRIC COMPANY,	)
	)
Request for a General Rate Revision.	)
	)

REBUTTAL TESTIMONY

OF THE

OREGON CITIZENS' UTILITY BOARD

September 10, 2024



BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 435

In the Matter of	)	
	)	
PORTLAND GENERAL ELECTRIC COMPANY,	)	REBUTTAL TESTIMONY OF BOB JENKS ON BEHALF OF THE OREGON CITIZENS' UTILITY BOARD
	)	
Request for a General Rate Revision.	)	
	)	

I. INTRODUCTION

Q. Are you the same Bob Jenks who filed Opening Testimony on behalf of the Oregon Citizen's Utility Board (CUB)?

A. Yes, I presented UE 435/CUB/100/Jenks and UE 435/CUB/300/Wochele-Jenks.

Q. What is the purpose of your testimony?

A. I wish to respond to issues raised by PGE in its Reply Testimony, including PGE's response to CUB's concerns about PGE's management of capital spending and its critique of CUB's proposal to deal with rate shock. In addition, from reading PGE's Reply Testimony, it is clear that CUB and PGE have very different views about the value of transparency, and some fundamental disagreements about the regulatory process. My testimony will address:

- Affordability
- Transparency
  - Rate Increase transparency
  - Bill Design
  - Outage Management System

- Budget processes
- Regulatory Process
  - Purpose of a Test Year
  - Base for a Test Year
  - Balancing customer and shareholder interests
- Management of Capital Spending
  - Capital Forecast
  - Management of Capital Spending
- Rate Shock and the PUC Staff Rate Cap Proposal
- Multi-year rate cases.

II. AFFORDABILITY

Q. You raised concerns about PGE's affordability in Opening Testimony. After updates to this case and net powers costs, do you still have concerns?

A. My concerns have only grown. Customers are now facing a larger increase next January than they were when this case was filed. The combination of this general rate case (GRC) and net power costs is projected to raise rates by 9.4% next January, and 11% overall in 2025 (including the mid-year addition of Seaside), as depicted in Figure 1 below.

Figure 1

General rate case	**6.30%[1]**
power cost case	**3.10%[2]**
Seaside	**1.60%[3]**
January 1 Total	**9.40%**
January and June 2025	**11.00%**

[1] UE 435 – PGE/1000/Ferchland - Liddle/8.
[2] UE 436 – Initial Filing, February 29, 2024, Update, April 1, 2024, Update, July 15, 2024.
[3] UE 435 – PGE 500/29 shows 2025 revenue requirement associated with Seaside; UE 435 – PGE 902/1 shows the current revenue requirement.

Q. What's wrong with the way PGE has presented its rate increase in Reply Testimony?

A. As discussed in more detail below, PGE Reply Testimony proposes to increase rates 6.3%.[4] At first, this looks like a decrease from the initial ask of 7.3%.[5] This number is misleading however, because it leaves out two critical components that will increase rates in 2025: the net power cost and the mid-year addition of Seaside Battery Storage. If we include these components rates will increase by an additional 11.0% -- on top of the 18% increase earlier this year. Customers pay the total amount, so we need to discuss rates in total, not piecemeal. In addition, in PGE's case summary in Opening Testimony, PGE provided the combined January 2025 increase for the GRC, the net power cost case, and some additional schedules. In its Reply Testimony, PGE is only including the GRC in it case summary. This allows PGE to show a smaller increase than it proposed in its Initial Filing in February 2024, but this is misleading because power costs have increased in the interim and customers are facing a larger increase next January than they had been facing last February.

Q. Has PGE responded to the affordability concerns?

A. Not meaningfully. In Reply Testimony, PGE did reduce its requested rate increase in this GRC by $18 million,[6] but that reduction was more than offset by its updates to its net power cost forecast. PGE "genuinely acknowledged" "the difficulties" that its dramatic rate hikes have caused to customers,[7] but beyond this, its approach

[4] UE 435 – PGE/1000/Ferchland - Liddle/8.
[5] UE 435 – PGE/200/ Batzler - Ferchland/2.
[6] UE 435 – PGE/1000/Ferchland - Liddle/8.
[7] *Id.* at 4.

seems to be business as usual. In response to CUB's Motion to Dismiss this case, PGE said it "seeks to collaboratively address CUB's concerns within the Commission's normal procedural framework."[8] Since that time the normal procedural framework has included multiple settlement conferences, testimony by Oregon Public Utility Commission (PUC) Staff (Staff) and Intervenors and the Company's Reply Testimony. While the Company pulled its Investment Recovery Mechanism and its proposal to include battery storage in the renewable automatic adjustment clause (RAAC), the Company has yet to address CUB's concerns about the size, impact, and timing of another mid-winter rate increase. Customers are facing a larger mid-winter increase than when CUB filed our motion to dismiss.

Many of PGE's customers have found it difficult to absorb last January's rate increase. In Opening Testimony, CUB discussed the unprecedented level of disconnections for non-payment that PGE customers were receiving. June and July 2024 both saw more than 3000 customers shut off, bringing the total since the January 1, 2024, rate increase to 21,242 customers disconnected.[9] PGE's rates have risen to a point where there is a very real affordability problem. Due to this affordability problem, taking a business-as-usual approach fails to rise to the level necessary to meet the needs of customers.

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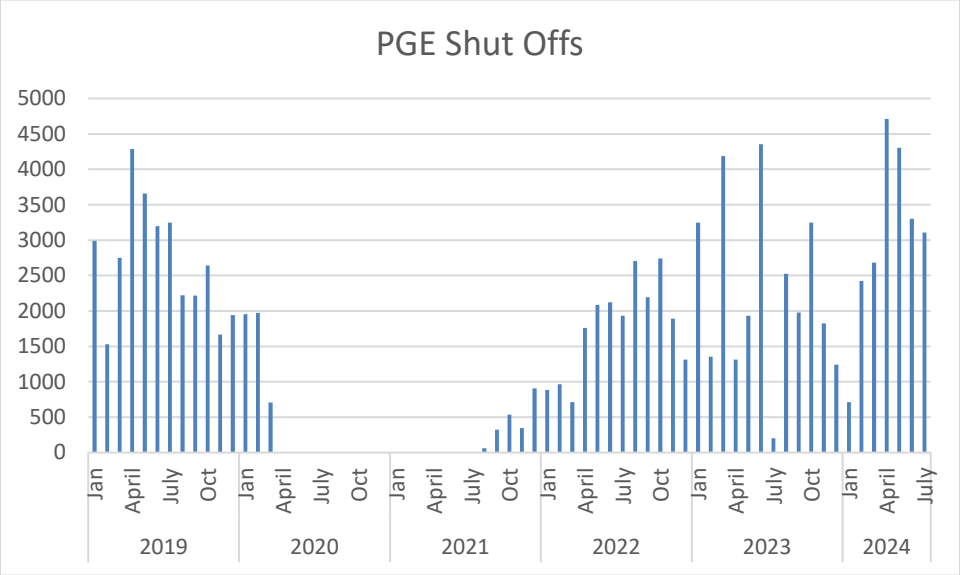
[8] UE 435 – *PGE'S Response To Oregon Citizens' Utility Board's Motion To Dismiss Or Segregate Certain Issues*, 3 (March 29, 2024).
[9] CUB/401.

Figure 2



III. TRANSPARENCY

Q. What are your concerns about transparency in this case?

A. PGE and CUB have different views about the value of transparency. CUB believes that PGE provides a critical public service and the public has a right-to-know about proposed changes in rates, and other aspects of the Company's provision of service. PGE seems to want to limit access to information and presents information in a manner which is sometimes misleading. There are several examples in this case including:

- PGE's case summary does not reflect the actual rate increase that PGE is proposing;
- PGE continues to claim that updates to its power cost case and all of its non-GRC schedules should be confidential;
- PGE opposes providing customers with a good summary of its charges when it bills customers. and

- PGE withholds information that does not present it in a favorable light.

A. Transparency about Rate Increase.

Q. What is the rate increase that PGE is proposing?

A. While PGE has a number of schedules that it typically adjusts in January, the primary components that affect customer rates are the General Rate Case (GRC) increase and the increase associated with Net Power Costs (NPC). The GRC request that PGE is making has two components: a January 2025 increase and a second increase mid-year 2025 associated with the online date of its Seaside battery project. Below are how these three components were forecast in February 2024 in PGE's Opening Testimony and how these three components look today.

Figure 3

	2/29/2024	Today
GRC (January 1, 2025)	6.90%[10]	6.30%[11]
GRC -- Seaside (June, 2025)	1.60%[12]	1.60%
NPC	1.00%[13]	3.10%[14]
Total	**9.50%**	**11.00%**

Q. How does that relate to transparency

A. In its Opening Testimony, PGE included the January 2025 GRC increase, the January 2025 NPC increase, and Schedule 123 (decoupling) and Schedule 126 (power cost variance),[15] which when combined amounted to a 7.4% increase, but

[10] UE 435 – PGE, Response to Bench Request, May 1, 2024.
[11] UE 435 – PGE/1000/ Ferchland - Liddle/8
[12] UE 435 – PGE 500/29 shows 2025 revenue requirement associated with Seaside; UE 435 – PGE 902/1shows the current revenue requirement.
[13] UE 435 – PGE, Response to Bench Request, May 1, 2024.
[14] *Id.* and UE 436 – PGE July Update.
[15] To arrive at the 7.4% figure cited by the Company, it would include the GRC, NVP, decoupling, the PCAM, and Oregon Corporate Activity Tax Recovery, see UE 435, PGE – Response to Bench Request, May 1, 2024.

did not disclose its Seaside increase. Schedules 123 and 126 have current charges this year, but will not next year, so they combine to decrease rates by 0.7% in January 2025.[16] In its summary of the case in Reply Testimony, PGE discusses how it lowered its request from Opening Testimony: "This reduced the total price change for 2025 by 0.6%, lowering the request in this filing to 6.3%."[17] But PGE fails to mention that this is a different set of updates than it original forecast of 7.4% in its Initial Filing in February this year, that its NPC forecasts have risen during this time period, and that the overall projected January 2025 increase is now higher than it was in Opening Testimony. In both its Initial Filing and in its Reply Testimony, PGE fails to include the rate increase it is proposing in June 2025 for Seaside. Reading the summaries of each case would suggest that PGE has reduced its requested rate increase from 7.4% to 6.3%. But this is not true. Overall, PGE is asking the Oregon Public Utility Commission (PUC) to approve higher rates than suggested by its Initial Filing.

At the same time, by not including the rate effect of Seaside, neither projection accurately reflects the rate increase associated with PGE's request in this case. PGE's Initial Filing actually reflected a 9.5% increase, and its current forecast reflects an 11.0% forecast.

Q. What is wrong with the price forecast in Reply Testimony?

A. In Reply Testimony, PGE discusses the 0.6% decrease in this rate filing, but ignores the forecast of power cost which increased in its April 1, 2024, filing[18] and

[16] UE 435 – PGE Response to Bench Request, May 1, 2024.
[17] UE 435 – PGE/1000/Ferchland - Liddle/8.
[18] UE 435 – PGE's Response to ALJ Bench Request, May 1, 2024.

increased again with the Monet Update Filing on July 15, 2024.[19] Thus, the overall projected increase is higher today than it was when PGE filed its Opening Testimony.

Between its Opening Testimony and its Reply Testimony, PGE changed what costs are included in its case summary. This made it look like the proposed rate increase was shrinking, when in reality it has grown.

Q. In Reply Testimony CUB criticized PGE for lack of transparency with regard to rate increases, how did PGE respond?

A. PGE claims that it "works to provide as much transparency as possible balanced with clarity to not result in confusion and inaccurate information."[20] But changing the basis for the projected increase between its Initial Filing in February 2024 and its Reply Testimony in August 2024 to make it look like the projected rate increase is declining, when it is increasing, does not promote transparency, or minimize confusion and instead promotes inaccurate information.

Q. PGE states that the media reporting that the increase had risen to a 10.9%[21] increase caused customers to call PGE believing that this was in addition to the 7.4% increase the Company filed in February.[22] How do you respond?

A. The media attention to this rate hike, and to the 18% increase in January show that there is a clear interest by the public (a public interest) in understanding how utility rates are set, and what future increases are expected. The disconnections this year

[19] UE 436 – PGE's MONET Update, July 15, 2024.
[20] UE 435 – PGE/1200/Sheeran-Wise/34.
[21] The 10.9% included the additional schedules 123 and 126 that PGE included in its 7.4% figure from its February filing. Removing those schedules and including PGE's update from its Reply Testimony raises that figure to 11.0%.
[22] UE 435 – PGE/1200/Sheeran-Wise/34.

in April and May, and continuing in June and July, show that many customers struggled to afford their 2024 winter bills, so it is not surprising that customers are concerned about additional rate increases in 2025. At the same time, CUB recognizes that utility ratemaking is complex; customers are not utility rate making experts – nor should they need to be to know how to manage their budgets with utility rate increases. CUB does not believe that hiding information that the public is interested in is the solution. Indeed, this leads to the kind of frustrations in reporting that PGE cites. Instead, we believe that stakeholders, including CUB, PGE, and the PUC should all strive to educate the public and the media about utility rates and ratemaking.

CUB represents customers. Customers are clearly interested in knowing what rate hikes are coming. CUB regularly provides updates to customers as rate cases are proceeding. We believe this is essential to our role as an advocate for customers.

Q. How did PGE respond to CUB's recommendation that it be required to publicly disclose its price forecasts when it responds to Bench Requests and provide updated power cost forecasts?

A. PGE defends its practice by claiming that price forecasts are confidential:

> The information PGE had was preliminary and could be subject to change until the Commission approved each supplemental schedule. We therefore marked this information as confidential to reduce the confusion that could

be caused from a preliminary, yet seemingly precise, rate change estimate which was subject to change.[23]

PGE is arguing that these figures should be confidential until Commission approval. Last year the January 1 price change for PGE Schedules 102, 105, 115, 128, 131, 135,136, 137 and 152 were on the PUC's December 28th agenda,[24] so PGE is arguing that because forecasts are not final, customers should get 4 days' notice of the actual increase.

While I am not an attorney, my understanding is that confidential information is limited to "a trade secret or other confidential research, development, or commercial information"[25] and a party to a case must make a "good faith effort" to only designate information as confidential that meets this standard.[26] PGE is admitting that it is claiming information is confidential to hide it from public view because it is preliminary and might cause confusion.[27]

CUB is concerned that PGE's lack of transparency has no basis and limits customers' ability to understand and prepare for rate increases that are on the horizon. PGE may believe that there is a benefit to avoiding public discussion of a rate increase before it hits customers, but as the fallout from the 18% increase in January demonstrates, customers notice big rate increases and a public discussion is unavoidable.

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[23] UE 435 – PGE/1200/Sheeran - Wise/35.

[24] PUC – Regular Public Meeting Notice & Agenda, December 28, 2023, (The filings for the schedules that were approved on December 28 were made at the very end of November and were public, so someone who spends the time to look up the price increases associated with 9 schedules and combine those with the GRC and NPC, could have calculated the potential rate increase about December 1.)

[25] *In the Matter of PUBLIC UTLITY COMMISSION OF OREGON, Modifications to General Protective Order,* Docket No. UM 2054, Order No 23-132, Appendix A, 1 (Apr. 10, 2023).

[26] *Id.*

[27] UE 435 – PGE/1200/Sheeran - Wise/35.

Q. Does CUB have a recommendation with regards to transparency around rate increases?

A. Yes. The Commission should order PGE to file a public version of its rate increase forecasts, including forecasts contained in Monet updates and bench requests, unless PGE has a ***valid*** reason for designating that information as confidential. While under the rules, CUB can on a case-by-case basis file motions challenging the designation as confidential, this places a burden on us or other intervening parties, often in the middle of a complicated, time-consuming rate case.

Q. Last year the Commission's directed utilities to make a good faith effort to limit confidential designation to content where it is allowed.[28] If PGE is not following that direction, how will this be different?

A. That was general direction to all utilities but because PGE is not following it, specific direction to PGE is necessary.

B. Transparency on Customer Bills.

Q. In Opening Testimony you criticized PGE's bill design as making it impossible for customers to verify the size of the rate increase and not providing essential information showing how much customers are paying. How did PGE respond?

A. PGE does not acknowledge that its bill design made it impossible for customers to verify that their January bills reflected an 18% rate increase. According to PGE, the primary purpose of the bill is to tell customers how much they need to pay PGE and the date by which PGE expects payment.[29] PGE argued that the Commission does

[28] Order No 23-137, Appendix A at 1.
[29] UE 435 – PGE/1200/Sheeran - Wise/37.

not have the authority to disallow costs just because customers are not getting the value that they are paying for.[30] PGE also argued that providing some sort of unit pricing is inappropriate because not all PGE charges are charged on a per kWh basis.[31] Finally, PGE asserted it will improve bill design by placing all variable power costs in Schedule 125, as a Regulatory Charge, and no longer include any in the Energy Charges section of the bill.[32]

Q. How do you respond to PGE's argument that the Commission does not have the authority to disallow some billing costs?

A. In Opening Testimony, CUB proposed a 20% disallowance to billing costs for residential customers for three reasons:

1. PGE's bill design fails to provide customers with information about PGE's monthly charges that customers should expect;
2. PGE's bill design makes it impossible for customers to identify the size of a rate increase; and
3. PGE's bill design fails to provide customers with the information necessary to make rational energy choices related to energy efficiency, rooftop, community solar, and transportation electrification.

Because this information is essential and should be available on a bill, CUB proposed a disallowance to reflect the fact that PGE's bill design does not provide the value that customers should expect and are paying for.[33] It does not provide adequate service.

[30] *Id.* at 36.
[31] *Id.*
[32] *Id.* at 38.
[33] UE 435 – CUB/100/Jenks/15.

CUB disagrees with PGE that the Commission does not have the power to ensure that customers, in exchange for the rates that they pay, receive adequate service. Residential customers pay $42,258,489.34 for PGE's billing costs, and are not receiving a service that reflects a value of $42 million.[34] Good bill design is part of a utility's obligation to serve. Providing transparent price information is a key value that customers should expect from a utility or any business. For example, customers have many choices as to where to purchase gasoline. To facilitate this, gas stations are required to post in visible signs their prices so customers can easily make choices. There is little doubt that gas stations with higher prices would prefer to obscure their prices. Grocery stores are also required to post unit prices. The Affordable Care Act has requirement about health insurance price disclose to customers. The Oregon Unlawful Trade Practices Act prohibits enticing customers with misleading information about prices.

Similarly, providing billing information that clearly shows how rates are changing is also part of providing adequate service. PGE did not discuss the customer experience in January 2024 where bills were sent out with 46 line items.[35] For many customers, the bills reflected record charges due to an 18% rate increase combined with more than a week of arctic weather. However, it was fundamentally impossible for customers to identify how much of their record bills were caused by price increase and how much of their record bill was due to cold weather. CUB heard from a number of customers who believed that the rate increase was significantly greater than 18%. Many customers thought PGE (as well as CUB and

[34] UE 435 – PGE 903/2.
[35] *See* UE 435 – CUB/100/Jenks/15-21.

the PUC) was misleading them about the size of the rate hike. I am surprised that PGE does not show more concern about this.

Finally, understanding billing charges is critical to ensuring transparent price signals. Customers should be able to understand what decisions are theirs to make, and the benefits and risks they incur in taking particular actions such as investing in energy efficiency, rooftop, and community solar, and transportation electrification.

While PGE believes that the PUC does not have the power to disallow billing costs because of the inadequacy of PGE's billing practices,[36] CUB disagrees. Customers are being overcharged for billing and the Commission has responsibility to address those overcharges through a disallowance of billing costs or a management disallowance for management's failure to ensure customer were not being overcharged for billing. CUB will address the legal issues associated with this in briefing. PGE's billing cost for residential customers is $42,258,48934.[37] CUB proposes a disallowance of 20% or $8,451,698 to be applied against the monthly customer charge (the basic charge) which is where billing costs are collected.

Q. How do you respond to PGE's argument that the primary purpose of the bill is to tell customers how much they need to pay PGE and the date by which PGE expects payment[38]?

A. I have no doubt that from PGE's point of view this is the purpose of bills. But CUB is approaching this case from a customer perspective and customers have greater expectations of businesses. As we have said there are regulations and laws

[36] UE 435 – PGE/1200/Sheeran - Wise/36.
[37] UE 435 – PGE 903/2.
[38] UE 435 – PGE/1200/Sheeran - Wise/37.

concerning price disclosures across large segments of our economy. Customers expect good, accurate, actionable information about their charges. A utility should also provide customers with price information that goes beyond the total cost of a product. CUB does not disagree that PGE's view reflects one purpose of a utility bill, but it is not the only one. Customers should be able to look at their bill and identify the size of a rate increase. Customers should be able to look at their bill for information that helps them consider their energy choices. PGE can, and should, do better.

Q. How do you respond to PGE's argument that providing some sort of unit pricing is inappropriate because not all PGE charges are charged on a per kWh basis?[39]

A. PGE objects to CUB's proposal that they provide customers with the average cost of electricity in a cents/kwh basis. CUB notes that this is a common way to describe electric rates. The PUC Annual Utility Statistics publication provides a summary page that provides residential information for PGE which has four columns: 1) Number of Customers; 2) Revenue Per kWh; 3) the Average Annual Revenue Per Customer; and 4) the Average Annual Usage Per Customer.[40] Later it has a great deal of detailed information, but the summary is pretty simple and expresses utility costs in a cents/kWh basis.

The Company thinks this is an oversimplification of its bill. But there is a great deal of room between stating all charges in a cents/kWh basis and requiring a

[39] *Id.*
[40] CUB/402 – page 8 of Oregon Public Utility Commission, 2022 Utility Statistics (entire document available at https://www.oregon.gov/puc/forms/Forms%20and%20Reports/2022-Oregon-Utility-Statistics-Book.pdf).

customer to add up more than 20 line items in order to understand their bill. Exhibit CUB/403 is my current PGE bill. The Company could summarize the bill in the following manner:

Figure 4

Monthly Flat Charge		$13.00
Usage Charges	18.398 cents X 487 kWh =	$89.60
Taxes and Fees		$5.43
Total		$108.08

When PGE changes rates they could have an additional column and label one, Old Rates, and the other New Rates (as of June 1, 2025).

Q. In response to CUB's criticism of PGE's bill design, PGE proposes that all net variable power costs be recovered in Schedule 125, rather than having them split between base rates and Schedule 125. Does this respond to CUB's concern?

A. It improves the bill a bit. Currently new power costs are placed in base rates in years with a GRC. Between GRCs, the difference between the amount in base rates and the forecast of annual net power costs is collected through Schedule 125. In last year's GRC, the movement of net power costs from Schedule 125 to base rates is one of the items that made it difficult for customers to identify how much their rates changed. But it doesn't solve the problem associated with January 2024 billing which had 46 line items, with rate changes to the basic charge, the energy use charge, the transmission charge, the distributions charge, and Schedules 102, 105, 118, 123, 135, 136, 137,146, 150 and 152. To understand the price increase customers would have to add each of these elements. In addition, PGE bills do not

help customers make rational energy choices. This is not a consumer friendly bill. This does not provide customers with the value that they deserve or are paying for.

Q. What is CUB's recommendation with respect to residential customer billing?

A. CUB believes that the Commission should find that PGE is charging customers for adequate service while providing inadequate service. PGE billing cost for residential customers is $42,258,48934.[41] CUB proposes a disallowance of 20% or $8,451,698 to be applied against the monthly customer (or basic) charge which is where billing costs are collected. In addition, CUB recommends that before PGE is allowed to implement a new rate for any residential schedule, the PUC should direct PGE to file with the Commission, and copy all parties to this proceeding, a plan on how it intends to communicate the rate change. Finally, the Commission should consider opening a rulemaking to establish service quality standards for residential billing.

C. Transparency with regard to storm related outages

Q. How did PGE respond to CUB's concerns about its response to the storm related outage?

A. PGE's response was disappointing. PGE's initial response seemed to be that, while CUB was complaining about rate hikes, we were requesting PGE increase investment in outage reporting systems,[42] increase the number of field crews available to respond to outages,[43] and increase the Information Technology and Solutions staff available to manage high-volume activities during major events.[44]

[41] UE 435 – PGE 903/2.
[42] UE 435 – PGE 1600/Cloud – Albi – Putnam /38.
[43] *Id.*
[44] *Id.* at 38-39.

PGE also claimed that the January 2024 storm was "unprecedented and historic event",[45] but the 2021 storm was much worse.[46] In response to CUB's concern that it took PGE months to identify the number of customers who were affected by the outage, PGE pointed to a number of problems with the Company's Outage Management system.[47] PGE also notes that it is taking a number of steps to improve its Outage Response.[48]

Q. How does CUB respond to PGE accusing CUB of calling for additional rate hikes?

A. CUB did not call for additional rate hikes. CUB's Opening Testimony was responding to customers' experience since we have heard from many customers who were quite unhappy with the experience that occurred during the January 2024 outage. CUB reviewed PGE Outage Reports and conducted discovery to identify whether there were problems with PGE response to the outage. We found that PGE had fewer crews in the field than it had during the 2021 February Ice Storm and kept revising the numbers of customers who were out at the peak of the storm. CUB also raised concerns about the Company's outage management system. CUB was not asking for higher rates. Rates have increased significantly since the 2021 storm. The reduction in restoration crews available, particularly contract and mutual assistance crews, did not lower rates, so it is unlikely to be a significant driver of rates. PGE is taking and proposing to take a number of steps to improve the functioning of the outage management system and its overall outage response, yet

[45] *Id.* at 38.
[46] *Id.* at 39.
[47] *Id.* at 40-42.
[48] *Id.* at 42-43.

PGE is not listing that as a significant driver of the higher rates it is proposing in this rate case. Just as importantly, customers are paying for PGE's Outage Management System and should have an expectation that it performs well. This is again an issue of whether customers are getting the appropriate value out of the services that we are funding.

Q What were the problems with PGE's Outage Response?

A. PGE did a good job listing these problems:

- The magnitude of the storm event resulted in a large volume of outage data being input into PGE's Outage Management System (OMS) from multiple data sources/systems. This resulted in thousands of outage records for several days over the course of the event that needed validation and potential correction.[49]
- PGE's Outage Management System contained a software defect. PGE had to repeatedly restart the system until a hotfix from the vendor Oracle could be applied.[50]
- The Outage Management System configuration was designed to accept outage data from meter alarms, even when the alarm times were unknown or inconsistent with the actual outage event times.[51]
- Customer outage reporting channels, including the public website, phone application and interactive voice assistant (IVA) systems, allowed customers to submit outage reports, which were automatically registered as actual outages in the Outage Management System. During the storm, the system received dozens of duplicate reports from the same customers.[52]

[49] *Id*. at 40.
[50] *Id.*
[51] *Id.* at 41.
[52] *Id.*

- PGE discovered a technical issue in the data correction process in the Outage Management System that did not assign customer meters to the correct device when switching occurred.[53]

Q. What is PGE doing to correct these issues?

A. PGE clearly realizes that these issues are significant and is taking a number of steps to improve its Outage Management System and Outage Response. As PGE explains:

- PGE is upgrading its Oracle Outage Management System, evaluating the OMS configuration and logic for meter alarms, improving functional capabilities to improve the accuracy of meter alarms, improving the process for filtering duplicate customer reports sourced from multiple channels, and developing automated logic to handle website submissions more effectively.[54]
- PGE is working to expand the number of people trained to perform this outage validation and review work.[55]
- PGE is assessing potential future resource needs to accommodate large events and strategizing ways to make technological improvements to the systems and develop more automated reports to reduce the time it takes to provide reliable outage data as requested.[56]
- PGE established an Outage Improvement Group (OIG) in 2023 that began reviewing and updating outage response procedures to provide greater outage response efficiency. This will provide crews with a better understanding of repairs that will be required using PGE's mobile mapping and data acquisition application.[57]

[53] *Id.*
[54] *Id.* at 42.
[55] *Id.*
[56] *Id.*
[57] *Id.* at 42-43.

- PGE recently completed a comprehensive outage management process analysis with a consulting group. The analysis included evaluating processes, systems, and reports in the IT, operations, customer, and GIS organizations within PGE. Recommendations from this analysis will be applied in phases, both short-term and long-term, to improve PGE's ability to more accurately capture and communicate customer outage information in a timely manner.[58]

Q. Does CUB have any additional concerns?

A. We are encouraged that PGE is making efforts to improve its Outage Management System and Outage Response. Obviously, when the Outage Management System must be repeatedly restarted, it is harmful to the Outage Response. But we still have a concern about transparency. PGE Major Event reports to the Commission said nothing about problems with the Outage Management System.[59] These reports are supposed to include "factors that impacted restoration of service,"[60] such as the problems with the Outage Management System. PGE's reports include a section on Post Event Activities but it says nothing about PGE's efforts to improve their Outage Management Response.

Q. Do you have a recommendation related to Outage Management?

A. PGE Outage Response clearly had problems, many related to its Outage Management System. Customers have paid to develop this system and should have expectations that it has been developed and tested to ensure that it functions well when there is an outage. CUB could propose a disallowance due to the fact that customers have spent millions on an Outage Management System that has

[58] *Id.* at 43.
[59] See PGE – RE 112 Major Event Exclusion, February 21, 2024; PGE – RE 112 Major Event Exclusion, March 1, 2024; and PGE -- RE 112 Supplemental Major Event Exclusion.
[60] OAR 860-023-0161.

problems, including having to be regularly restarted. However, CUB is encouraged that PGE is addressing these issues. CUB is encouraged that PGE's Reply Testimony detailed the problems with its Outage Response and the Company is working to fit these problems. But CUB does believe that PGE's Major Event Reports should be transparent. Acknowledging problems and proposing solutions to those problems is exactly what should be contained in such a report.

D. Other Transparency Issues

Q. Does CUB have other concerns about PGE's transparency?

A. Yes. Over the years, we have seen PGE use protective orders to hide information that is embarrassing to the Company, but in CUB's mind the information is unlikely to be a trade secret or legitimately confidential.[61] Rather it is truthful and in the public interest to be made available. "Sunlight is said to be the best of disinfectants; electric light the most efficient policeman."[62] In the middle of rate cases it is difficult for CUB to challenge these confidentiality designations. There is a need to address PGE's abuse of confidentiality.

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[61] UE 416 – CUB/300/Gehrke/1-9.

[62] Justice Louis D. Brandeis, *Other People's Money,* 62 (National Home Library Foundation ed. 1933), *available at* https://louisville.edu/law/library/special-collections/the-louis-d.-brandeis-collection/other-peoples-money-by-louis-d.-brandeis.

IV. UTILITY REGULATION

Q. In the Introduction, you said that CUB and PGE had fundamental disagreements about the regulatory process. Please explain.

A. PGE and CUB have fundamental disagreements about the regulatory process. We disagree on the goal of ratemaking, the purpose of a test year, and the power of the Commission, rather than the utility to establish the rate effective date for rate increases and the base year for a test year.

A. Goal of Utility Ratemaking

Q. What is the disagreement between CUB and PGE about the goal of ratemaking?

A. PGE discusses the "regulatory compact," and "cost of service" regulation in a manner that is focused on cost recovery.[63] PGE references ORS 756.040(1):

> Rates are fair and reasonable for the purposes of this subsection if the rates provide adequate revenue both for operating expenses of the public utility . . . and for capital costs of the utility, with a return to the equity holder that is (a) Commensurate with the return on investments in other enterprises having corresponding risks; and (b) Sufficient to ensure confidence in the financial integrity of the utility, allowing the utility to maintain its credit and attract capital.[64]

PGE interprets this to suggest that this is the fundamental goal of utility regulation: recovery of a utility's costs, with a return on equity that is commensurate with the return of similar enterprises. From a utility's perspective, this certainly is what PGE would like out of the regulatory process. But PGE fails to note the three sentences preceding this section of Oregon law:

[63] UE 435 – PGE/1100/Kliever - Liddle/23.
[64] *Id.* at 2.

> …the commission shall represent the customers of any public utility or telecommunications utility and the public generally in all controversies respecting rates, valuations, service and all matters of which the commission has jurisdiction. In respect thereof the commission shall make use of the jurisdiction and powers of the office to protect such customers, and the public generally, from unjust and unreasonable exactions and practices and to obtain for them adequate service at fair and reasonable rates. The commission shall balance the interests of the utility investor and the consumer in establishing fair and reasonable rates.[65]

I am not a lawyer, and we can leave to briefing to discuss the legal interpretations of this, but it is important to note that the Commission's approach to ratemaking is not supposed to be from the utility's perspective because the Commission is required to represent the customers and to ensure "adequate service at fair and reasonable rates." Ratemaking is about setting fair and reasonable rates, not cost recovery. The Commission describes this as providing the "opportunity" for a utility to earn a reasonable return.[66] The Commission represents customers and sets fair and reasonable rates that reflect adequate service after examining the utility's costs, but PGE has the responsibility to manage its investments and other costs in a manner that is reflective of the rates the Commission has set. The PUC does not manage the utility. It does not decide when to file a rate case. It does not set priorities for utility investments. There is nothing inherent about cost of service regulation or the regulatory compact that requires the Commission to represent the needs of the utility and make cost recovery the primary focus on the regulatory process.

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[65] ORS 756.040(1).
[66] PUC-- see https://www.oregon.gov/puc/utilities/Pages/Rates-Tariffs.aspx.

Q. PGE claims that the regulatory compact forms the basis for the cost-of-service ratemaking principles employed by regulatory commissions. How do you respond?

A. This has come up in the current NW Natural and PacifiCorp rate cases as well. It seems that whenever utilities are seeking large rate hikes that place a burden on customers, they claim that there is an unwritten regulatory compact that requires that they get the money they are asking for. But CUB's proposals on the rate implementation date and on rate shock do not deny cost recovery, they may shift the timing of some cost recovery and could lead to some regulatory lag but are designed to allow for the utility to recover its costs. In addition, if PGE knows these are Oregon's approach to regulation, it has tools to avoid negative outcomes because it controls the timing and frequency of rate cases. It can manage its investments and other costs to these mechanisms.

In addition, the regulatory compact does not represent a fundamental principle of utility ratemaking:

> Framing utility regulation as a "compact" is a rhetorical device that has been invoked by industry to argue against competition and in favor of rate increases and cost recovery for investments that did not benefit ratepayers. While several PUCs have used the term "regulatory compact" as a shorthand description of regulation, no court or PUC has concluded that a utility is legally entitled to relief, such as cost recovery, under a

"regulatory compact." On the contrary, PUCs and courts have explicitly rejected such arguments.[67]

The idea of a "regulatory compact" grew out of utility proposals to recover stranded costs associated with abandoned nuclear power plants:

> The first PUC order or court decision to include the phrase "regulatory compact" was published in 1982 by the Massachusetts Department of Public Utilities (DPU). That DPU order recounts the history of a cancelled nuclear plant and decides whether the IOU may recover the costs of the failed project from ratepayers. When regulators across the country debated such requests in the 1980s, and a decade later when they considered restructuring the industry, IOUs and some PUCs used the "compact" framing in debates about stranded-cost recovery and protections from competition. This metaphorical compact is rooted neither in history nor in law.[68]

However, as opposition to recovery of costs associated with canceled nuclear power plants grew and many states adopted laws that codified the "used and useful" standard, the idea that a regulatory compact required stranded cost recovery receded:

> Many PUCs reached similar conclusions in the 1990s about whether any "regulatory compact" dictates stranded cost recovery. Washington regulators determined that "[t]here is no agreement or compact, stated or unstated, that commits the Commission to ensure that [the utility's] capital will be recovered fully regardless of any changes in the economic, technological, or regulatory environment." The Pennsylvania PUC concluded that it "is not required to grant a utility recovery of 100% of its claimed stranded costs upon either constitutional principles or a 'regulatory compact' theory." In Vermont, regulators found "no basis in law to support the existence of a regulatory compact that constitutes a binding and enforceable contract with the State." And the Texas PUC rejected a utility's arguments, stating that "[t]here is no written contract by

[67] *See* Ari Peskoe, Utility Regulation Should Not Be Characterized as a "Regulatory Compact," HARV. ENVTL. POL'Y INITIATIVE, 1 (2016), *available at:* http://eelp.law.harvard.edu/wp-content/uploads/Harvard-Environmental-Policy-Initiative-QER-Comment-There-Is-No-Regulatory-Compact.pdf.

[68] *Id*. at 5.

which the State of Texas promised to pay a utility a reasonable return on and of its generation investment."[69]

There is no regulatory compact that CUB is aware of that guarantees that the utility has the power to decide the date that rates will change. And to the degree that there is a regulatory compact, part of that compact has to be that in exchange for a monopoly service territory and an authorized rate of return on invested capital, utilities will manage their costs and their investments to ensure affordable rates.

B. Purpose of a Test Year

Q. Can you explain how PGE and CUB disagree on the purpose of a test year?

A. Yes. PGE seems to believe that the purpose of the test year is to establish the costs that the utility can recover during the first 12 months after the rate effective date. It says that it cannot move the rate effective date beyond January 1, 2025, "because its operations are structured around a calendar year financial planning model."[70] CUB is not suggesting that PGE must change its operations, or it financial planning model. By absorbing a little regulatory lag, PGE can move its rate effective date out of the winter without changing its calendar year financial planning model. And, if PGE wants to avoid that regulatory lag, then PGE can adjust its annual financial planning model. All CUB is recommending is that rate increases be implemented after the winter is over to avoid adding an addition hardship to customers who have struggled to pay their winter heating bills. While CUB's proposal in this case injects regulatory lag, how PGE implements such a policy in the future is up to PGE's discretion.

[69] *Id.* at 8.
[70] UE 435 – PGE/1100/Kliever - Liddle/33.

Test years are an important component of utility rate setting. But test years can be either historic test years or a future test year. Many utility commissions use historic test years, based on a belief that a forward test year based on forecasts can too easily set rates in excess of costs and it is better to look at historic costs, adjusted for known and measurable changes. Oregon uses a forward test year, but that does not mean that the first 12 months of the rate effective date are the same as the test year. A forward test year simply means that the 12 months we are using to identify the expected ongoing costs of utility has not happened yet. In UE 426, Idaho Power used a calendar year 2024 test year[71] to establish rates that will go into effect on October 15, 2024.[72] In that case, the forward test year was the calendar year 2024. In this case, the test year is the calendar year 2025 and CUB is recommending that rates go into effect when the Seaside project comes on-line which is expected to be June 2025.

PGE provides a table which shows that every rate case since 2000 has used a calendar year test year. CUB is not asking PGE to change its test year. As the Idaho Power example shows, a utility can implement rates midway through a test year.

C. Rate Effective Date

Q. PGE opposes CUB's proposal to move the rate effective date of this case to coincide with Seaside. What is your response?

A. PGE fails to recognize that its large rate increase this year, combined with cold winter weather, put an untenable burden on customers. This led to many customers being unable to pay their bills and an unprecedented number of shut offs.[73] PGE

[71] UE 426 – Idaho Power/100/Grow/20.
[72] UE 426, -- Memorandum adopting procedural schedule (Jan. 12, 2024).
[73] CUB/401.

does not recognize that an additional, approximate 10% increase this January risks another year of misery for many customers. Instead, PGE slams CUB for proposing something that the Company alleges is illegal.[74] CUB will address why our proposal is reasonable and entirely legal in briefing.

PGE also claims that CUB is proposing that **all** of PGE's investment should be subject to regulatory lag,[75] that CUB is departing from established norms,[76] that CUB is voiding the statutory suspension period while a tracker does not void the statutory suspension period[77] and that CUB is rejecting the cost-of-service model.[78] PGE expresses a willingness to consider such an approach in the future, but makes no commitment and claims that its really, really hard.[79]

Q. Is determining the rate effective date part of determining the revenue requirement?

A. No. When a utility files a tariff, the Commission takes about 30 days to consider it and decide whether to suspend it for nine additional months. During those nine months, the Commission reviews the Company's costs and determines the revenue requirement that has been justified and issues a final order identifying the allowed revenue requirement, the rate spread associated with that revenue requirement, and the rate effective date or dates associated with rate changes. PGE's GRCs often identify multiple rate effective date because of the inclusion of trackers. In this case, PGE wants the Commission to approve three rate effective dates: January 1, 2025,

[74] UE 435 – PGE/1100/Kliever - Liddle/36.
[75] *Id.* at 31-36.
[76] *Id.* at 34.
[77] *Id.* at 35.
[78] *Id.* at 36.
[79] *Id.* at 35.

for all costs that are used and useful, a tracker for Constable, and a tracker for Seaside. The first may be at the end of the suspension period but the other two extend well beyond the end of the suspension period.

Q. How do you respond to PGE's claim that CUB is proposing that all of PGE's incremental investment should be subject to regulatory lag?

A. PGE is wrong. First, the purpose of our proposal is to reduce the burden on customers that can come from large winter rate increases. CUB has worked to understand residential energy demands, and it is clear that January is the worst possible time for a rate increase. Second, CUB is trying to align the rate increase with PGE's Seaside battery project, the largest single investment in this rate case. CUB may be the only party that supports adding Seaside to rates in June without regulatory lag. This is on the condition that the rate hike in January is delayed. Third, as we discussed above, the Commission uses a customer perspective to set just and reasonable rates and the utility must manage itself to those rates. If the Commission establishes in this case that January 1, is not the appropriate time for rate increases, PGE can take on the really, really hard work to move its general rate increase outside of January. CUB is not seeking some sort of new policy that will require regulatory lag on all investments. CUB is seeking to reduce the number of shut offs and the hardship that is placed on customers by moving large rate increases away from the middle of winter. The Company can continue to seek rate increases, and the Company can time its rate cases in whatever manner it wants to reduce regulatory lag, as long as it avoids large winter increases.

Q. How do your respond to PGE's argument that CUB is departing from established norms? [80]

A. I disagree. But even if it was true, the magnitude of the problem requires a change. PGE says that it nearly always changes rates on January 1. But PGE is not the only utility that is regulated by the PUC. Idaho Power does not use January 1. Gas companies do not use January 1. January 1 is the traditional rate implementation date for two of the six regulated utilities in the state. I recognize that implementing rates on January 1, combined with trackers works extremely well for PGE. PGE gets to implement its increases in the period with the highest volume of sales, so it gets the best short term cash flow gain, increasing earnings. Starting the year with a positive gain in earnings is a nice story to tell investors. And there is no cost to PGE because the Commission has liberally allowed the Company to use trackers to avoid regulatory lag with all of its large investments. While many utilities try to time rate cases to align with large new capital investments to avoid regulatory lag, PGE does not have to. It always aligns its rate cases with the middle of winter, pushing up earnings and can still avoid regulatory lag on large new capital investments.

So, while I disagree that this is the regulatory norm in Oregon, I agree that it is the established norm for PGE. But customers, as well as many public officials, including the Mayor of Portland, are demanding that we do things differently.[81] And the question in this case is do we keep an approach that works really well for PGE, or do we move to an approach that is much better for customers.

[80] *Id.* at 34.
[81] UE 435 – City of Portland Mayor Ted Wheeler's Comments (Aug. 27, 2024).

Q. How do you respond to the PGE's argument that CUB is voiding the statutory suspension period while a tracker does not void the statutory suspension period?[82]

A. PGE seems to be claiming that the statutory suspension period is 10 months, unless the utility is asking for recovery of a cost that is not yet used and useful. CUB will discuss this more in briefing, but CUB is not asking the Commission to violate the suspension period. CUB expects the Commission to process this case and issue a final order by the end of the suspension period.

Q. How do you respond to PGE's claim that CUB is rejecting the cost-of-service model?

A. No, we are not. CUB has examined PGE's rate case and proposed some adjustments, including an adjustment to the rate effective date, but nothing CUB is proposing does anything other than establishing rates based on an analysis of PGE cost-of-service. Of course, we are looking at it from a customer perspective not a shareholder perspective.

Q. PGE expresses a willingness to consider such an approach in the future, but makes no commitment and claims that it really, really hard.[83] How do you respond?

A. After the results of last January, it is clear that this current approach with PGE simply does not work for customers. CUB approached PGE in January and urged them to delay this case and end its practice of January rate hikes. If PGE is not willing to do things differently after the current approach led to thousands of

[82] *Id.* at 35.
[83] *Id.*

customers being disconnected due to unaffordable bills, CUB is unwilling to allow them to take many more months or years contemplating how to do things differently. CUB thinks the answer is simple.

If the Commission agrees with us that large increases associated with General Rate cases should not be scheduled in January, then let's stop approving January rate hikes. PGE will get the message and PGE will adapt.

Q. What is CUB's current proposal for the rate effective date?

A. CUB proposes to move the rate effective date to coincide with the date Seaside comes online. This proposal was made to accommodate two things: move the rate effective date out of the winter and allow recovery of Seaside without regulatory lag. We actually thought it was a good balanced approach that took in the needs of customers and shareholders. But the two issues can be decoupled.

CUB urges the Commission to move the rate effective date out of the winter months when bills are high and cold weather can make them dramatically higher. The Commission could accomplish this piece of what we were proposing by choosing any rate effective date after April 1, 2025.

CUB proposed June 2025 to allow Seaside into rates when it becomes used and useful (assuming it comes online in June). PGE has been able to use trackers to avoid regulatory lag on major new investments, and it is one of the reasons that it has been able to align rate hikes with January. CUB believes it is a better policy to require utilities to generally align their rate cases with the rate effective date of major assets, when those assets do not come online in the middle of winter. In some respects, our approach was designed to create an incentive for PGE, who controls

the timing of its rate cases, to align them with the rate effective date of major assets. However, CUB's support for the Seaside tracker is linked to aligning the rate effective date for the entire case with that tracker in order to encourage PGE to change its practice of combining big winter increases with trackers. If the Commission rejects moving the rate effective date to coincide with the Seaside tracker, CUB no longer supports allowing Seaside in rates in June. At that point, rather than providing an incentive to change how PGE manages the timing of rate changes, the decision would reinforce that there is no need for PGE to do anything differently than it did last January. The base year for a test year.

D. Base Year

Q. What is the issue with the base year for a test year?

A. PGE built this case based on its 2024 budget.[84] AWEC objects and believes that test years should be based on the most recent actual results which is 2023.[85] Staff and AWEC also argue for adjustments based on 2023 actuals. While CUB did not weigh in on this issue in Opening Testimony, we support AWEC's and Staff's use of 2023 actual as the basis for many adjustments in this case. We believe that test years should always begin with actuals. PGE says parties are using 2023 actuals to relitigate the last rate case,[86] but this is absurd—2023 actuals were not available during the last case. In UE 416, no parties were making recommendation based on 2023 actuals. Opening Testimony for Staff and Intervenors in that case was June 13, 2023.[87] This was halfway through 2023. It is incorrect to say that adjustments based

[84] UE 435 – PGE/1300/Batzler – Meeks/8.
[85] *Id.*
[86] *Id.*
[87] UE 416 – Prehearing Conference Memorandum, 2 (March 13, 2023).

on 2023 actuals are somehow relitigating issues. UE 416 was based on 2022 actual results and the outcome of that case would have been different if parties had access to 2023 actuals.

More importantly, accuracy requires that utility test years should be based on actual results. There is no doubt that some of the forecasts used to build a utility's test year will be wrong. Building budgets on budgets means that we are reincorporating those forecast errors into a new year.

V. CAPITAL PLANNING AND SPENDING

Q. In Opening Testimony CUB raised concerns about PGE's capital spending. How did the Company Respond?

A. CUB is concerned that PGE is attempting to maximize its capital investments and use this to attract investors. PGE makes a lot of arguments against this but offers little evidence to suggest that CUB has gotten anything wrong. According to PGE:

- PGE delays needed investments as long as reasonably possible in an effort to control cost increases,[88] and
- PGE's capital investments are necessary to serve customers.[89]
- CUB implicitly argues that PGE must demonstrate and document the costs not actually incurred.[90]
- Project controls and governance help ensure that our overall capital investment levels remain within the overall budget.[91]

[88] UE 435 – PGE/1100 Kliever-Liddle/9.
[89] *Id.*
[90] *Id.* at 14.
[91] *Id.*

- The timing and completion of capital projects can impact whether PGE meets its target budgets. Delays, changes in project scope, material escalations, or accelerated timelines can lead to deviations from the budget.[92]
- As project execution and timing changes, PGE makes strategic adjustments to other prioritized projects within the capital portfolio to meet its annual capital plan, such as pulling future year projects that were below the funding line into the current year, to balance and meet PGE's multi-year capital plan.[93]
- CUB claims that PGE's price increase is unnecessary because earnings are increasing.[94]

Q. How do you respond to PGE's argument that it works hard to constrain the amount of capital spending to a reasonable escalation, and indeed delays needed investments as long as reasonably possible in an effort to control cost increases?[95]

A. PGE argues two issues in its response:

1. PGE holds capital spending to a reasonable escalation; and
2. PGE delays needed investments as long as reasonably possible.[96]

PGE offers no evidence to support the first point, and PGE contradicts the second point.

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[92] *Id.*
[93] *Id.*
[94] *Id.* at 18.
[95] UE 435 – PGE/1100/Kliever-Liddle/9.
[96] *Id.*

1. Reasonable Escalation

The evidence CUB submitted in Opening Testimony shows that capital spending is not held to a reasonable escalation. In 2019, PGE established a target for 2023 capital spending of $500 million.[97] By February of 2023, that target had grown to $1.21 billion.[98] As it continued to grow through 2023, the target ended up at $1.475 billion, almost three times where it was when it was established in 2019.[99] CUB Exhibit 404 shows PGE's recent capital spending. In 2022, PGE capital spending was approximately $790 million.[100] In 2023, it nearly doubled to approximately $1.37 million.[101] From a customer perspective, a 73% escalation in one year is not reasonable and does not represent the time value of money. And there is no reason to believe that this will not continue to grow. As CUB demonstrated in Opening Testimony, capital budgets for individual years keep growing, including during the forecast year. PGE's 2023 capital budget grew by more than $200 million during 2023.[102] PGE's current Request for Proposals (RFP) shortlist includes 3 GW of nameplate renewable and capacity resources and 45% of those bids include a component of built, transfer ownership.[103] The results of this RFP will almost surely increase PGE's capital forecast. PGE has signed a

[97] UE 435 – CUB/112.
[98] *Id.*
[99] *Id.*
[100] UE 435 – CUB/404.
[101] *Id.*
[102] UE 435 – CUB/112.
[103] PGE's recent earning call, *see* https://seekingalpha.com/article/4707314-portland-general-electric-company-por-q2-2024-earnings-call-transcript

memorandum of understanding to invest in North Dakota transmission but none of that has been added to its capital investment forecast[104].

2. PGE delays needed investments.

While claiming that it delays needed investment as long as reasonably possible, PGE itself makes clear that this is not true. PGE says that if an investment is delayed for some reason, something else is pulled from future plans to replace it.[105] In other words, once PGE sets a capital target and announces that target to investors, it does everything possible to meet or exceed that target. Rather than delay an investment as long as reasonable possible, PGE will accelerate and make an investment before it is necessary in order to meet its spending target.

Q. How do you respond to PGE's argument that PGE's capital investments are necessary to serve customers.[106]

A. CUB does not dispute that it is necessary for PGE to make capital investments to serve customers. CUB recognizes that examining capital investments to ensure that they are truly necessary to serve customers is an important part of prudence reviews and there is a difference between cost effectiveness and need. PGE might be able to show that a new capital investment in a fast food restaurant is cost effective, but they would not be able to show that it was necessary to serve electric customers. For example, PGE will have to show that investing in transmission in North Dakota

[104] *Id.*
[105] UE 435 – PGE/1100/Kliever-Liddle/15.
[106] *Id.*

is necessary to serve customers, not just that it is an economic opportunity to make a profitable investment.

CUB's approach in this case has been to look at PGE's overall approach to capital spending, not examine each individual investment, including hundreds of millions of dollars in distribution investment. With four general rate cases happening simultaneously and PGE making more than $1 billion of investment per year, PGE has overwhelmed the ability of parties to examine each individual investment to ensure that it is both cost effective and necessary. Our examination raises concerns over whether PGE is managing the timing of investments in a manner that maintains affordability and whether PGE has adequate oversight of capital investment. PGE's approach emphasizes trying to ensure that it meets its investment targets and those targets are always growing without giving much consideration to whether customers can afford those investments. The role of its Capital Review Group seems to be to facilitate capital spending, not to constrain it.

Q. How do you respond to PGE claiming that CUB implicitly argues that PGE must demonstrate and document the costs not actually incurred in order to avoid disallowances to employee compensation.[107]

A. When a utility claims that CUB is "implicitly" saying something, there is a good chance that it is misrepresenting CUB's position. In Opening Testimony, PGE claimed it has "a bottom-up and top-down approach to cost management, with multiple layers of controls";[108] that project with a variance of more than 10% "may

[107] *Id.* at 14.
[108] UE 435 – PGE/211/Batzler - Ferchland/1.

be required to limit or reduce funding";[109] "[i]n some cases, funding for projects will be paused if there are concerns with cost management, scope, or timeline";[110] and

> to the extent funds in excess of the annual approved amount are requested, the following tools are available: seek reallocation of funds between BSGs; reject funds requested; require budget cuts across other projects; access reserves funding within the BSG; access funds called "non-budgeted CEO matters" which is an amount of reserve funding that can be used in emergency situations or as temporary allocations; or go to the BOD for additional funds.[111]

PGE asserted in Opening Testimony that it has good systems to control spending but offered little evidence to support these statements. CUB conducted discovery to examine the multiple levels of cost control. What CUB found was different than what PGE's testimony represented:

- **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**.[112]
- **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**.[113]
- **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]**.[114]

[109] *Id.*, at 9-10.
[110] *Id.*
[111] *Id.*, at 2-3
[112] CONF CUB/114.
[113] *Id.*
[114] *Id.*

CUB did not ***implicitly*** say that a utility must "demonstrate and document the costs not actually incurred." CUB ***explicitly*** said that PGE's claims about cost control were untrue.

Q. How do you respond to PGE's claim that project controls and governance help ensure that our overall capital investment levels remain within the overall budget.[115]

A. As we discussed above it is not true. It is an assertion but is not supported by evidence.

Q. How do you respond to PGE's claim that the timing and completion of capital projects can impact whether PGE meets its target budgets. Delays, changes in project scope, material escalations, or accelerated timelines can lead to deviations from the budget[116].

A. This is misleading. PGE's goal is to meet its budget targets. If a project costs less than projected or cannot be completed, PGE will reallocate the money and spend it on something else. PGE can ***exceed*** its budget targets but works to ***meet*** its budget targets.

Q. How do you respond to PGE's claim that as "project execution and timing changes, PGE will make strategic adjustments to other prioritized projects within the capital portfolio to meet its annual capital plan, such as pulling future year projects that were below the funding line into the current year, to balance and meet PGE's multi-year capital plan"?[117]

[115] UE 435 – PGE/1100/Kliever-Liddle/9.
[116] *Id.* at 15.
[117] *Id.*

A. This statement is true. If there is a delay in a project, PGE will pull in a project from a future year to make sure that PGE meets its budget target.

Q. How do you respond to PGE's argument that CUB claims that PGE's price increase is unnecessary because earnings are increasing?[118]

A. CUB did not claim that. PGE is misrepresenting CUB's position**.** If it was true, CUB testimony would recommend no increase in PGE's rates. PGE is referencing CUB's testimony showing that PGE shareholders had an excellent first quarter – that the combination of a big rate increase combined with unusually cold weather increased revenue and earnings *in the first quarter* as compared to the prior year. PGE does not dispute this. CUB was discussing the beginning of the year when the combination of the big rate increase and cold weather hit customers with record bills while simultaneously increasing earnings for shareholders.

Q. PGE pushes back against CUB's suggestion that PGE's corporate culture may be part of the problem, claiming PGE claims that the reference to PGE employees asking "how to" not "why not" was in reference to meeting customer needs,[119] not new investments. How do you respond?

A. Customer needs include the need for affordable rates, the need for gradualism when it comes to rate changes, and the need to be able to afford winter heating bills. If CUB misinterpreted these remarks, it is because we see a utility that has a capital budget that is growing at an unstainable rate, that is not exercising discipline to manage budgets and spending, while disconnecting customers at the highest levels

[118] *Id.* at 18.
[119] *Id.* at 13.

ever reported. Finally, we note that PGE's Reply Testimony did little to address the need for affordable rates, the need for gradualism when it comes to rate changes, and the need to be able to afford winter heating bills. Customers are now facing a larger increase in January 2025 than when PGE filed its case last February.

Q. Does your recommendation remain the same?

A. Yes. PGE has flexibility when it comes to the timing of capital investments, and it uses this flexibility to ensure that it is meeting its spending targets, not to ensure that its rates are affordable. CUB believes that PGE's approach to capital spending is not properly balanced between the needs of its customers, including the need to keep winter bills affordable, and the wants of investors to see continual growth in investment opportunities. CUB is recommending two revenue requirement adjustments.

1. PGE includes $3.668 million in its revenue requirement to pay for company stock for its employees. This should be removed. PGE is already too focused on benefiting investors. Stock awards are designed to align the interests of employees and shareholders which does nothing to support affordable service to customers. In addition, CUB agrees with AWEC that providing stock to employees is inappropriate to include in revenue requirement because it does not require any cash outlay.[120]

2. PGE includes 50% of cash incentives to employees in its test year revenue requirement recognizing that employees are serving both the interests of shareholders and the interests of customers. CUB believes that PGE is no longer balancing these sets of conflicting interests properly. CUB is proposing that until PGE can demonstrate that customers' interests are properly weighed when determining capital spending targets and the timing of rate cases, it should be

[120] UE 435 – AWEC/100/Mullins/46.

required to pick up 75% of incentives. Correspondingly CUB proposes to move the incentive level charged to customers from 50% to 25% by adjusting the test year amount charged to customers from $14.257 million to $7.128 million.[121] The combination of these two adjustments would reduce the revenue requirement associated with incentives by $10.796 million.

VI. STAFF'S RATE CAP AND CUB'S RATE SHOCK PROPOSAL

Q. Staff has proposed a 3% rate increase cap in this case. How does that proposal align with CUB's Rate Shock Proposal?

A. CUB supports Staff's 3% rate increase cap and sees the two proposals as complimentary. But it is important to recognize that, while they are complimentary, the two proposals address issues that are distinct. CUB believes that Staff's proposal is an attempt to address concerns related to affordability in relationship to this case which immediately follows the 18% residential increase in January 2024.[122] Staff believes that rate increases should reflect gradualism.[123] Staff's proposal is to protect the energy security of current utility customers.[124] Staff's proposal addresses this case only, though Staff is calling for a reexamination of current rate spread which Staff believes should take into account affordability, and energy justice considerations.[125] CUB shares these concerns and supports Staff's three percent cap.

[121] UE 435 – PGE/300/Trpik-Mersereau-Batzler/22.
[122] UE 434 – Staff/200/Scala/6.
[123] *Id.* at 17.
[124] *Id* at 38.
[125] *Id.*

CUB's rate shock proposal is designed to be an on-going mechanism to mitigate rate shock. Rate shock is different than general affordability and energy burden, though they are interrelated. Rate shock deals with the issue of rates increasing fast enough that it causes financial distress.. CUB's rate shock mechanism defines rate shock as an increase that is greater than 7% plus inflation or 10%, whichever is lower. CUB's rate shock mechanism identifies tools that can be used to mitigate rate shock (setting the increase at the lowest level possible and delaying parts of the increase that are greater than 10%). By clearly defining rate shock and providing tools that will mitigate that rate shock, CUB's proposal would provide an incentive to utilities to manage their cost increases to keep them under this threshold.

Q. How did PGE respond to CUB's proposal?

A. PGE made clear that it opposes CUB's Rate Shock proposal but offered no proposals to address CUB concerns. Specifically, PGE argued:

- CUB's proposal will prevent the recovery of prudently incurred costs.[126]
- It is inconsistent with the statutory requirements the Commission must follow to set fair and reasonable rates.[127]
- CUB ignores what the Commission has previously said is the appropriate way to address "rate shock."[128]
- Rate caps could delay necessary investments in infrastructure and maintenance, leading to higher costs in the future.[129]

[126] UE 435 – PGE/1200/Sheeran - Wise/40.
[127] *Id.*
[128] *Id.*
[129] *Id.*

- Artificial caps on rates can distort market signals leading to lower priority on energy efficiency.[130]
- Caps would also limit the available revenue needed to maintain and upgrade the system, potentially compromising service quality and reliability.[131]
- Instead of rate caps, a more balanced approach that involves customer assistance programs to help those most affected by rate increases while also ensuring PGE can maintain its infrastructure is more appropriate.[132]

Q. How do you respond to PGE's argument that prudently incurred costs should be recoverable?[133]

A. The purpose of CUB's proposal is to protect customers from large rate increases. It is not designed to stop recovery of prudently incurred costs. It is important to recognize that only the amount of the increase above the rate cap would be subject to delay. PGE has the opportunity to manage its business within the constraints imposed by the mechanism by keeping rate increase manageable. To the degree they occasionally go over the rate cap by a little, then CUB's proposal could delay recovery of a little bit of their revenue requirement.

Q. How do you respond to PGE's argument that CUB's proposal is inconsistent with the statutory requirements the Commission must follow to set fair and reasonable rates?[134]

A. CUB will address this in briefing, but we fundamentally disagree. The Commission is supposed to protect customers from unjust extractions and ensure adequate

[130] *Id.*
[131] *Id.*
[132] *Id.*
[133] *Id.*
[134] *Id.*

service at reasonable rates. The Commission is supposed to be representing customers when it sets fair and reasonable rates. CUB's proposal is entirely consistent with the Commission's statutory requirements. In fact, PUC Commissioner Lee Beyer testified to the Oregon Legislature that every tool CUB has proposed to address rate shock is within the existing authority of the Commission.[135]

Q. How do you respond to PGE's argument that ignores what the Commission has previously said is the appropriate way to address "rate shock"? [136]

A. PGE refers to a 2001 PUC order. Following that order, there was legislation designed to authorize the Commission to use tools similar to what CUB is proposing to address rate shock. Commissioner Beyer, on behalf of the Commission testified to the legislature that the Commission already had the authority to set rates at the lowest level reasonable, to delay rate increases or phase in rate increases and take other actions to address rate shock. Commissioner Beyer's testimony made clear that the Commission no longer agreed with the 2001 Order. PGE, of course, ignores the legislative testimony about the Commission's authority which occurred ***after*** the Order PGE is referring to.

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[135] *See* CUB/100/Jenks/72-73.
[136] UE 435 – PGE/1200/Sheeran - Wise/40.

Q. How do you respond to PGE's claim that rate caps could delay necessary investments in infrastructure and maintenance, leading to higher costs in the future?[137]

A. PGE offers no evidence that CUB's limited rate cap would cause any delays or lead to higher costs. Once the Rate Shock Proposal is adopted, PGE has the opportunity to manage its operations to stay within the rate cap threshold. If PGE failed to do so, a limited amount of regulatory lag could occur, as could a reduction in ROE – a reduction that would still allow the ROE to be reasonable. Under the mechanism, PGE can raise rates 10% per year. And if goes a little above that, the consequences are relatively small. PGE's concern could only become real if PGE is regularly raising rates well above 10%, which will create an affordability crisis. If PGE has evidence that this is the future for its customers, then it should put that evidence on the record because the delay in infrastructure investment is the least of our concerns.

Q. Has CUB's recommendation changed after reviewing PGE's response?

A. No. CUB recommends the Commission adopt CUB's rate shock proposal as outlined on pages 79 and 80 of my Opening Testimony.

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[137] *Id.*

VII. MULTI-YEAR RATE CASES

Q. PGE dropped it Investment Recovery Mechanism (IRM) and says it will pursue a multi-year rate case in the future.[138] What is CUB's position on multi-year rate cases.

A. CUB's general belief is that the regulatory process is inefficient. Stakeholders spend a lot of time on issues that are always being relitigated. In this case, for example, the utility proposed adding battery storage to the RAAC, a proposal it has made with no success in multiple rate cases. Relitigating these issues crowds out the ability of the regulatory process to investigate new issues. We have spent a great deal of time in several proceedings relitigating issues related to the Power Cost Adjustment Mechanisms (PCAMs), based on concerns about their historic performance. But we have spent almost no time investigating whether our power cost forecasting mechanism/methodologies are well geared to the future when resources are increasingly dispatched by third-party independent system operators, not utilities. It is problematic that the primary way regulation changes and adapts is through utilities making broad proposals in rate cases that are usually one-sided mechanisms designed to shift risk to customers and profits to shareholders. The initial proposal is often a wish list that is unacceptable to other stakeholders and quickly creates divisions that cannot be easily overcome. Relying on utilities to take the lead on developing proposals for a more efficient regulatory process is akin to asking the fox to design a more efficient hen house.

[138] UE 435 – PGE/1600/Cloud – Albi – Putnam/36.

CUB is open to exploring muti-year rate cases. But, not through a proposal in a utility's GRC. Such a proposal will be very much like the IRM – a one-sided mechanism designed for the sole purpose of giving utilities cost recovery with minimal regulatory lag but offering no incentives to control costs or otherwise meet the needs of customers. Stakeholders will have to look at the one-sided mechanism and decide whether to simply oppose it or to try to improve it. In addition, creating new, significant ratemaking mechanisms through a utility rate case means that stakeholders will have their hands full with the rate case while also trying to scramble to deal with the new ratemaking mechanism. And the mechanism will be subject to the 10-month timeline required for rate cases.

A better approach would be to have the Commission open an investigation into multi-year rate mechanisms, which can begin, not with a self-serving utility mechanism, but a look at best practices from around the country. And a Commission investigation would not be limited to ten months. If it took longer to design an appropriate mechanism for Oregon, then we can take that time.

CUB understands with current workloads, it is hard to carve out a space for such an investigation. Utilities are filing too many rate cases, and too many single-issue rate making proposals that there is not room on the agenda for an investigation that could actually improve the efficiency of the regulatory process and create a space for Commission led dockets.

Q. Does this conclude your testimony?

A. Yes.

CUB/401 Jenks

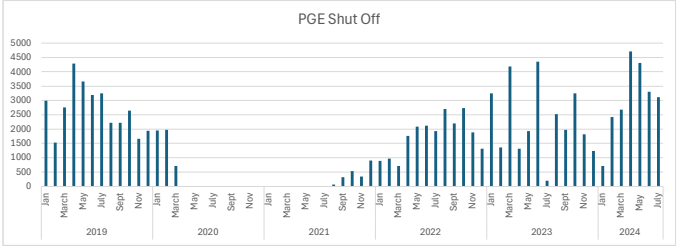
Exhibit CUB/401 Jenks/1 contains information sourced from the Commission's disconnection reporting, Docket No. RO 12.

PGE shut offs

	Jan	
	Feb	
	March	
	April	
	May	
	June	
	July	
	August	
	Sept	
	Oct	
	Nov	
	Dec	
2018	Jan	
	Feb	
	March	
	April	
	May	
	June	
	July	
	August	0
	Sept	0
	Oct	0
	Nov	0
	Dec	722
2019	Jan	2990
	Feb	1528
	March	2752
	April	4286
	May	3658
	June	3196
	July	3249
	August	2220
	Sept	2218
	Oct	2642
	Nov	1664
	Dec	1943
2020	Jan	1954
	Feb	1975
	March	708
	April	0
	May	0
	June	0
	July	0
	August	0
	Sept	0
	Oct	0
	Nov	0
	Dec	0
2021	Jan	0
	Feb	0
	March	0
	April	0
	May	0
	June	0
	July	0
	August	63
	Sept	325
	Oct	535
	Nov	345
	Dec	906
2022	Jan	883
	Feb	965
	March	713
	April	1761
	May	2084
	June	2123
	July	1931
	August	2704
	Sept	2195
	Oct	2739
	Nov	1890
	Dec	1311
2023	Jan	3249
	Feb	1356
	March	4188
	April	1313
	May	1933
	June	4353
	July	201
	August	2524
	Sept	1976
	Oct	3249
	Nov	1824
	Dec	1241
2024	Jan	714
	Feb	2424
	March	2681
	April	4712
	May	4303
	June	3300
	July	3108

month	shutoffs	cold weather events
Apr-19	4286	February 2019 saw two cold events. Temperatures reached below freezing from 2-4 to 2-10 and from 2-25 to 2-28. Portland area schools closed during both events.
Mar-23	4188	Coldest weather of 2022 was just before Christmas with high temperatures in the 20s
Jun-23	4353	coldest day of year was Feb. 25 when temperature reached 18. 1st half of March was unseasonably cold
Apr-24	4712	Cold front from January 10th to January 24
May-24	4303	Cold front from January 10th to January 24

cold weather event



Portland General Electric Company

Ten-Year Summary
Selected Statistics

	Oregon Total[A]					Residential Averages in Oregon			
	Revenue From Retail Energy Customers	Energy Sold to Retail Customers (MWh)[B]	Delivery to ESS Customers (MWh)[B]	Average[C] Number of Customers	Average[C] Revenue Per kWh (Cents)	Number of Customers	Revenue Per kWh (Cents)	Per Customer Revenue	Per Customer kWh
2013	$1,621,975,322	17,673,447	1,610,478	833,129	9.18	728,481	10.46	$1,106	10,572
2014	$1,720,993,811	17,603,187	1,662,674	840,993	9.78	735,502	11.37	$1,154	10,145
2015	$1,735,582,869	17,696,386	1,685,706	848,524	9.81	742,467	11.55	$1,139	9,866
2016	$1,703,927,642	17,248,173	1,722,248	859,396	9.88	752,365	11.40	$1,114	9,766
2017	$1,774,195,410	17,754,280	1,963,180	870,333	9.99	762,211	11.42	$1,181	10,338
2018	$1,760,150,960	17,186,002	2,035,494	881,766	10.24	772,389	12.01	$1,153	9,601
2019	$1,789,303,774	17,304,691	2,155,555	890,019	10.34	779,673	12.28	$1,177	9,582
2020	$1,846,082,453	17,423,803	2,119,212	902,237	10.60	791,119	12.50	$1,226	9,804
2021	$2,039,484,924	18,296,054	2,236,421	912,209	11.15	800,372	13.24	$1,320	9,968
2022	$2,145,143,572	18,905,061	2,325,477	922,444	11.35	809,573	13.64	$1,363	9,991

[A] Oregon Total excludes Sales for Resale and Other Electric Revenue.
[B] 1 Megawatt hour (MWh) = 1,000 Kilowatt hours (kWh).
[C] These figures exclude ESS customers.

PortlandGeneral.com
503-228-6322
800-542-8818

Thank you!

We received your payments totaling **$119.73**.

Amount due
$108.08

Due date
7/3/24

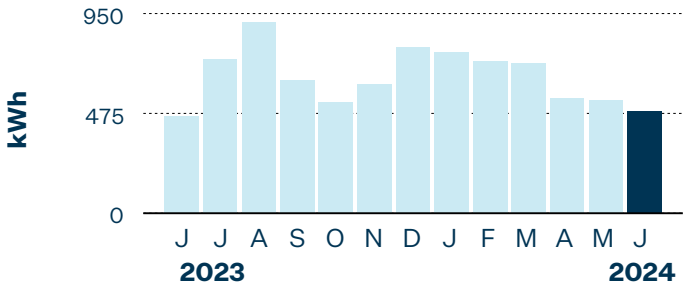
Robert T Jenks
[redacted]

Account number [redacted]

Service address [redacted]

Service period **5/16/24 to 6/17/24**

Your monthly energy use history



Green Future in action

Thank you for supporting **487 kWh** of **100%** clean, renewable energy this month.

*Your Federal Columbia Benefits are supplied by Bonneville Power Administration (BPA).

Your energy use comparison

487 kWh this month

5% from this month last year

9% from last month

Compared to this time last year, this service period was 2 days longer and 1 degree cooler.

Temperature source: Portland International Airport

P.O. Box 4438
Portland, OR 97208-4438

[redacted]

ROBERT T JENKS
[redacted]

Amount due: **$108.08**
Due date: **7/3/24**

PGE

[redacted]

[redacted]

Meter number	Service period	Schedule	Current read	-	Previous read	=	Total use
[redacted]	**5/16/24 to 6/17/24**	**7**	**36,221**		**35,734**		**487 kWh**

Account charges

Balance forward	**0.00**
Previous amount due 6/4/24	119.73
Payments through 6/17/24	119.73 (CR)
[redacted]	**108.08**
Energy charges	**97.13**
Basic Charge	13.00
Energy Use Charge (487.000 kWh x $0.08814)	42.92
Transmission Charge (487.000 kWh x $0.00678)	3.30
Distribution Charge (487.000 kWh x $0.06844)	33.33
Green Future Choice (487.000 kWh x $0.0094)	4.58
Regulatory charges and credits	**7.35**
102 Federal Columbia River Benefits supplied by BPA (487.000 kWh x $-0.00679)	3.31 (CR)
105 Regulatory Adjustments (487.000 kWh x $-0.00039)	0.19 (CR)
109 Energy Efficiency Funding Adj (487.000 kWh x $0.00788)	3.84
118 Bill Adjustment Cost Recovery	1.88
123 Decoupling Adjustment (487.000 kWh x $-0.00014)	0.07 (CR)
126 Power Cost Variance Mechanism (487.000 kWh x $0.0008)	0.39
135 Demand Response (487.000 kWh x $0.00067)	0.33
136 Community Solar Cost Recovery (487.000 kWh x $0.00012)	0.06
137 Solar Payment Option Cost Recov (487.000 kWh x $0.00024)	0.12
145 Boardman Decommissioning Adj (487.000 kWh x $-0.00048)	0.23 (CR)
146 Colstrip Power Plant Oper Life Adj (487.000 kWh x $0.00403)	1.96
150 Transportation Electrification (487.000 kWh x $0.00056)	0.27
151 Wildfire Mitigation Costs (487.000 kWh x $0.00209)	1.02
152 Extreme Weather & Pandemic Costs (487.000 kWh x $0.00263)	1.28
Other charges and credits	**0.05** (CR)

Continued on page 3

For a detailed explanation of your account, please visit **PortlandGeneral.com/MyAccount.**

Ways to pay

On the **PGE app**

PortlandGeneral.com

503-228-6322

Oregon Relay (deaf, deaf-blind, hard-of-hearing, speech-disabled): **711**

P.O. Box 4438
Portland, OR 97208-4438

Western Union® and **CheckFreePay**®
To find a nearby location, visit **PortlandGeneral.com/PayInPerson**.

More to know

Late payment charge
A fee of 2.3% may be applied to past-due bills.

Paying by check
PGE will convert your check to an electronic debit.

Get help with your bill
For billing questions, call us at **503-228-6322** or visit **PortlandGeneral.com/Help.** For additional information, call Utility Assistance at **211**.

We share with Energy Trust of Oregon
They receive some customer information to design, evaluate and improve service to our customers. For details, visit **PortlandGeneral.com/DataShare**.

Account charges, continued

Oregon Commercial Activities Tax Recovery (-0.122%)	0.13 (CR)
Metro Supportive Housing Services Tax Recovery (0.083%)	0.08
Taxes and fees	**3.65**
City of Portland Tax (1.5%)	1.51
Multnomah County Tax (0.026%)	0.03
Low Income Assistance	0.60
Public Purpose Charge (1.5%)	1.51
Amount due 7/3/24	**$108.08**

May 17, 2024

To: Bob Jenks
Oregon Citizens' Utility Board

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to CUB Data Request 033
Dated May 3, 2024

Request:

Please provide the Company's capital spend for each of the past five years (2019, 2020, 2021, 2022, and 2023).

Response:

PGE capital spend for the request years per the respective filed FERC Form 1, page 120, line 26 is as follows:

2019 - $614,595,774
2020 - $795,174,628
2021 - $660,956,523
2022 - $794,015,596
2023 - $1,373,225,203

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 435

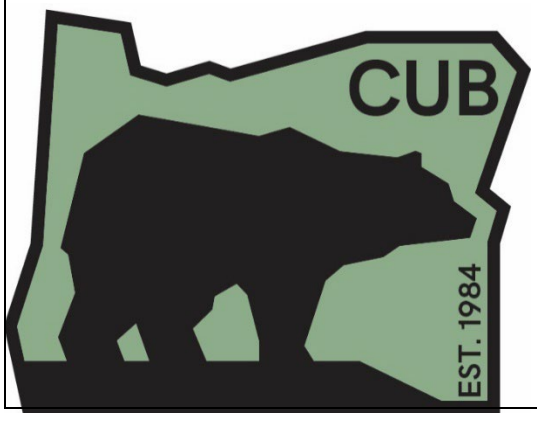
In the Matter of	)
	)
PORTLAND GENERAL ELECTRIC COMPANY,	)
	)
Request for a General Rate Revision.	)
	)

REBUTTAL TESTIMONY

OF THE

OREGON CITIZENS' UTILITY BOARD

September 10, 2024



BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 435

In the Matter of	)	
	)	
PORTLAND GENERAL ELECTRIC COMPANY,	)	REBUTTAL TESTIMONY OF RYAN TRAN ON BEHALF OF THE OREGON CITIZENS' UTILITY BOARD
	)	
	)	
Request for a General Rate Revision.	)	
	)	

I. INTRODUCTION

Q. Are you the same Ryan Tran who filed Opening Testimony on behalf of the Oregon Citizen's Utility Board (CUB)?

A. Yes, I presented UE 435/CUB/200/Tran. I am also adopting the joint testimony of Sarah Wochele and Bob Jenks on Portland General Electric's (PGE) proposed changes to the residential basic charge (UE 435/CUB/300/Wochele-Jenks/3–21).

Q. What are the ordered recommendations that follow in your testimony?

A. CUB recommends the following:

1. Find the record supports returning the sale value of Constable and Seaside ITCs to customers over the life of the asset, but financed against rate base as the Alliance of Western Energy Consumers (AWEC) proposes;
2. Accept Oregon Public Utility Commission Staff's (Staff) Constable tracker proposal, reject PGE's ask for Seaside tracker;

3. Reject any increase to the residential Basic Charge as this diminishes customers' flexibility to manage their budget and essentially moots the benefits of energy efficiency investments;
4. Reject AWEC's proposal to require income verification at Income-Qualified Bill Discount program (IQBD) enrollment as a costly maneuver that would increase barriers to entry;
5. Reject AWEC's proposal to move to revenue-based allocation for IQBD cost recovery; and
6. Reject PGE's proposal to update the Load Following Credit because it would shift significant costs to residential customers without any support in the record to do so.

Q. How is your testimony organized?

A. My testimony is organized in the following order:

- Constable and Seaside Batteries
- Residential Basic Charge
- IQBD Program
- Load Following Credit

II. CONSTABLE AND SEASIDE BATTERIES

Q. Is CUB supportive of PGE's new proposal for the battery Investment Tax Credits (ITCs)? Why?

A. PGE's new proposal in Reply Testimony on the ITCs is too vague for CUB to fully commit to support it. However, CUB is generally supportive of a combination of AWEC's and Staff's proposed positions. In Opening Testimony, CUB originally made a case for, but did not explicitly recommend, ITC normalization (not opting

out of normalization)[1] for the same reason AWEC proposes to use the same carrying charge for the ITC as PGE's carrying charge for the battery investment itself,[2] despite recommending opting out of normalization: under IRS rules, by design, normalization ensures that customers fairly benefit from the appropriate carrying cost.[3] In addition, CUB aligns with Staff's proposal to spread the ITC benefits over the entire life of the asset, which IRS rules of ITC normalization also ensure by design.[4] As a result, CUB is generally supportive of opting out of ITC normalization for the sale of ITCs and to return the sale value to customers over the life of the asset, but financed against rate base as AWEC proposes.

Q. Does CUB support a tracker for Constable?

A. Yes, but with the same conditions outlined by Staff.[5] CUB finds Staff's proposal reasonable and supports it. Constable is scheduled to be placed in service right before rates go into effect, which makes it easier for CUB to swallow a tracker.

Q. Why is CUB urging the Commission to reject the tracker for Seaside?

A. CUB is principally against single issue ratemaking.[6] CUB does not believe that single-issue adjustments should be the norm going forward because it makes it impossible to holistically consider impacts to the residential customers it advocates on behalf of.

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[1] UE 435 – CUB/200/Tran/9-10.
[2] UE 435 – AWEC/100/Mullins/66, lines 10-15.
[3] CUB/501, Thompson, H. E., & Weygandt, J. J. (1977). *The Rate-Making Treatment of the Investment Tax Credit for Public Utilities.* The Journal of Business, 50(4), 508–519.
[4] UE 435 – Staff/1700/Dlouhy/35-36.
[5] UE 435 – Staff/1700/Dlouhy/22.
[6] *See e.g., Is Oregon Utility Regulation Part of the Problem*?, Bob Jenks (Jan 25, 2024) a*vailable at* https://oregoncub.org/news/blog/is-oregon-utility-regulation-part-of-the-problem/2944/.

It is important to remember that PGE does not include the costs of Seaside in its proposed rate increase. Seaside is slated to come online in the mid-2025.[7] Costs from a tracker would be in addition to the total ratepayers are expected to see from this general rate case. This is discussed in further detail in the testimony of CUB witness Bob Jenks.[8]

Q. But isn't PGE arguing that they are burdened with too much regulatory lag and so the tracker is necessary?

A. PGE could have timed this case with the online date for Seaside rather than propose another mid-winter rate hike. The purported prudency of PGE's numerous investments does not give the right to encumber customers already experiencing unprecedented increases, and CUB urges the Commission to send a signal to the Company that this is not tolerated.

Trackers virtually guarantee recovery of costs going forward (maybe with minor adjustments). This, in turn, reduces the Company's risk in terms of the potential of not being able to recover those costs in a future rate case. As such, the market will view the Company more favorably giving the utility more favorable interest rates. If the Commission allows a Seaside tracker, then PGE's Rate of Return should be lowered, not increased with this type of incentive, given there is less financial risk to the Company. Accordingly, ratepayers should not have to pay a risk premium on Seaside's cost recovery for that investment has essentially no risk. Putting this incentive on top of the rate of return adds insult to injury to PGE's customers.

[7] UE 435 – PGE/1000/Ferchland - Liddle /2.
[8] *See* CUB/400/Jenks/29-34.

III. RESIDENTIAL BASIC CHARGE

Q. What is CUB's position on PGE's proposed Residential Basic Charge increase and why?

A. CUB rejects the increase. CUB supports Staff's adherence to gradualism and errs on the side of granting customers more flexibility.[9] Flexibility adds value to customers' energy efficiency investments and supports customers' ability to have some semblance of control over the amount of their monthly bill.

Q. How does a lower Basic Charge give customers more say in their monthly bill?

A. As PGE alludes to, an increase in the Basic Charge will result in a decrease to the per kWh distribution charge,[10] which is the second largest portion of the total volumetric charge on Schedule 7 after power costs.[11] A decrease in the Basic Charge will result in the opposite. All else equal, when a greater portion of a customer's bill is variable (based on usage), a customer's bill amount is more closely associated with how much energy they use. In other words, if a customer uses a lot of electricity, their bill will be larger. And if they use little, their bill will be smaller. In this way, a lower basic charge gives customers more control over their monthly bill.

Q. But do residential customers feel like they have some level of control over their monthly bill amount?

A. Reading the public comments will give a resounding no. Here are some examples:

[9] UE 435 – Staff/900/Stevens/20-21.
[10] UE 435 – PGE/2000/Macfarlane – Pleasant/5, lines 14-15.
[11] PGE Schedule 7.

1. One customer in NE Portland, who tracks usage using a smart meter and has installed many energy efficient changes, says it seems impossible that their basic electrical needs cost so much now.[12]

2. One couple, one of whom is a veteran, reports using LED lightbulbs, a heat pump for heating and cooling, and other various energy conservation measures. They are outraged that despite these efforts, they saw almost a 50% increase in their bill.[13]

3. One self-described disabled senior on retirement income in Milwaukie, who describes herself as "very frugal and a conscientious environmentalist," writes about the hopelessness of cutting down energy use to compensate for the rate increase, which includes never using A/C in the summer except during three-digit days, only using a small portable energy efficient heater in the winter, and using the bare minimum electricity possible.[14]

4. A customer in Newberg complains about big winter bills despite spending close to $16,000 on energy efficiency improvements.[15]

5. A customer in Sherwood, has cancer and requires certain medications, has cut back on electricity and heat to save money but is still struggling to pay bills.[16]

6. A family in Beaverton tries to conserve energy as much as they can by using Energy Star appliances, changing all light bulbs to LED, and minimizing need for AC, but is angered that their family's actions aren't being reflected on their bills.[17]

7. Another customer in Beaverton, who wears thrifted down jackets and hats indoors and uses the trunk of their car as a refrigerator during winter, poses the

[12] UE 435 – Public Comment 2322.
[13] UE 435 – Public Comment 2489.
[14] UE 435 – Public Comment 1834.
[15] UE 435 – Public Comment 1869.
[16] UE 435 – Public Comment 390.
[17] UE 435 – Public Comment 2420.

question: where is the reward for creative conservation and cooperation to reduce use and costs?[18]

This is just a handful of examples, but frustration and hopelessness is a pervasive theme in the over 3,000 public comments that have been submitted in this docket. As one farmer in Colton puts sarcastically, "so much for the benefit of energy conservation."[19]

Q. Does CUB believe residential customers should have more say in their bill amount?

A. Customers have the right to not feel frustrated and hopeless, and that the little things they do here and there really are impactful. Raising the Basic Charge would further belittle customers' efforts to keep their bills low. A customer who chooses to eschew running their air conditioner or heater, if they wish to conserve energy, in the hopes of reducing their monthly bill, should see those benefits with a lower monthly bill. The efforts of residential customers to reduce their energy consumption for the benefit of their bill, and for the benefit of everyone else, should not be in vain.

Q. Did PGE ever mention these benefits of a lower Basic Charge in testimony?

A. No. But confoundingly, on PGE's website it provides advice on the benefits of certain measures customers can take to lower their bills.[20] Here are some examples PGE provides that are "easy ways to save":

1. Insulate home;
2. Switch to LED light bulbs;
3. Don't cool unused rooms;

[18] UE 435 – Public Comment 1939.
[19] UE 435 – Public Comment 2221.
[20] *No-Cost & Low-Cost Tips*, Portland General Electric, *available at* https://portlandgeneral.com/save-money/save-money-home/no-cost-and-low-cost-tips (last accessed Sept. 8, 2024).

4. Turn off electronics;
5. Try fans instead;
6. Bake multiple things at the same time; and
7. Use a lid when cooking with pots and pans.

Customers have taken to the public comments and made it overwhelmingly clear they are already doing a lot of these things and much more. Customers are utilizing PGE's advice, and now the Company proposes to diminish their customers' efforts by increasing the Basic Charge.

Q. How do customers pay for energy efficiency upgrades?

A. Customers pay for energy efficiency upgrades in two ways. First, customers pay when they choose to make efficiency upgrades to their home, like switching out an electric resistance heater in their home for a heat pump. The customer pays this upfront cost for the heat pump with the understanding that it will provide energy savings in the long term. Second, PGE customers are billed under Schedule 109 to fund the Energy Trust of Oregon to support energy-efficiency services and programs.[21]

Q. What is the effect of PGE both billing customers under Schedule 109 to support energy efficiency programs and increasing the Basic Charge?

A. Schedule 109 is used to fund financial incentives to customers for taking actions that reduce their energy use. The benefit to an individual customer for an energy efficiency investment is the combination of the bill savings and the incentive payments that come out of Schedule 109. Raising the Basic Charge adversely impacts the customer's bill savings from their energy efficiency investment. And if

[21] *How We're Funded*, Energy Trust of Oregon, *available at* https://www.energytrust.org/about/how-we-operate/funding/ (last accessed Sept. 8, 2024).

the incentives under Schedule 109 stay the same, then customer motivation to invest in EE may decrease. If the incentives under Schedule 109 are increased to offset the shift of cost recovery to monthly fees, then customers will face higher Schedule 109 charges.

Q. PGE claims that by increasing the Basic Charge, residential customers, particularly low-income customers, will see lower bills in the winter. How does CUB respond?

A. First, the evidence that PGE provides only weakly suggests this.[22] Second, even if some residential customers *may* benefit in the winter months with an increased Basic Charge, it comes at the expense of other months of the year that contain lower usage. In addition, PGE admits that most customers will see a negligible difference in winter bills,[23] and CUB agrees. In CUB's independent analysis of residential customer usage, a majority of customers use less than 2,000 kWh a month in winter, implying a handful of dollars difference being shifted from winter bills to other months of the year.

In Opening Testimony, CUB presented data analysis on manufactured/mobile homes and found that this subgroup of residential customers generally suffers from a combination of high winter usage, low incomes, and poor weatherization.[24] A higher Basic Charge is not the solution, and is more likely to be a problem instead. While CUB tries to remain cognizant of high usage in winter leading to high bills,

[22] UE 435 – PGE/2000/Macfarlane – Pleasant/8, Figure 2.
[23] *Id.* at 6, 5-9
[24] UE 435 – CUB/200/Tran/12-28.

taking away customers' control over their bill amount by way of a higher Basic Charge is not an appropriate solution, for reasons stated above.

Q. Isn't CUB asking for reduced rates in the winter months with its rate shock proposal?

A. CUB's rate shock proposal is designed to mitigate the effect of large rate increases. Assuming that PGE can better control its spending, most years will not have rate increases that trigger the need to mitigate rate shock. Reducing the incentive for energy efficiency and reducing the control that customers have over their bills is not an effective tool to mitigate rate shock.

Q. In his testimony in CUB/400, Bob Jenks recommends PGE revamp its bill design such that all volumetric charges are summed to provide customers with an easy-to-read per kWh rate.[25] How does CUB's bill design proposal synergize with CUB's recommendation to reject the Basic Charge increase?

A. Customers that can understand and be aware of their total volumetric rate can better understand their energy use. Any corresponding action they take will multiply in magnitude when given a Basic Charge that is a lower portion of their monthly bill amount, all else equal.

IV. IQBD PROGRAM

Q. What is AWEC's proposal for IQBD cost recovery?

A. AWEC is proposing to move to revenue-based allocation for IQBD cost recovery instead of the load allocation currently in place.[26] According to AWEC, neither the

[25] UE 435 – CUB/400/Jenks/15-16.
[26] UE 435 – AWEC/200/Kaufman/33, lines 5-6.

current allocation of costs on a per-site approach nor the per-customer cap approach is fair because Schedule 89 pays 4.1 percent of their bill toward IQBD cost recovery, which is double the amount by the residential schedule.[27]

Q. Does CUB find AWEC's proposal to move to revenue-based allocation for IQBD cost recovery reasonable?

A. No, because AWEC uses the Public Purpose Charge[28] (PPC) as an analogy, and although AWEC is correct in that both the PPC and cost recovery of the IQBD are public policy goals, but they are different in purpose and application.

The purpose of the PPC is to "collect funds associated with activities mandated for the benefit of the general public including new energy, related investments in schools, new renewable energy resources, customer investments in technologies supporting reliability, resilience and the integration of renewable energy resources with the Company's distribution system, low-income housing resources and new low-income weatherization."[29] Whereas Schedule 118 is wholly dedicated to cost recovery of the IQBD program for residential customers.

In addition, the collection of PPC costs on a revenue basis was established by Oregon law in 1999.[30] . In 2021, the Oregon legislature provided the Commission the authority to address energy burden and required that these costs be recovered in

[27] UE 435 – AWEC/200/Kaufman/32, lines 10-14.
[28] From PGE Schedule 108: The purpose of the Public Purpose Charge is to collect funds associated with activities mandated for the benefit of the general public including new energy, related investments in schools, new renewable energy resources, customer investments in technologies supporting reliability, resilience and the integration of renewable energy resources with the Company's distribution system, low-income housing resources and new low-income weatherization.
[29] PGE Schedule 108.
[30] *See* SB 1149 (1999).

the rates of all retail customers.[31] This law did not mandate how the recovery mechanism would be structured.

As a result, CUB believes it is unreasonable for AWEC to use the analogy of the PPC to justify changing the current cost recovery structure of the IQBD program; it unreasonable and illogical to point to the unrelated 1.5% of bill amount cost recovery of the PPC to justify IQBD cost recovery being roughly the same percentage.

Q. What are the ramifications of AWEC's proposal?

A. According to PGE, AWEC's proposal could substantially reduce the amount paid by large commercial and industrial customers by millions of dollars, and all other customer classes would see increases in their relative contributions.[32] Residential customers would be negatively impacted the greatest, shouldering an additional burden of $6 million a year.[33]

Q. What is CUB's position on AWEC's recommendation to remove self-attestation for the IQBD program and instead require income verification at enrollment?

A. CUB shares AWEC's concerns about the potential for program abuse, as residential customers also pay into the program. However, CUB agrees with PGE that at the moment, income verification at enrollment is unnecessary administrative bloat that is not worth the cost.[34] When AWEC asked to see PGE's cost-benefit analysis, PGE's response was that income verification costs an estimated $100 per customer

[31] *See* HB 2475 (2021).
[32] UE 435 – PGE/1200/Sheeran – Wise/15, lines 12-17.
[33] CUB/502 - PGE workpaper: IQBD Cost and Recovery Model.
[34] UE 435 – PGE/1200/Sheeran – Wise/13, lines 15-19.

leading to a total program cost of $8.5 million[35] (expected to increase as enrollments increase), which is more than the amount forecasted to serve all program participants in the 46-60% SMI range in 2025.[36]

Last but not least, CUB echoes PGE's stance that self-attestation enables a low barrier to entry for enrollment, which should not only be celebrated, but continually built upon so that the barrier to entry is even lower. There are still many customers eligible for the program but not enrolled, and enrollment should continue to strive to be easier, not more difficult. For many residential customers, it is their lifeline in the face of unprecedented rate increases.

V. LOAD FOLLOWING CREDIT

Q. Please summarize the issue of the Load Following Credit.

A. PGE proposes to update the Load Following Credit (LFC), which is a transfer from almost all other customer classes, to compensate a Schedule 90 customer for benefits the latter *may* provide due to their consistent load.[37] The LFC amount is based on a price that is itself based on an estimate for the value of the flexibility benefits offered by the Schedule 90 customer. PGE proposes updating by way of using the analogue of the flexibility value of a 4-hour battery.[38]

Q. What is the effect of PGE's proposal on residential customers?

A. This proposal reallocates a $7.5 million burden from the single Schedule 90 customer to residential customers, which comes in the form of the Energy Charge

[35] CUB/503, PGE response to AWEC DR 183.
[36] CUB/502, PGE workpaper: IQBD Cost & Recovery Model.
[37] UE 435 – PGE/2000/Macfarlane – Pleasant/18, lines 1-5.
[38] PGE/900/Macfarlane – Pleasant/17, lines 22-23

as seen on Schedule 7. Residential customers are responsible for roughly half of the entire LFC bill, with all other relevant customer classes footing the rest of it with not a single class higher than 18% of the bill.[39]

Q. Does CUB agree to PGE's update to the Load Following Credit?

A. No.

Q. Why is CUB rejecting this proposal?

A. The evidence does not support PGE's argument that the flexibility value of a 4-hour battery is an appropriate analogy to quantify the benefits that the Schedule 90 customer provides to the residential customer class.[40] This is critical when it comes to a significant shift in costs onto residential customers in the context of already unprecedented rate pressure.

Q. Why does CUB believe the evidence is insufficient?

A. In PGE's Opening Testimony, it provided zero evidence for why the sudden change in price is necessary, other than suggesting that it should be updated.[41] When discussed in its Reply Testimony and data responses, PGE fails to provide sufficient evidence to support its LFC proposal.

In PGE's Reply Testimony, the Company expands its rational to include the passage of House Bill 2021 as justification for updating the price, in that "just as Staff would not want PGE to use carbon emitting resources in its generation marginal cost studies, they should not advocate to use carbon emitting resources to

[39] CUB/504 - PGE workpaper: 2025 Ratespread – January Prices FINAL.
[40] *See* PGE/900/Macfarlane - Pleasant/16-36; Staff/900/Stevens/27-33; PGE/2000/Macfarlane - Pleasant/17-18, and CUB Exhibits 504, 505, 506, 507
[41] UE 435 – PGE/900/Macfarlane - Pleasant/11, 17.

value flexibility."[42] However, CUB agrees with Staff's suggestion that a correct price should be the one that most accurately reflects what kind of monetary value, if any, the Schedule 90 customer provides to other customer classes, even if the most appropriate analogue to use is an outdated carbon emitting resource.[43]

The Company also states in its Reply that "the benefits of volume and load factor are significant for the remainder of PGE's customer base."[44] Some high level explanations may follow, but there is no additional supporting evidence anywhere to be found. In addition, PGE says that it doesn't need to operate a Peaker plant or buy energy in the short-term market to serve this customer's load, and the LFC recognizes this benefit.[45] However, PGE has made no mention of the avoided cost of the Peaker plants nor the market purchases, let alone why this should result in the proposed transfer of costs to residential customers.

In a Data Response to Staff, the Company states that the "flexibility value" approved in UE 262 is based on the costs PGE avoids for ancillary services between flat load and variable load in the day ahead, hour ahead and real time energy markets.[46] But this new "flexibility value" that PGE proposes utilizes a different definition which attempts to quantify the benefits of what PGE calls "flexibility adequacy".[47] According to PGE, flexible adequacy is a MW number conveying the magnitude of resources needed to meet system flexibility and

[42] UE 435 – PGE/2000/Macfarlane – Pleasant/17, 16-18
[43] *See* Staff in UE 435 – Staff/200/Scala/36.
[44] UE 435 – PGE/2000/Macfarlane – Pleasant/18, 1-2; *see also* CUB Exhibit 505, PGE response to Staff DR 457.
[45] UE 435 – PGE/2000/Macfarlane – Pleasant/18, lines 3-5.
[46] CUB/506, PGE response to Staff DR 732.
[47] *Portland General Electric Company's 2023 Clean Energy Plan and Integrated Resource Plan*, OPUC Docket. No. LC 80, 128 (March 31, 2024) *available at* https://edocs.puc.state.or.us/efdocs/HAA/lc80haa8431.pdf.

reliability needs, and is used for its capacity expansion model ROSE-E.[48] Accordingly, this is not just any mere update, PGE is proposing a dramatic change in the definition of flexibility value, and thus far PGE hasn't been able to prove that this new definition is inclusive of any quantifiable benefits that the Schedule 90 customer provides to other customer classes.

In Reply Testimony, PGE acknowledged that Staff disagrees that flexibility benefits of a Schedule 90 customer are equivalent to the flexibility value of a 4-hour battery, yet the Company neglected to rebut this argument.[49] Subsequently, Staff requested that PGE "provide all supporting evidence to support the assertion that Schedule 90 is providing all of the same benefits as a 4-hour battery."[50] In its response, PGE states that it only purports the flexibility benefits as a 4-hour battery, referring back to its Reply Testimony.[51] CUB agrees with Staff that if PGE explicitly uses the same exact flexibility value of a 4-hour battery, the sole Schedule 90 customer must be providing all of the same (flexibility) benefits to warrant using the same value. The Company has not shown why the Commission should find otherwise.

With the burden of proof on PGE, given multiple opportunities through Opening Testimony, Reply Testimony, and Data Requests, it has failed to deliver on why a big change to the LFC price is necessary, including whether that involves bridging the gap between the flexibility benefits of a Schedule 90 customer and a 4-hour battery, why the definition of flexibility value needs to change, and whether

[48] *Id.*
[49] UE 435 – PGE/2000/Macfarlane – Pleasant/17, lines 4-7.
[50] CUB/507, PGE response to Staff DR 734.
[51] *Id.*

the new change is reasonable. PGE is asking to put an additional $7.5 million burden on residential customers for something that might make sense in theory but is lacking any evidence on the record to support it. As a result, the Commission should reject PGE's proposed "update".

Q. If forced to use a battery analogy for the Load Following Credit, is the flexibility value of a 4-hour battery even the correct analogue to use?

A. No. According to PGE's 2023 IRP, "the difference in flexibility value between storage resources does not appear to be significantly impacted by duration, suggesting that most flexibility value is associated with flexibility constraints on short time scales (less than two hours)."[52] This would imply that the flexibility value of a 2-hour battery is more appropriate, which is shown as being $8.35 per kw-yr,[53] instead of the $9.77 that is used in PGE's proposal.[54]

Q. Does this conclude your testimony?

A. Yes.

[52] LC 80 – PGE IRP & CEP at 238.
[53] *Id.*
[54] CUB/505, PGE response to Staff DR 457.

The Rate-Making Treatment of the Investment Tax Credit for Public Utilities
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*Howard E. Thompson and Jerry J. Weygandt**

The Rate-making Treatment of the Investment Tax Credit for Public Utilities

I. THE INVESTMENT TAX CREDIT AND CAPITAL FORMATION

The investment tax credit, which provides for forgiveness of some taxes if qualified investments are made, is designed as an incentive to stimulate business capital formation. Since taxes are reduced on a project involving qualified investments, the prospective rate of return is increased and the project becomes more desirable. In general the investment tax credit operates to increase the rate of return on all qualified projects, thereby increasing the volume of investments undertaken by the firm. This in turn has presumed valuable social implications in terms of employment and general economic advance.

The incentives and processes described in the previous paragraph are descriptions of the effects of the investment tax credit on unregulated industry. In industries where prices are closely controlled and regulated, the investment tax credit may not work as described. If the regulatory body adjusts prices downward to exactly compensate for taxes forgiven by the investment tax credit, no increase in the volume of investments undertaken by the firm will take place. The rationale for the investment tax credit will be circumvented by the process of regulation.

Congress, recognizing this possibility in the case of public utilities, passed legislation to insure that the investment tax credit would not be immediately passed through to the ratepayers through an offsetting rate reduction. According to the law the investment tax credit will not be allowed on public utility property unless the rate-making treatment of the credit conforms to certain restrictions that assure that "some of the benefits, at least, will go to the investors."

On the surface this appears to be a reasonable objective. But on closer examination, it is our opinion that such treatment is not appropriate. As indicated earlier, the investment tax credit is designed to increase the volume of investment, which leads to economic benefits to various segments of society. Thus, the rate of return on the most profitable as well as the marginal project is increased, and the firm will have an incentive to invest and expand its markets.

Regulated public utilities, on the other hand, will not necessarily increase their investment in assets because of an investment tax credit. By law they are required to provide assets sufficient to provide service for those who demand it and this amount is independent of whether or not the utility can

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take advantage of the investment tax credit. Thus the provisions in the tax law which insure that the investment tax credit will not be directly passed on to the ratepayers will have no effect on the volume of investment undertaken by utilities, given that additional investment decisions will have to be approved by the regulatory commission which will base its findings on the needs of the ratepayers.

As previously stated the tax law specifies the rate-making treatment of the investment tax credit. The general rule provides that no portion of the credit may be used to reduce the cost of service for rate-making purposes. We will refer to this treatment as option A. Option A has one exception which indicates that the tax benefits derived from the credit may (if the regulatory commission so requires) be used to reduce the rate base, provided that this reduction is restored over the useful life of the property or faster. We will refer to this treatment as option B. It should be noted that option A and option B are exactly the same if the investment tax credit is restored immediately to the rate base. We will show in subsequent sections of this paper that option A is in fact a payment by the ratepayer to the public utility and that option B represents a loan from the ratepayer to the public utility.

The second rule (the ratable-flow option), or option C, provides that the investment tax credit may be used to reduce the cost of service ratably over the book life of the property. Under this option, there can be no reduction in the taxpayer's rate base. We will show that option C in effect is also a loan from the ratepayer to the public utility, but at a different interest rate than option B.

The third rule (flow-through option), or option D, permits companies that are classified as "flow-through" under the accelerated depreciation limitations of the Tax Reform Act of 1969 to immediately flow-through the benefits to the ratepayer if so desired. We will show that such an approach is the only proper method for treatment of the investment credit, given that the investment function should be regulated by the need of the ratepayer and not by providing excessive profits to the utility through the investment tax credit.

In the next section we will review the procedures commonly used by public utility commissions for rate-making purposes. Section III will discuss the implications of the tax law and the rate-making procedures with respect to both the public utility and the ratepayer.

II. RATE-MAKING PROCEDURES AND THE INVESTMENT TAX CREDIT

Rate-making Procedures

It is useful to start our discussion with a brief description of rate-making procedures as practiced by experts appearing before regulatory bodies. We will then discuss the investment tax credit with this background in mind.

General aspects of rate making.—The revenue requirements or cost of service for a public utility is the sum of (i) operating expenses, (ii) deprecia-

tion, (iii) income taxes, and (iv) a fair and reasonable rate of return on capital employed. Symbolically, we can write the cost of services as

$$R = e + d + T + rB, \tag{1}$$

where R is the revenue requirement or cost of service, e the operating expenses, d the depreciation, and T the income taxes. The last term in (1) is the *return to capital* representing the fair and reasonable rate of return, r, multiplied by the rate base B.

For purposes of our analysis we can assume the rate base B to be equal to the total long-term financing incurred by the firm.

The general procedure in a rate case is for the fair and reasonable rate of return, r, to be determined with reference to testimony provided by "cost of money" experts. Basing their analysis on the cost of money testimony, accounting or engineering experts will determine e, d, T, and B, and hence the revenue requirements R. For purposes of our analysis we will further assume that there is no controversy with respect to e, d, or B and that all experts would agree upon the *procedure* used to calculate T.

Since the calculation of r plays a significant role in our analysis we will discuss it in detail.

Calculating the fair rate of return.—Cost of money experts concentrate on the components of the liability–net worth side of the balance sheet in determining r. Suppose that the rate base is financed with only debt and equity and that

$$B = D + S, \tag{2}$$

where B, D, and S are balance sheet amounts of net plant, debt, and equity capital, respectively.

Then if r_D is the imbedded or actual cost of debt and r_S is the cost of equity capital, the return requirement is defined as

$$rB = r_D D + r_S S \tag{3}$$

and using (2) in (3) the fair rate of return becomes

$$r = r_D \frac{D}{D+S} + r_S \frac{S}{D+S}. \tag{4}$$

Thus the fair rate of return is a weighted average of the costs of debt and equity.

Suppose now that the firm is able to acquire financing in the amount of C' at zero cost. Suppose further that this costless capital replaces some of the existing debt and equity. The fair and reasonable return requirement for this case would be

$$r'B = r_D D' + r_S S' + 0C' \tag{5}$$

where D' and S' are the amounts of debt and equity financing for this case. Since $B = D' + S' + C'$ it follows that

$$r' = r_D \frac{D'}{B} + r_S \frac{S'}{B} + 0\frac{C'}{B} \tag{6}$$

is the rate of return under this case and again the weighted average cost is used. The return requirement in the cost of service is $r'B$.

There is an alternative way to establish the fair and reasonable return requirement. Suppose the cost-free capital is offset against the rate base and the remaining capital supplied is used to determine a weighted average rate of return r''; that is,

$$r'' = r_D \frac{D'}{D' + S'} + r_S \frac{S'}{D' + S'} \tag{7}$$

and r'' is then applied to the rate base, B, diminished by C'. The return to capital from this procedure is, using (5) and (7),

$$r''(B - C') = r_D D' + r_S S' = r'B' . \tag{8}$$

Thus the revenue requirements can equally well be established by either of the formulas

$$R = e + d + T + r'B \tag{9a}$$

or

$$R = e + d + T + r''(B - C) . \tag{9b}$$

To illustrate the point, table 1 shows a balance sheet for a hypothetical utility along with the established costs of debt and equity. Using (6) we have $r' = .08(.50) + .12(.40) = .08800$, and using (7), $r'' = .08(.5556) + .12(.4444) = .09778$. The revenue requirements then become $R = e + d + T + .0880(100) = e + d + T + 8.800$ by equation (9a) and $R = e + d + T + .09778(90) = e + d + T + 8.800$ by equation (9b).

The equivalence of these two procedures is significant in understanding the implications of the tax law with respect to the investment tax credit.

The Investment Tax Credit

A general analysis of the investment tax credit.—The investment tax credit, originally enacted in 1962, has had a turbulent history. As indicated earlier, it was introduced as a direct credit against U.S. income tax in order to create an incentive for business to keep up technologically and provide employment. The credit was temporarily suspended for a short period in 1966–67, terminated in 1969, reenacted in 1971, and amended in 1975.

Throughout its history, the maximum credit has been 7% of qualified investment property, except for public utilities which were given a 3% maxi-

Table 1
Hypothetical Balance Sheet ($)

Assets		Liabilities and Net Worth	
Net plant (B)	100	Long-term debt (D')	50
		Common equity (S')	40
		Cost-free capital (C')	10
Total assets	100	Total financing	100
$r_D = 8\%$		$r_S = 12\%$	

mum rate until reenactment in 1971 when 4% was permitted. The investment tax credit has taken on increasing importance for public utilities because the Tax Reduction Act of 1975 made several important changes, specifically to increase the investment tax credit to 10% through 1976, to eliminate the 50% limitation on the amount of the investment credit to be written off against taxes payable, and to permit investment tax credits on property presently under construction rather than waiting until the property is placed in service.

To indicate the importance of the investment tax credit, consider the case where a public utility has a credit of C' dollars for a given year. If the utility would flow the credit through and reflect the reduction in revenue requirements immediately, equation (1) would be rewritten as

$$R^f = e + d + T^f - C' + rB = R - \frac{C'}{1 - \tau} \tag{10}$$

(where R^f and T^f are the revenue requirement and income taxes under flow-through and τ is the income tax rate) reflecting an immediate reduction in the rates that the ratepayer would benefit from. The ratepayer would realize the entire benefit of the credit in the first year.[1]

If on the other hand the credit was "normalized" over the life of the assets which were purchased, the *direct* reduction in revenue requirements in the first year would be only C'/n, where n is the life of the assets. The remaining portion of the credit, $C' - C'/n$, would have its effect on revenue requirements over the remaining life of the asset. But for the time being, this amount would appear on the balance sheet in the form of a deferred investment tax credit. Since the rate base arising on the asset side of the balance sheet is not affected, the utility now has

$$B = D' + S' + C' - \frac{C'}{n} \tag{11}$$

where $D' \leq D$ and $S' \leq S$ are the new debt and equity amounts on the balance sheet and the deferred investment tax credit $C' - C'/n$ is used to refinance debt and equity.

The fact that the capital structure can now be changed because of the investment tax credit has effects on the fair rate of return and consequently the revenue requirements. For the first year of the asset's life then, we would find:

$$R_1^N = e + d + T_1^N - \frac{C'}{n} + r_1^N B \tag{12}$$

where

$$r_1^N = r_D \frac{D'_1}{B} + r_S \frac{S'_1}{B} + r_C \frac{C' - C'/n}{B}, \tag{13}$$

1. Note the "double effect" of the credit. The credit itself will reduce revenue requirements by C'. This reduction in revenue requirements will reduce the tax liability (before deducting the credit), thus further reducing the revenue requirements.

r_C being the cost of the capital supplied by the investment tax credit and

$$T_1^N = (R_1^N - e - d - r_D D'_1)\tau \tag{14}$$

is the modified first year tax that would result from both the change in the revenue requirements and the change in the debt amount in the capital structure.

Furthermore, substituting (14) and (13) into (12) and solving for R_1^N yields

$$R_1^N = R - \frac{r_D(D - D'_1)\tau}{1 - \tau} + \frac{(r_1^N - r)}{1 - \tau} B - \frac{C'}{n(1 - \tau)}. \tag{15}$$

The revenue requirements under the normalization method would change each year since the capital structure would change due to a decreasing amount of deferred investment tax credit. Thus (13) and (15) could be rewritten to reflect the changing return and revenue requirements over the life of the asset:

$$r_1^N = r_D \frac{D'_i}{B} + r_S \frac{S'_i}{B} + r_C \frac{C' - i(C'/n)}{B} \qquad i = 1, \ldots, n. \tag{13a}$$

and

$$R_1^N = R - \frac{r_D(D - D'_i)\tau}{1 - \tau} + \frac{(r_1^N - r)B}{1 - \tau} - \frac{C'}{n(1 - \tau)}. \qquad i = 1, \ldots, n. \tag{15a}$$

Then the entire rate reduction over the life of the asset is

$$\sum_{i=1}^{n} \left[\frac{r_D(D - D'_i)\tau}{1 - \tau} - \frac{(r_1^N - r)B}{1 - \tau} + \frac{C'}{n(1 - \tau)} \right]$$

$$= \frac{(1 + \tau)r_D}{1 - \tau} \sum_{i=1}^{n} (D - D'_i) \tag{16}$$

$$+ \frac{r_S}{1 - \tau} \sum_{i=1}^{n} (S - S'_i) + \frac{C'}{1 - \tau} \left[1 - \frac{n - 1}{2} r_C \right].$$

The first two terms in (16) are benefits derived by the ratepayer from the fact that less debt and equity capital are needed because of the credit. We will call this the capital structure effect. The third term is the net effect of the flow-through of the credit in the cost of service over the life of the asset and the cost at which the capital provided by the credit is assigned to the ratepayer. For example, if $r_C = 0$ then the third term represents only the direct benefits of the flow-through of the credit, $C'/(1 - \tau)$, while if $r_C \neq 0$ then the costs assigned to the ratepayer for this capital are subtracted from the direct benefits.

Options under the Internal Revenue Code.—As indicated earlier, four options are possible under the Revenue Act of 1969, as amended by the 1975

Revenue Act, although option D is permitted only in special circumstances. The general intent of the provisions established by the Internal Revenue Service is to insure that the public utility receives some of the benefit of the investment tax credit. Specifically, if a regulatory commission requires that a public utility flow through the investment credit at a rate faster than permitted, or insists upon a greater rate base adjustment than is permitted under the applicable option, then that company would not be allowed to take any investment credit thereafter, and the credit would be lost for any taxable periods affected.

Option A provides that the investment tax credit is not to be available to a company with respect to any of its public utility property if any part of the credit to which it would otherwise be entitled is flowed through to income. In such a case, we view this treatment as a direct payment from the ratepayer to the public utility. We view the investment tax credit as a selective reduction in taxes which *should* accrue to the ratepayer, not to the public utility. Our position is based on the premise that the public utility has at its disposal the regulatory commission to increase its investment if this is needed, and should not rely on selective reductions in taxes which are indirectly paid by the ratepayers.

Therefore under this option the ratepayer would have no reduction and would continue to pay revenue requirements of R. The entire credit, C', would increase the rate of return to the investor. The first year rate of return to the stockholder would be $r_S + C'/S$.

Option B indicates that if the investment credit is not flowed through directly to income, then the tax credit may be used to reduce the rate base, provided that this reduction is restored over the useful life of the property.

Note that this rule, by allowing the unamortized credit to be deducted from the rate base, treats the deferred investment tax credit as zero cost capital. However, since it does not allow a portion of the credit to be deducted from the revenue requirements, the ratepayer does not receive the *direct* benefit of the credit. In option A, the utility benefited immediately and the ratepayer not at all, whereas under option B the ratepayer benefits only over the life of the property, but not in the beginning when the cash flow from the investment credit should be recognized. In essence, the ratepayer is making a tax-free loan to the investor.

Accordingly, the option B procedure produces revenue requirements of

$$R_i^b = e + d + T_i^b + r_i^b B \tag{17}$$

or

$$R_i^b = R - \frac{r_D(D - D'_i)\tau}{1 - \tau} + \frac{(r_i^b - r)B}{1 - \tau} \tag{18}$$

where

$$r_i^b = r_D \frac{D'_i}{B} + r_S \frac{S'_i}{B} \tag{19}$$

Using (19) in (18) we have $R_i^b = R - [(1 + \tau)/(1 - \tau)]\tau_D (D - D'_i) - (r_S/1 - \tau)(S - S'_i)$ and the accumulated rate reduction over the entire period is

$$\frac{(1 + \tau)r_D}{1 - \tau} \sum_{i=1}^{n} (D - D'_i) + \frac{r_S}{1 - \tau} \sum_{i=1}^{n} (S - S'_i) \tag{20}$$

which can be seen, with reference to (16), as resulting from only the capital structure effects. The stockholder will receive a rate of return of $r_S + C'/nS'_i \geq r_S$ each year, since the amount C'/n will be moved from the deferred investment tax credit account to the stockholder equity account.

Clearly, then, option B can be examined from two standpoints. If one assumes that the credit should be given to the utility, then the utility has been penalized in that the rate base has been reduced which leads to less revenue from the ratepayer. If, on the other hand, one assumes that the credit should go to the ratepayer, then the ratepayer has been penalized because the rate reduction does not include the direct benefits of the credit.

Under option C, the credit may be used to reduce the cost of service ratably over the book life of the asset. In this case the credit cannot be used to reduce the taxpayer's rate base.

Since the credit is flowed through to the ratepayers, albeit over the life of the asset, this option recognizes that the credit reduces the cost of service to the ratepayers and thus partially conforms with the traditional theory that the ratepayer should pay for the cost of service. However, since the ratepayer does not receive an immediate rate reduction of the entire amount of the credit, he is in effect making a loan to the utility of the deferred portion of the credit. We can thus look upon this option as similar to option B, although differences exist in the timing and amount of the payments that the ratepayer must make.

Note also that by specifying that the unamortized credit cannot be used to reduce the rate base, this option indicates that the accumulated deferred investment tax credit cannot be counted as zero-cost capital. Furthermore, with respect to this point, the Senate report (1971 Revenue Act) has the following comment: "In determining whether or to what extent a credit has been used to reduce the rate base, reference is to be made to any accounting treatment that can affect the company's permitted profit on investment in any way other than as though it had been contributed by the company's common stockholders. For example, if the 'cost of capital' rate assigned the credit is less than that assigned to common stockholders' investment, that would be treated as, in effect, a rate base adjustment." To see the effect of this option, note that in equations (13)–(16) r_C must be replaced by r_S. That is, (13a) becomes

$$r_i^N = r_D \frac{D'_i}{B} + r_S \frac{S'_i + C' - \dfrac{C'}{n}}{B}. \tag{21}$$

Therefore the effective rate of return to the stockholder is

$$r_S + r_S \frac{C' - i\frac{C'}{n}}{S'_i} \geq r_S \tag{22}$$

and the total reduction of rates to the ratepayer is, from (16),

$$\frac{(1+\tau)r_D}{1-\tau} \sum_{i=1}^{n} (D - D'_i) + \frac{r_S}{1-\tau} \sum_{i=1}^{n} (S - S'_i) + \frac{C'}{1-\tau}\left(1 - \frac{n-1}{2} r_S\right). \tag{23}$$

Option D allows companies *classified as "flow through"* under the accelerated depreciation limitations of the Tax Reform Act of 1969 to file (by March 9, 1972) an election to eliminate all rate-making limitations. This option would then produce the total revenue requirements or cost of service reduction of $C'/(1 - \tau)$ as shown in (10). The common stockholder would receive a rate of return of r_S. This option recognizes the investment tax credit as belonging to the ratepayer.

III. IMPLICATIONS OF THE TREATMENT OF THE INVESTMENT TAX CREDIT

General Analysis

In comparing the implications of the treatment of the credit under the various options, one can take alternative points of view. Comparison of the effect on the ratepayers with and without the credit would be a useful comparison to make, as would the effects on the stockholder with and without the credit.

Table 2 summarizes the effects on the ratepayer and the stockholder from the various rules. Clearly, option A benefits the utility whereas option B benefits both the ratepayer and the stockholder. Since under option B some zero-cost debt is incorporated into the capital structure, this results in beneficial leverage which should also reduce the risks on the common equity which, if recognized by commissions, will reduce r_S and consequently the cost of service to the ratepayer.

As previously noted, both the ratepayer and the stockholder benefit from the application of option B. In addition, the rule is consistent with looking upon the investment tax credit as an interest-free loan from the ratepayer to the public utility.

Option C eventually flows through the credit to the ratepayers, and treats the investment tax credit as a loan from the ratepayers to the utility. Notice, however, that the stockholder reaps a benefit greater than r_S. This results because the option states that, in calculating the rate of return, the

Table 2
Benefits to Ratepayers and Stockholders

Option	Benefits to Ratepayers: Cost of Service Reduction over the Life of the Asset	Benefits to Stockholders: Additional Rate of Return
A.....	None	$\frac{C'}{S}$ (First year change only)
B.....	$\frac{(1+\tau)}{1-\tau} r_D \sum_{i=1}^{n} (D - D'_i) + \frac{r_S}{1-\tau} \sum_{i=1}^{n} (S - S'_i)$	$\frac{C'}{\sum_{i=1}^{n} S'_i}$ (Weighted average)
C.....	$\frac{(1+\tau)}{1-\tau} r_D \sum_{i=1}^{n} (D - D'_i) + \frac{r_S}{1-\tau} \sum_{i=1}^{n} (S - S'_i) + \frac{C'}{1-\tau}\left(1 - \frac{n-1}{2} r_S\right)$	$r_S\left(\frac{n-1}{2}\right)\frac{C'}{\sum_{i=1}^{n} S'}$ (Weighted average)
D.....	$\frac{C'}{1-\tau}$	None

deferred credit must be charged the *equity cost*, r_S. This is a strange bit of economic logic. The ratepayer must pay a rate of return on funds which he loaned to the company! Furthermore, as long as $r_S > 2/(n-1)$, which is likely to be the case, the stockholder benefits more by option C than he does by option B. Furthermore, if $r_S > 2(n-1)$, the third term in the cost of service reduction will be negative! This means that the ratepayer receives less benefit than was the case in option B. Thus the option clearly favors the company.

If the logic of option C is followed through, it should specify that the deferred portion of the credit should be subtracted from the rate base or, in effect, that the capital so provided should be evaluated at zero cost. Under this approach there would be no *additional* rate of return to the stockholder and the ratepayer would benefit by both the capital structure effects and the credit effect, $C'/(1-\tau)$.

Thus it seems that the logic of option B is consistent with its application, whereas the logic of option C is confused.

There is another aspect of option C worth considering. Clearly the stockholder benefits from this option as it now stands. But does the ratepayer benefit at all?

Without considering the time value of money the ratepayer will benefit as long as

$$\frac{(1+\tau)r_D}{1-\tau}\sum_{i=1}^{n}(D-D'_i) + \frac{r_S}{1-\tau}\sum_{i=1}^{n}(S-S'_i) + \frac{C'}{1-\tau}\left(1-\frac{n-1}{2}r_S\right) > 0 .$$

Assuming that the ratio $D'_i/S'_i = D/S = k$ for all i, we can rewrite the inequality as

$$\left[\frac{(1+\tau)}{1-\tau}r_D k + \frac{r_S}{1-\tau}\right]\sum_{i=1}^{n}(S-S'_i) + \frac{C'}{1-\tau}\left(1-\frac{n-1}{2}r_S\right) > 0 . \tag{24}$$

Clearly, since $S'_1 < S'_i$ for all i, the maximum value of $S - S'_i$ occurs at $i = 1$. The minimum value is zero. The simple average value, assuming $S'_1 = S[1 - C'/(D + S)]$, would then be

$$\left(\frac{1}{2}\right)(S-S'_i) = \left(\frac{1}{2}\right)\left(\frac{SC'}{D+S}\right). \tag{25}$$

Thus (24) can be written as

$$\left(\frac{1+\tau}{1-\tau}r_D k + \frac{r_S}{1-\tau}\right)\frac{1}{2}\frac{SC'}{D+S} + \frac{C'}{(1-\tau)n}\left(1-\frac{n-1}{2}r_S\right) \geq 0$$

and the ratepayer will be better off if

$$[(1+\tau)r_D k + r_S]\frac{1}{2}\frac{1}{1+k} + \frac{1}{n}\left(1-\frac{n-1}{2}r_S\right) \geq 0 \tag{26}$$

or

$$\frac{(1+\tau)r_D n^2 k + 2(1+k)n}{(n-1)k-1} \geq r_S .$$

Since the left-hand side of (26) is difficult to analyze, it is worthwhile to try an example. Suppose $\tau = .5$, $r_D = .08$, $n = 30$, $k = 3/2$. Then (26) becomes $5.92 \geq r_S$. Thus (26) is likely to hold for all reasonable values of the parameters. Some benefit will then accrue to the ratepayer in all instances.

The important point, however, is that option C, even though it benefits both the ratepayer and the stockholder, provides a greater proportion of benefit to the stockholder than option B.

IV. SUMMARY AND CONCLUSIONS

The 1971 Revenue Act specifies that, in order for utilities to be able to take advantage of the investment tax credit, regulatory bodies must treat the credit in one of four ways for rate making. Option A provides that the full benefit of the credit be given to the public utility. Option B calls for no portion of the credit to be used in the cost of service but specifies that the deferred portion of the credit must be subtracted from the rate base. Option C

allows the ratable portion of the credit to be used to reduce the cost of service but does not allow the deferred portion to be subtracted from the rate base and furthermore implies that the deferred portion is to be treated as equity capital in determining the overall rate of return. Option D allows immediate flow-through of the credit for certain companies that elect this option.

It appears that the four rules do not flow from one consistent, logical theory. Option A provides direct relief to the public utility. Option B provides for essentially a tax-free loan from the ratepayer to the public utility. Similarly, option C arrives at much the same approach as option B, and option D provides direct relief to the taxpayer.

Although options B and C benefit both the ratepayer and the stockholder, option C distributes a greater proportion of the benefits to the stockholder.

One could argue that, so long as the treatment of the credit benefits both stockholders and ratepayers, there is little point in arguing about the distribution of the spoils. We believe, however, that this is a short-sighted view. First, one must ask why the stockholder would receive any extra benefits at all. By law (if not in practice) the utility is to receive a fair and reasonable rate of return where this return is defined as one which allows the attraction of capital, maintenance of credit, and financial integrity, and is comparable to the return in other enterprises of similar risks and hazards. If these returns are now being granted, then there is no need to grant higher returns for the purposes of capital attraction, financial integrity, or comparability. Furthermore, there is no need to provide an incentive for the investment by the utility, as we have previously argued, because utilities invest to meet customer demands—no more, no less.

One could argue that the incentive is needed on the capital attraction–financial integrity–comparability side because of the niggardly treatment the utilities have received from commissions. Indeed this may well describe the facts of the present situation of the utilities. However, in this case the investment tax credit would be providing through the back door what the rate of return should be providing through the front. We reject the proposition that two offsetting errors are equivalent to no errors at all.

It seems to us that if an investment tax credit is provided through the tax law for public utilities it should go to the ratepayers, not the stockholders. Thus the immediate flow-through option should be allowed. If option C is used it should allow deduction of the deferred portion of the credit from the rate base.

One further comment is relevant at this point. The current credit percentage of 10% and the proposed percentage of 12% along with the present rates of inflation will lead to increasing amounts of the credit and clearly will magnify the benefits which will accrue to both the ratepayer and the stockholder.

CUB/502 Tran

Exhibit CUB/502 Tran is a PDF of the workpaper “IQBD Cost & Recovery Model” provided by PGE in excel format.

2025 Forecasted IQBD Costs

Adjust discount levels and enrollment target to estimate 2025 program costs

Discounts					
Tiers	0-5% SMI	6-15% SMI	16-30% SMI	31-45% SMI	46-60% SMI
Discount Amounts (%)	60%	40%	25%	20%	15%
Average Bill Amount	$ 162	$ 184	$ 167	$ 177	$ 176
Average Discount Amount	$ 92	$ 70	$ 40	$ 34	$ 25
Program Cost ($M)	$ 11.4	$ 10.4	$ 11.8	$ 12.5	$ 7.4
Program Cost Total ($M)	**$ 53.5**				

2025 Forecasted Schedule 118 Prices and Impacts

Adjust kWh cap to estimate Sch 118 impacts based on USAGE

	Revenues ($M)	0.4% Uncoll Adj ($M)	Sch 118 Revenues ($M)	
Residential	$ 21.4	$ 0.1	$ 21.3	
Non-residential	$ 32.3	$ 0.1	$ 32.2	
	$ 53.7		$ 53.5	
Price	$ 0.00271		**$ 53.5**	IQBD Direct Costs
kWh Cap	**20,000,000**		$ 0.0	Over (under) collections
Cap (in $)	$54,200			
Avg Res kWh	795			

No adjustments needed to estimate Sch 118 impacts based on REVENUE

	Revenues ($M)	0.4% Uncoll Adj ($M)	Sch 118 Revenues ($M)	
Residential	$ 27.4	$ 0.1	$ 27.3	
Non-residential	$ 26.3	$ 0.1	$ 26.2	
	$ 53.7		$ 53.5	
% of 2025 Revs	1.7%		**$ 53.5**	IQBD Direct Costs
			$ (0.0)	Over (under) collections

Rate Schedule	Rate Schedule	2025 SPs/Sites*	2025 MWh	2025 Revenue $ Millions	MWh Subject to Sch 118	Sch 118 Impacts Based on Usage $ Millions	% of Revs	Ave Amt $/mo.	Sch 118 Impacts Based on Revenue $ Millions	% of Revs	Ave Amt $/mo.
Residential	7	829,611	7,889,185	$ 1,657.3		$ 21.4	1.3%	$ 2.15	$ 27.4	1.7%	$ 2.75
Outdoor Area Lighting	15		13,091	$ 4.5	13,091	$ 0.04	0.8%		$ 0.1	1.7%	
General Service <30 kW	32	96,384	1,550,351	$ 311.4	1,550,351	$ 4.2	1.3%	$ 3.63	$ 5.1	1.7%	$ 4.45
Opt. Time-of-Day G.S. >30 kW	38	353	27,036	$ 5.8	27,036	$ 0.1	1.3%	$ 17.30	$ 0.1	1.7%	$ 22.59
Irrig. & Drain Pump. < 30 kW	47	2,764	20,557	$ 6.0	20,557	$ 0.1	0.9%	$ 1.68	$ 0.1	1.7%	$ 2.98
Irrig. & Drain Pump. > 30 kW	49	1,377	59,354	$ 15.0	59,354	$ 0.2	1.1%	$ 9.73	$ 0.2	1.7%	$ 15.04
General Service 31-200 kW	83	11,811	2,867,544	$ 441.0	2,867,544	$ 7.8	1.8%	$ 54.83	$ 7.3	1.7%	$ 51.44
General Service 201-4,000 kW											
Secondary	85-S	1,260	2,074,490	$ 260.9	2,074,490	$ 5.6	2.2%	$ 372	$ 4.3	1.7%	$ 285
Primary	85-P	169	673,719	$ 73.4	673,719	$ 1.8	2.5%	$ 900	$ 1.2	1.7%	$ 598
Schedule 89 > 4 MW											
Primary	89-P	21	1,024,681	$ 99.4	1,024,681	$ 2.8	2.8%	$ 11,019	$ 1.6	1.7%	$ 6,517
Subtransmission	89-T/75-T	3	32,594	$ 3.7	32,594	$ 0.1	2.4%	$ 2,454	$ 0.1	1.7%	$ 1,720
Schedule 90	90-P	5	3,685,313	$ 315.3	1,200,000	$ 3.3	1.0%	$ 54,200	$ 5.2	1.7%	$ 86,870
Street & Highway Lighting	91/95	189	37,437	$ 14.4	37,437	$ 0.1	0.7%	$ 45	$ 0.2	1.7%	$ 105
Traffic Signals	92	16	2,724	$ 0.3	2,724	$ 0.0	2.5%	$ 38	$ 0.0	1.7%	$ 26
Direct Access 201-4,000 kW											
Secondary	485-S	192	433,088	$ 14.0	433,088	$ 1.2	8.4%	$ 509	$ 0.2	1.7%	$ 100
Primary	485-P	50	304,716	$ 8.3	304,716	$ 0.8	10.0%	$ 1,376	$ 0.1	1.7%	$ 228
Direct Access > 4 MW											
Primary	489-P	17	1,096,147	$ 12.7	1,096,147	$ 3.0	23.4%	$ 14,562	$ 0.2	1.7%	$ 1,030
Subtransmission	489-T	3	249,687	$ 2.9	249,687	$ 0.7	23.2%	$ 18,796	$ 0.0	1.7%	$ 1,341
New Load Direct Access > 10MW											
Primary	689-P	3	256,336	$ 3.2	256,336	$ 0.7	21.7%	$ 19,296	$ 0.1	1.7%	$ 1,471
	Total	944,224	22,298,051	$ 3,249.6		$ 53.7	1.7%		$ 53.7	1.7%	
	Non-residential only	114,616	14,408,866	$ 1,592.3	11,923,553	$ 32.3	2.0%		$ 26.3	1.7%	

* Customer counts reflects aggregation of service points to Sites where appropriate (load not adjusted)

August 29, 2024

To: Jesse Gorsuch
Alliance of Western Energy Consumers

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to AWEC Data Request 183
Dated August 21, 2024

Request:

Please refer to PGE/1200, Sheeran-Wise/13:13-19. Please provide the referenced evaluation and all supporting documents demonstrating that the costs to verify income eligibility would exceed the avoided cost of excluding ineligible customers.

Response:

PGE previously posted an RFP for post-enrollment verification but did not receive responses. Inquiries in 2022 with Community Action Partnership of Oregon (CAPO) showed estimates for the evaluation costs of $125 per customer. The amount paid for verification by utilities in Washington through low-income agencies is $75 per customer. Based on that guidance, PGE estimated the cost would be approximately $100 per customer. At the current enrollment rate, that would equate to approximately $8.5 million. As enrollments increase, so would the potential cost of verification. Not only would this increase the overall cost of the program and impact all customers, it would also create barriers and likely delay or reduce customer enrollments.

CUB/504 Tran

Exhibit CUB/504 Tran is a PDF of the workpaper “2025 Ratespread – January Prices Final” provided by PGE in excel format. Exhibit CUB/504 Tran/1 captures the “Generation” worksheet tab of this workpaper. Exhibit CUB/504 Tran/2 captures the “Load Follow" worksheet tab of this workpaper.

PORTLAND GENERAL ELECTRIC
ALLOCATION OF GENERATION REVENUE REQUIREMENT TO COS CUSTOMERS
2025

Schedules	COS Calendar Energy	Marginal Energy Costs ($000)	Marginal Energy Allocation	Marginal Capacity Costs ($000)	Marginal Capacity Allocation	Marginal Energy & Capacity Costs ($000)	Energy & Capacity Allocation Percent	Allocation of Load Following Adjs. ($000)	Allocated Energy & Capacity Costs ($000)	Cycle Basis Costs ($000)
Schedule 7	7,884,216	$644,220	39.9%	$471,316	51.01%	$1,115,536	43.96%	$7,524	$731,539	$732,001
Schedule 15	13,091	$924	0.1%	$426	0.05%	$1,351	0.05%	$0	$877	$876.73
Schedule 32	1,552,078	$126,210	7.8%	$68,949	7.46%	$195,160	7.69%	$1,474	$128,139	$127,996
Schedule 38	27,056	$2,227	0.1%	$1,061	0.11%	$3,288	0.13%	$26	$2,160	$2,158
Schedule 47	21,235	$1,892	0.1%	$1,133	0.12%	$3,025	0.12%	$22	$1,985	$1,918
Schedule 49	58,622	$5,334	0.3%	$3,391	0.37%	$8,725	0.34%	$62	$5,725	$5,797
Schedule 83	2,870,725	$233,784	14.5%	$120,211	13.01%	$353,995	13.95%	$2,730	$232,484	$232,226
Schedule 85	2,751,490	$222,329	13.8%	$102,295	11.07%	$324,624	12.79%	$2,597	$213,287	$213,033
Schedule 89/75	1,068,811	$84,406	5.2%	$34,664	3.75%	$119,069	4.69%	$986	$78,265	$77,421
Schedule 90	3,705,728.156	$289,409	17.9%	$119,282	12.91%	$408,690	16.11%	($15,421)	$249,831	$248,455
Schedule 91/95	37,437	$2,644	0.2%	$1,219	0.13%	$3,863	0.15%	$0	$2,507	$2,507
Schedule 92	2,724	$217	0.0%	$83	0.01%	$300	0.01%	$0	$195	$195
TOTAL	19,993,214	$1,613,595	100.0%	$924,030	100.0%	$2,537,625	100.00%	$0	$1,646,994	$1,644,582
4-Hour Battery				$237.36			**TARGET**		**$1,646,994**	
Projected Peak Load				3,893						
Marginal Capacity Costs ($000)				$924,030						

Load Following/Integration Allocation

Schedule	Calendar MWh	Generation Allocation	Adjusted Allocation	Load follow Allocation	Load follow Price	Transfer Payment	Cycle MWh	Cycle Revenues
Sch 7	7,884,216	39.9%	48.79%	$7,523,907	0.95	$7,523,907	7,889,185	$7,528,648
Sch 15	13,091			$0	0.00	$0	13,091	$0
Sch 32	1,552,078	7.8%	9.56%	$1,474,025	0.95	$1,474,025	1,550,351	$1,472,384
Sch 38	27,056	0.1%	0.17%	$26,009	0.96	$26,009	27,036	$25,990
Sch 47	21,235	0.1%	0.14%	$22,093	1.04	$22,093	20,520	$21,349
Sch 49	58,622	0.3%	0.40%	$62,293	1.06	$62,293	59,354	$63,070
Sch 83	2,870,725	14.5%	17.71%	$2,730,391	0.95	$2,730,391	2,867,544	$2,727,366
Sch 85	2,751,490	13.8%	16.84%	$2,596,604	0.94	$2,596,604	2,748,209	$2,593,508
Sch 89/75	1,068,811	5.2%	6.39%	$985,783	0.92	$985,783	1,057,276	$975,143
Schedule 90-P 30-250 Mwa	566,245		0.00%	$0	0.00	$0	563,126	$0
Schedule 90-P >250 Mwa	3,139,483			($15,421,104)	(4.91)	($15,421,104)	3,122,187	($15,336,146)
Sch 91/95	37,437			$0	0.00	$0	37,437	$0
Sch 92	2,724			$0	0.00	$0	2,724	$0
Totals	19,993,214	81.83%	100.00%	$0		$0	19,958,040	$71,313

Load Following Allocation:

MWh	3,153,600
Price (mills/kWh)	4.8900
Allocation	$15,421,104

Load following price development

4.89	
4.33	multiplier
2.47	

May 29, 2024

To: Bryan Conway
Public Utility Commission of Oregon

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to OPUC Data Request 457
Dated May 15, 2024

Request:

Please expand on the reasoning used to determine the Load Following price. In particular, please discuss where the hard coded numbers in cells C30:C32 in tab "Load Follow" in the workpaper "2025 Ratespread -January Prices FINAL". In your response please also provide a brief history of the Load Following Credit.

Response:

The Load Following Credit was introduced in a Partial Stipulation in PGE's 2014 GRC (UE 262), and the methodology used to calculate the credit has not fundamentally changed since that time. In UE 262, parties agreed to a load following credit of 1.13 per mills/kWh for 100MW. In PGE's 2018 GRC (UE 319), Parties entered into another Partial Stipulation and agreed to update the load following credit to 1.13 mill/kWh + 0.25mills/kWh. Parties also agreed the surcharge for Schedule 89 would not exceed 0.57 mills/kWh and the load following credit would be reduced accordingly if the Schedule 89 surcharge otherwise exceeds 0.57mills/kWh.

The Load Following Credit is applicable to Schedule 90 customers greater than 250 MWa, which are many multiples in size larger than other PGE customers. The purpose of the Load Following Credit recognizes the benefits of volume and load factor associated with customers of this magnitude. Since their load is consistent, PGE can factor their consistent load into our planning and resource mix for how PGE operates its bulk electrical system. Because PGE can plan for this load, PGE does not have to procure flexible capacity for this unexpectedly in the short energy market or trigger a Peaker plant resource. This is a significant benefit for the remainder of PGE's customer base.

The hard coded number in cell C30 is the flexibility value of a four-hour battery in Docket LC 80, PGE's most recently acknowledged IRP. The 2026, 4-hour battery value expressed in 2023 dollars comes from Table 47 on page 237. PGE converted the 2026, 4-hour battery value of $9.77 in Table 47 from kW to MWh. Attachment 457 A provides the calculation.

The hard coded number in in cell C31 is the previous Load Following Credit price from the UE 319 settlement.

The hard coded number in cell C32 is the previous Schedule 89 Load following price which is described above.

August 30, 2024

To: Scott Gibbens
Public Utility Commission of Oregon

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to OPUC Data Request 732
Dated August 23, 2024

Request:

Referring to PGE/2000, Macfarlane-Pleasant/17, the Company states that the current Load Following Credit is based on inputs from the 2016 IRP. Please provide any and all workpapers that link those values to the current Load Following Credit.

Response:

Although PGE indicated in testimony that the current price is based on outdated inputs from PGE's 2016 IRP, during a review of material to respond to this request, PGE determined the inputs and methodology used to calculate the existing load following credit were used prior to the 2016 IRP. They were used to set the $1.13 per MWh credit agreed to in a partial stipulation in PGE's 2014 GRC, Docket UE 262, which was approved through Order No. 13-459. The flexibility value approved in UE 262 is based on the costs PGE avoids for ancillary services between flat load and variable load in the day ahead, hour ahead and real time energy markets. Inputs from the 2016 IRP are not part of the calculation and PGE will address this in its surrebuttal testimony. Attachment 732-A provides the inputs from 2014 used to calculate the current Load Following Credit value.

August 30, 2024

To: Scott Gibbens
Public Utility Commission of Oregon

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to OPUC Data Request 734
Dated August 23, 2024

Request:

Please provide all supporting evidence to support the assertion that Schedule 90 is providing all of the same benefits as a 4-hour lithium-ion battery.

Response:

PGE does not assert "that Schedule 90 is providing all of the same benefits as a 4-hour lithium-ion battery." See PGE/2000, Macfarlane-Pleasant/17, discussing the flexibility portion of Schedule 90 only.

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 435

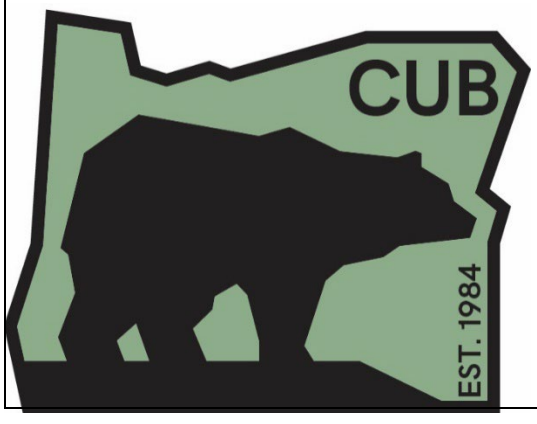
In the Matter of	)
	)
PORTLAND GENERAL ELECTRIC COMPANY,	)
	)
Request for a General Rate Revision.	)
	)

REBUTTAL TESTIMONY

OF THE

OREGON CITIZENS' UTILITY BOARD

September 10, 2024



BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 435

In the Matter of	)	
	)	
PORTLAND GENERAL ELECTRIC COMPANY,	)	REBUTTAL TESTIMONY OF SARAH WOCHELE AND BOB JENKS ON BEHALF OF THE OREGON CITIZENS' UTILITY BOARD
	)	
Request for a General Rate Revision.	)	
	)	

I. INTRODUCTION

Q. Are you the same Sarah Wochele and Bob Jenks who filed Opening Testimony on behalf of the Oregon Citizen's Utility Board (CUB)?

A. Yes, we presented UE 435/CUB/300/Wochele-Jenks. The joint testimony of Sarah Wochele and Bob Jenks on Portland General Electric's (PGE) proposed changes to the residential basic charge has been adopted by CUB's witness Ryan Tran.[1]

Q. What is the purpose of your testimony?

A. This Rebuttal Testimony focuses on energy burden and procedural justice issues related to PGE's request for a rate increase in this docket, specifically:

1. CUB's concerns with PGE's reluctance to urgently address energy burden issues in this case, especially given the record number of customers it disconnected for nonpayment this year.

[1] *See* UE 435 – CUB/500/Tran/1 adopting UE 435/CUB/300/Wochele - Jenks/3-21.

2. CUB's procedural justice concerns with how PGE engages with environmental justice advocates and community representatives in its service territory.

3. We discuss CUB's recommendations, including those offered in our Opening Testimony that PGE did not address in its Reply, as well as an additional related recommendation of expanding Time Payment Arrangements (TPAs) from 12 months to 24 months.

Overall, CUB is requesting that PGE address the urgent need to mitigate energy burden in this case, including implementing harm reduction policy changes which do not rely on changes to its Income-Qualified Bill Discount program (IQBD), and implement strategies to improve procedural justice in this and future filings.

II. ADDRESSING ENERGY BURDEN

Q. Please outline PGE's proposals related to energy burden in the current case.

A. PGE has been unwilling to address energy burden related issues (issues related to its IQBD, arrearages, and disconnections) in the current case, indicating it prefers to address these issues outside elsewhere.[2]

- In the Company's Initial Filing, it states: "[w]e intend to file with the Commission in Q3 2024 further updates to our discount program, informed by the EBA. This filing will be conducted in a separate docket to maximize focus and opportunities for engagement by energy justice communities."[3]

[2] UE 435 – PGE/1200/Sheeran - Wise/18.
[3] UE 435 – PGE/100/Pope - Sims/25.

- PGE told its Community Benefits and Impact Advisory Group (CBIAG)[4] this summer that the Company was "to file a 'new discount program' by September 27, 2024."[5]
- In its Reply Testimony the Company states, "PGE is evaluating the cost versus benefits of modifications to the existing IQBD tiers, and any changes to the discount levels or other program modifications would be considered within the EBA process and PGE's September filing."[6]
- Related to arrearages specifically, PGE stated, "PGE views an arrearage management program as a new offering with design details and cost considerations best addressed in the EBA process or in other comprehensive affordability dockets, such as Docket No. UM 2211 (UM 2211)."[7]
- In response to CUB's request for PGE to report arrearage data for 12-months following a rate increase,[8] PGE Witnesses Sheeran and Wise state, "PGE is unclear how this effort would reduce rate impacts for customers, and indeed increases the Company's regulatory burden and associated costs."[9]

Q. What are CUB's concerns with PGE's proposals to address energy burden?

A. CUB is concerned with PGE's refusal to address the urgency of mitigating energy burden in this rate case, opting instead for considering possible solutions at a later date, effectively delaying meaningful bill relief for its customers until after the rate effective date in this case. CUB is also concerned about achieving procedural

[4] *See* UE 435 – PGE/1200/Sheeran - Wise/30, "The CBIAG brings together a diverse group of members representing environmental justice communities, community-based organizations, and community representatives, offering support services and diverse perspectives from residents within PGE's service areas."
[5] July 2024 PGE CBIAG Meeting Slides, *available at* https://assets.ctfassets.net/416ywc1laqmd/6sMyMlRkBeZXDZ7QKFgLVA/12b8154b3a30121dd532bf2216c43e39/CBIAG_240724_July_Meeting__15.pdf
[6] UE 435 PGE/1200/Sheeran - Wise/12.
[7] *Id.* at 18.
[8] UE 435 – CUB/100/Jenks/78.
[9] UE 435 – PGE/1200/Sheeran - Wise/47.

justice with PGE's engagement with environmental justice groups and other community advocates or members.

Q. What does CUB propose PGE do *in the current case* regarding energy burden?

A. In the absence of a standardized equity impact analysis to better inform outcomes of the current case.[10] CUB feels it is crucial to ensure that some level of mitigative action, or harm reduction, is taken in the current case.

In addition to CUB's proposals to delay the rate effective date and to implement rate shock mitigation via a rate cap,[11] CUB proposes the following as recommendations that are not directly tied to IQBD changes, and therefore unlikely to be a part of PGE's scheduled September filing:

1. Changing the bill due date from 20 days to 30 days to give customers more time, and thus more pay periods, to pay their bills on time and in full;[12]
2. Removing late fees for *all* PGE customers, not just IQBD customers, *at least* until a more robust plan and program is put into place to address arrears and disconnections;[13] and

[10] UE 435 – CUB/300/Wochele - Jenks/34.
[11] *See* UE 435 – CUB/400/Jenks/28-34, 44-48.
[12] Per the National Consumer Law Center, "[t]he goal should be to reduce the frequency of both disconnections and disconnection notices, while also improving overall rates of utility revenue collection by educating customers about all available assistance." *See* Anna Kowanko and Charlie Harak, *More Can and Must Be Done to Prevent Utility Consumers from Losing Service Due to Mounting COVID-Driven Arrearages in Massachusetts and Other States*, National Consumer Law Center, 4 (Nov. 2021), *available at* https://www.nclc.org/wp-content/uploads/2022/10/Rpt_More_Covid_Util_Arrearage_Svc.pdf (hereinafter NCLC Nov. 2021 Report);
[13] UM 2211 - PGE's Energy Burden Assessment in Compliance with Order 23-386 (July 3, 2024) (hereinafter: PGE's EBA): From PGE's EBA, we know that 16% of households in PGE's territory earn between 60-100% SMI, making them ineligible for almost all energy assistance programs, but they may still bear a relatively high level of energy burden.

3. Extending Time Payment Arrangements (TPAs) from 12 months to 24 months for all customers, *at least* until a more robust plan and program is put into place to address arrears and disconnections.[14]

In addition to these recommendations, CUB would like assurances and commitments from PGE related to the urgency of IQBD related changes happening in time for the rate effective date:

1. PGE commit to implementing an arrearage management and forgiveness program with stakeholders in time with the rate effective date;
2. PGE commit to collaborating with stakeholders to increase bill discount tiers in line and in time with the final rate increase and rate effective date; and
3. PGE commit to implementing some level of assistance for its customers with incomes in the 61-100% SMI range, with stakeholders, and in time with the rate effective date.

Q. Should residential ratepayers fully cover the costs for these new or expanded programs?

A. No. HB 2475 directed the Commission to recover the costs associated with mitigating energy burden, including tariff schedules, rates, bill credits, or program discounts from *all* retail customers. If the Commission approves the above proposals, PGE will update its tariffs in its compliance filing implementing the rate case and these would be tariff schedules associated with mitigating energy burden.

[14] NCLC Nov. 2021 Report at 4; The National Consumer Law Center also states that for arrearages not forgiven, utilities should extend the length of the payment plans offered in order to make sure they are affordable to customers experiencing financial difficulty—in other words, that they better consider a customer's ability to pay. *See* Anna Kowanko and Charlie Harak, *COVID-Driven Utility Arrearages: IMPLICATIONS FOR POLICY IN MASSACHUSETTS AND THE NATION,* National Consumer Law Center, 14 (Feb. 2021), *available at* https://www.nclc.org/wp-content/uploads/2022/09/Rpt_Covid_Utility_Arrearages.pdf (hereinafter: NCLC Feb. 2021 Report).

Q. As part of CUB's rate shock mechanism, Witness Jenks recommends the Commission require the utility to propose and implement rate mitigation measures.[15] How are those measures different from what you are proposing to address energy burden?

A. Those measures are designed to mitigate rate shock, which is a different concept than energy burden. They are related concepts in that they describe unaffordability, but they are not the same. Rate shock deals with price increases that are substantial enough to be immediately harmful to customers.[16] Customers will have trouble absorbing the increase as it will require them to reduce their spending in other places. This is a different concept than energy burden, which reflects how much of a household's income must go towards their household's energy needs.[17] Rate shock is also problematic for customers who are not defined as energy burdened. For example, a household may not meet the State Median Income (SMI) definition of energy-burdened, but because they have significant health care costs, they may have a difficult time absorbing a 10%–20% increase in their electric bill. Low-income customers who are already disparately energy-burdened, particularly customers living paycheck-to-paycheck, disproportionally suffer the consequences of rate shock.

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[15] UE 435 – CUB/100 Jenks/73, lines 77- 78 (These tools include moving the rate effective date out of the winter, submitting a plan to the Commission outlining what it is doing to mitigate the rate shock, adopting a shut-off moratorium, reporting arrearages, and ordering the Company to suspend or reduce the amortization of certain deferred accounts or other single-issue ratemaking mechanisms, to reduce the impact of the rate increase.).

[16] *Id.*

[17] *See What is Energy Burden and What is Oregon Doing About it*, Charlotte Shuff (July 12, 2022), *available at* https://tinyurl.com/muk8tf6k (referencing Built Environment Energy Efficiency Working Group, *Ten-Year Plan: Reducing the Energy Burden in Affordable Housing* (2018), *available at* https://www.oregon.gov/energy/Get-Involved/Documents/2018-BEEWG-Ten-Year-Plan-Energy-Burden.pdf, included with this testimony as CUB/609.

CUB's rate shock proposal includes a mechanism to mitigate the distress of these sudden increases for all residential customers, regardless of income level.[18] CUB rejects the idea that a customer should have to weather the repeated blows of rate increases until they are so cash-strapped that they are in arrears and facing disconnection. Customers at 61-100% State Median Income (SMI) are especially vulnerable to these shocks. Though the economic, physical, and coping dimensions may be distinct, both energy burden and rate shock can lead to energy insecurity and energy poverty.

Q. How does the Commission address Energy Burden compared to Rate Shock?

A. The Commission has approved interim income-qualified bill discounts as allowed by HB 2475, the Energy Affordability Act.[19] The Commission has not adopted any mechanisms to specifically address the effects of rate shock on residential customers caused by large, sudden increases, nor have it been directed to by statute. Low-income customers, particularly customers who live paycheck-to-paycheck, can experience both energy burden and the distress caused by sudden increases to bills, i.e., rate shock. Indeed, rate shock can push households into deeper energy burden, and already significantly burdened households into energy poverty, "a state where households are challenged by everyday situations in

[18] *See* UE 435 – CUB/100 Jenks/72-81.
[19] *See* HB 2475 (2021).

meeting basic energy needs because of an assemblage of socio-economic, technical and environmental–political factors."[20]

Q. In Opening Testimony, CUB expressed concerns about PGE's rate of residential disconnections for nonpayment.[21] Did PGE adequately respond to the urgency of these concerns in its Reply Testimony?

A. No. PGE only referenced its existing resources, arguing that to do more would unnecessarily increase the cost of service for customers.[22] PGE did not offer any alternative solutions to address bill affordability immediately in this docket or prior to its intended rate effective date.

Q. Is CUB concerned about the energy burden implications of PGE pushing rate increase mitigation further down the road?

A. Yes. Recent disconnection reporting, as well as data coming out of PGE's IQBD re-enrollment process are two major causes for concern.

So far this year, PGE has disconnected significantly more low-income and medically vulnerable customers for nonpayment than it did last year. On August 20, 2024, PGE filed its quarterly disconnection report, and on August 30, 2024, PGE filed a correction to it, indicating there were more customers receiving assistance who PGE shut off for non-payment than the Company initially reported—going back to May 2023.[23] This year, PGE disconnected 577 more residential customers

[20] *See* Dominic J. Bednar and Tony G. Reames, *"Fleeting Energy Protections: State and Utility Level Policy Responses to Energy Poverty in the United States during COVID-19,"* Energy Research & Social Science 99 (May 2023): 103045, *available at* https://doi.org/10.1016/j.erss.2023.103045 referenced in CUB/608, fn. 35.
[21] UE 435 – CUB/300/Wochele - Jenks/19.
[22] UE 435 – PGE/1100/Kliever – Liddle/9.
[23] RO 12 - PGE's Service Disconnection Quarterly Report May 1, 2024 - July 31, 2024, and PGE's Corrected Quarterly Disconnect Report for May 1, 2024 to July 31, 2024.

receiving energy assistance and PGE customers with medical certificates were disconnected for non-payment more than double than were last year.[24] See Figure 1 below.

Figure 1: Comparison of customers receiving energy assistance who were disconnected for non-payment.[25]

Months	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023	2023 Total
Energy Assistance Customers Disconnected (revised)	*420*	*164*	*480*	*157*	*244*	*505*	*22*	***1992***
Months	**January 2024**	**February 2024**	**March 2024**	**April 2024**	**May 2024**	**June 2024**	**July 2024**	**2024 Total**
Energy Assistance Customers Disconnected (revised)	*82*	*291*	*343*	*523*	*531*	*409*	*390*	***2569***
Months	**January 2023**	**February 2023**	**March 2023**	**April 2023**	**May 2023**	**June 2023**	**July 2023**	**2023 Total**
Medical Certificate Holders Disconnected (revised)	*15*	*6*	*5*	*5*	*5*	*16*	*0*	***52***
Months	**January 2024**	**February 2024**	**March 2024**	**April 2024**	**May 2024**	**June 2024**	**July 2024**	**2024 Total**
Medical Certificate Holders Disconnected (revised)	*0*	*11*	*7*	*10*	*29*	*19*	*19*	***95***

CUB acknowledges that during this time there were also increases in IQBD participation and in the number of medical certificate holders in PGE's territory.[26] This indicates that more of PGE's customers are vulnerable to increasing bills. Any

[24] *Id.*
[25] *See* PGE's Service Disconnection Quarterly Reports in Docket No. RO 12.
[26] *See* CUB/602 – PGE Response to CUB DR 127 Attach A, for the number of medical certificate holders by month starting in January 2023. This also includes how many medical certificate holders are also IQBD customers.

increases in disconnection numbers is still a concerning flag that requires immediate attention. Especially since the IQBD is intended to help lessen energy burden, and medical certificates indicate a customer's health is immediately in jeopardy without power.[27]

Q. What concerns with the IQBD re-enrollment process support CUB's request for urgency surrounding PGE meaningfully addressing energy burden related issues in time for the rate effective date?

A. PGE began the implementation of its re-enrollment process, as well as its Post-Enrollment Verification (PEV) in April and May of 2024, respectively.[28] The data from this first PEV process will not be available until process completion, which is expected in September 2024.[29]

Of the 13,437 IQBD customers who were flagged for re-enrollment in May, June and July 2024, approximately 3.6% (486) were also disconnected for non-payment during these three months.[30] Moreover, from April 18, 2024, to July 31, 2024, there were 3,207 customers who were un-enrolled in IQBD simply because they did not respond to re-enrollment requests.[31] This means that approximately 21.3% of customers who were flagged for re-enrollment were unenrolled due to

[27] *See* Oregon Medical Certificate Program, *available at* https://www.oregon.gov/puc/Documents/OregonMedicalCertificateProgram.docx.pdf.
[28] According to CUB/605 – PGE Response to CUB DR 132, PGE sent an initial letter or email to the selected IQBD participants on May 24, 2024, asking them to provide Oregon Energy Fund income verification documentation within thirty days. PGE sent a second letter or email on July 18, 2024, asking those who had not already responded to provide Oregon Energy Fund income documentation within seven days. Throughout the month of August 2024, Oregon Energy Fund made follow-up phone calls to those who had not already responded to PGE's two communications.
[29] CUB/605.
[30] CUB/601 – PGE Response to CUB DR 126 and CUB/604 – PGE Response to CUB DR 131.
[31] CUB/604.

non-response. Of these un-enrolled customers, 24 were also medical certificate holders.

As of the end of July 2024, there were 255 customers unenrolled for self-attesting that they were over-income.[32] This includes at least 226 customers who fell in the 61-100% of SMI range,[33] which has been noted by the EBA as those in the "energy assistance hole" as they require assistance, but do not qualify for assistance.[34] This means that at least 87% of those unenrolled for being over-income are customers who can be categorized as being in the "energy assistance hole." Despite being under the State Median Income, these customers remain ineligible for energy assistance.[35]

The unenrollment of at least 226 households in the 61-100% SMI range, with a rate increase on the horizon, is essentially a guarantee that the energy burden of these households will increase, which also increases the likelihood that these households will experience disconnection. Not only are these households currently ineligible for assistance with PGE, but they are not exempt from late payment fees, or reconnection fees. CUB reiterates the necessity of eliminating late payment fees for *all* residential customers, *especially* if PGE does not plan to address the needs of this customer segment ahead of the rate effective date.

[32] *Id.*
[33] *Id.* (note that 15 PGE customers notified the Company that they were over income, but they did not provide updated income. Therefore, it is possible that there were more customers in the 61-100% SMI range.)
[34] PGE EBA at 67.
[35] *Id.* at 64 (estimates there are ~22k non-low-income households with a high energy burden).

Moreover, given that as of July 31, 2024, there were 3,207 customers unenrolled from IQBD simply for not responding to self-attest of their income two years following their initial re-enrollment, CUB finds that PGE should regularly review and make updates to its IQBD program, including developing more targeted outreach to increase enrollments, but also to its other related policies as CUB discussed above, which can act as a thin but necessary layer of harm reduction in the proposed rate increase.

Q. Does CUB have a recommendation related to PGE's re-enrollment process?

A. Yes. CUB would like PGE to include data related to its re-enrollment *and* its post-enrollment verification (PEV) processes into its existing IQBD reporting in Docket No. 195. The data reported should be akin to CUB's and Staff's data requests[36] made to the Company, specifically:

As with the current RE 195 reporting, this data should be reported by month, with a quarterly cadence, and be at the zip code level for metrics where it is both feasible and makes sense to do so related to tracking energy burden and re-enrollment process outcomes.

Additionally, CUB would like PGE to ensure this data is intentionally reviewed with at least its IQBD Program Update Stakeholder Group *and* its CBIAG. This overview, or "walkthrough" should be done using data visualization to ensure accessibility and understanding, and be informed by stakeholder questions, as well as the aforementioned UE 435 data requests. The timing of this

[36] CUB/604; CUB/606 – PGE's Response to CUB DR 133; CUB/607 – PGE's Response to OPUC DR 665.

should be done in line with the IQBD/EBA update. This data could be helpful to consider in conjunction with the Company's September IQBD Update filing and therefore, we would like PGE to also include this re-enrollment and PEV data in the forthcoming filing.[37]

Q. How does CUB respond to PGE's sentiments surrounding the effectiveness of arrearage reporting for 12-months after a rate increase?[38]

A. The ongoing absence of an arrearage management or forgiveness program, as well as the recent trend of more frequent rate increases, means consumer advocates and other stakeholders need to be able to assess how customers in PGE's territory are impacted by a *lack* of mitigative policy in this realm. Moreover, the Company reports arrearage data already for IQBD customers only, in Docket No. RE 195.[39] We are asking for this reporting to be done for all customers, as we understand impacts of rate shock and energy burden are not limited to IQBD households. The necessity of reporting arrearage data is a well-documented, commonsense recommendation, and is often supported by the National Consumer Law Center (NCLC). Specifically, NCLC recommends that

> [s]tates should collect detailed data on the number of customers in arrears, the amount of arrears accruing, and the age of arrears by customer class. Also, it is imperative that data collection be expanded to include zip code level reporting in order to understand and address any racial disparities."[40]

and acknowledged that

> "[t]ransparency in data, too, allows for public review of the impact of utility rate, disconnection and other credit and collections policies to assess whether

[37] *See* CUB/606 (PGE's post-enrollment verification (PEV) data will be available in September at the conclusion of its PEV process).
[38] UE 435 – PGE/1200/Sheeran - Wise/47
[39] RE 195 - PGE's Quarterly Schedule 18 Income Qualified Bill Discount Reporting in Compliance with Order 23-116.
[40] NCLC Feb. 2021 Report at 3.

> certain populations or communities are being disproportionately impacted by utility policies. Data on arrearages, disconnection notices, disconnections, deferred payment arrangement defaults, late fees, and other metrics, by zip code or U.S. Census tract, are necessary for utilities, advocates, the public and policy makers to assess the affordability of rates in general and to craft needed remedies to ensure affordability and end the inequitable disconnection of vulnerable populations.[41]

The Center on Global Energy Policy at Columbia University has made similar recommendations.[42] This reporting effort on its own of course would not reduce rate impacts for customers. However, measuring energy burden related data is a necessary step towards addressing energy burden related issues that come from rate increases.

Q. Can all the affordability issues raised by CUB (i.e., rate shock and energy burden) be addressed in other venues, such as the forthcoming IQBD update filing, or in Docket No. UM 2211?

A. While this is procedurally an option, CUB believes that we should listen to PGE customers and environmental justice advocates and address affordability issues as soon as possible: in this docket. PGE's 18% rate hike combined with the arctic weather in January left many customers with bills that were unaffordable and this led to an unprecedented increase in disconnections. It also led to thousands of customers submitting public comment to this proceeding asking that the Commission address the issue of affordability with regards to PGE's rates. This

[41] Karen Lusson, *Protecting Access to Essential Utility Service During Extreme Heat and Climate Change*, National Consumer Law Center, 27 (July 2024), *available at* https://www.nclc.org/wp-content/uploads/2024/07/202407_Report_Protecting-Access-to-Essential-Utility-Service-in-the-Time-of-Extreme-Heat-and-Climate-Change.pdf.

[42] Qëndresa Krasniqi, Dr. Vivek Shastry, Alexandra Peek and Dr. Diana Hernández, *Utility Policies and Practices to Alleviate US Energy Insecurity*, Center on Global Energy Policy at Columbia, 3 (June 2024), *available at* https://www.energypolicy.columbia.edu/wp-content/uploads/2024/06/UtilitiesSecurityPolicies-Commentary_CGEP_062524-2.pdf.

does not preclude us from taking additional actions in dockets like UM 2211. In this docket, PGE is asking for additional rate increases on customers' bills in January 2025 and June 2025. Approving these rate increases without addressing customers' concerns about affordability fails to center the impact on customers with PGE's request. PGE should acknowledge and immediately respond to the thousands of customer comments calling for the PUC to disapprove PGE's request for a rate increase.

III. PROCEDURAL JUSTICE

Q. What is procedural justice?

A. Procedural justice in an element of environmental justice. Environmental justice refers to the fair treatment and meaningful involvement of all people regardless of race, color, gender, ability, national origin, religion, or income, so that people are fully protected from disproportionate and adverse human health and environmental effects and hazards, and have equitable access to healthy, sustainable, and safe environments where they live, work, play and pray.[43] In order to ensure meaningful change, environmental justice necessitates providing impacted communities not just the formal right, but the substantive ability to participate as partners at every level of environmental decision-making, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Community members who have been historically marginalized, have also been

[43] *Environmental Justice*, United States Environmental Protection Agency (EPA), *available at* https://www.epa.gov/environmentaljustice.

excluded from exerting meaningful influence on the decision-making process, adversely impacting effective participation from these communities.[44] Essentially, procedural justice is "the right to be treated as an equal."[45] Therefore, procedural justice is not a checked box and requires meeting people where they are, especially those who are most impacted by a decision.

Q. Can CUB outline PGE's sentiments and actions around procedural justice in the current rate case?

A. Yes. PGE indicated in its Reply Testimony it agrees with Staff "that more consideration and engagement with the energy justice communities during regulatory proceedings is important."[46] The Company goes onto state that "PGE has worked and will continue to work to share information that is relevant on the issues and processes to help them navigate decisions on where and how to engage as well as issues that most impact their communities."[47]

PGE notes that one example of how it can continue to incorporate procedural equity before and during the rate case process is to "continue walk-throughs with community partners, like meetings with the CBIAG after filing our rate case."[48]

The Company states that in addition to meeting with CBIAG after filing the current case, it also met with Community Action Partnership of Oregon (CAPO) and Community Energy Project (CEP) and that at these meetings the Company

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[44] *See* Jonathan Skinner-Thompson, *Procedural Environmental Justice*, Washington Law Review, 402 (June 1, 2022), *available at* https://digitalcommons.law.uw.edu/cgi/viewcontent.cgi?article=5215&context=wlr; *see also* Robert R. Kuehn, *A Taxonomy of Environmental Justice,* 30 ENV'T L. REP. 10681, 10681-10688 *(2000).*
[45] *A Taxonomy of Environmental Justice,* at 10688.
[46] PGE/1200/Sheeran - Wise/32.
[47] *Id.*
[48] *Id.* at 33.

"explained the rate case request, where to find types of information within testimony and discussed opportunities for participation such as key deadlines in the docket such as the public comment hearing, how to intervene, how to request intervenor funding and the Commission-established procedural schedule for the case."[49]

Q. Can CUB explain its concerns about the procedural justice implications of energy burden related issues being discussed in the current case?

A. Yes. In CUB's opening testimony, we argued that PGE should be instituting equity impact analyses as it relates to affordability and equity in the current case (and future rate cases and other related proceedings). Similarly, Staff recommended PGE explain "how environmental justice input was solicited and applied in specific decisions relative to its UE 435 proposal."[50]

We note our earlier recommendation here as well because we also believe that such a process would greatly assist with procedural justice efforts, particularly because it could potentially help non-traditional stakeholders better understand proposals and their implications. For example, it could assist PGE in its CBIAG engagement to meet members where they are at surrounding the Company's proposed rate increase—giving them a clear onramp for engagement and feedback surrounding their own concerns and expertise.

CUB understands that contested cases are not the most procedurally equitable or accessible spaces to make determinations related to energy burden. However, we also understand that settling a rate case with no space to implement any buffers, nor

[49] UE 435 – PGE/1200/Sheeran - Wise/33.
[50] UE 435 – Staff/200/Scala/10.

any time constrained commitments from an IOU for customers related to energy burden, is perhaps dangerous and antithetical to our role as a residential consumer advocate. As CUB explained in our UE 433 opening testimony:

> Overall, CUB supports efforts to ensure that contested cases which are generally 'gatekept' by various traditional actors—from economists to attorneys, are open to stakeholders who have been traditionally excluded from such proceedings, such as Environmental Justice community representatives. CUB continues to support the justice funding that came out of HB 2475 as well as Staff's ongoing efforts to create pathways to authentic engagement in contested cases. Until the day when these barriers are fully deconstructed and more equitable structures are in place that recognize the expertise of non-traditional utility stakeholders, CUB will continue to be strategic in our considerations of the most effective ways to advocate for customer affordability within the current structures.[51]

Q. What are CUB's procedural concerns with PGE's intention to address energy burden related issues outside of the current case?

A. CUB is concerned about the breadth and depth of PGE's current procedural justice strategies, and therefore what it means for the Company to address energy burden issues related to the current case, in venues outside of the current case. This includes the fact that PGE has also recently cancelled its IQBD Program Update Meetings,[52] and that its rate case overview with CBIAG was potentially not procedurally just.[53] Thus, not only are there concerns about the procedural implications of the Company's plans in this regard, but there remains the issue that

[51] UE 433 - *In the Matter of PacifiCorp dba Pacific Power, Request for a General Rate Revision,* CUB Opening Testimony, CUB/200/Wochele-Jenks/25 (June 28, 2024).
[52] CUB/603 – PGE Response to CUB DR 128.
[53] April 2024 PGE CBIAG Meeting Slides, 13, *available at*: https://assets.ctfassets.net/416ywc1laqmd/4sRUY2en2n2q90DS8sFoY/5533f13dc7a245ae1ddff3b67b550b18/CBIAG_240424.pdf.

we cannot simply extract energy burden issues from PGE's request to increase rates.

CUB appreciates that PGE has considered procedural justice, stating its intentions and efforts to "maximize focus and opportunities for engagement by energy justice communities" through addressing energy burden in a separate, non-contested docket.[54] But it still remains true that energy burden and rate shock issues are inherently tied to PGE's current request to increase customer rates. Removing them entirely from rate increase discussions materially serves to ignore their implicit tie to the rate increase request itself. Thus, CUB is concerned with the potential harmful impact of these procedural plans from PGE for residential customers.

This concern is rooted in the fact that investor-owned utility requests for rate increases are implicitly tied to costs and affordability for customers. By ignoring energy burden here, there is no guarantee that energy burden and rate shock issues (including which energy burden issues) would be addressed in this case, nor addressed elsewhere *and* in time to be implemented with the rate effective date.

Further, while non-contested venues on the surface may be more open and generally accessible (i.e., legal counsel is not required, protective orders do not need signed), procedural justice within them is not a by-default guarantee. Therefore, as we outline in the forthcoming text, CUB feels that providing third-party neutral technical support in technical spaces is still a missing piece for PGE's efforts in procedural justice, particularly the CBIAG.

[54] UE 435 – PGE/100/Pope - Sims/25.

This issue of "intention versus impact" as it relates to both energy burden and procedural justice in the current case, points to a much larger structural issue that the traditional ratemaking process does not consider. In the interim it is up to intervenors to navigate this constructively on a case-by-case basis, but it ultimately demands larger Commission attention and action. CUB is committed to collaborating with stakeholders to navigate this going forward, in order to ensure both energy burden and procedural justice are appropriately addressed.

Q. Can CUB further explain its procedural justice concerns related to PGE's CBIAG and the content of the current rate case?

A. While CUB surely appreciates PGE's efforts to inform its CBIAG of the current rate case in the group's April 2024 meeting, CUB is concerned about the technical content of that overview as it relates to procedural justice. Relatedly, some CBIAG members themselves disclosed via PGE CBIAG Self-Assessments that they did not feel confident about their knowledge of how electric utilities operate and serve customers.[55] In addition, in PGE's 12-month comment summary in the July 2024 CBIAG meeting, it noted "Participation Challenges: Some members feel lost or disconnected and need more time to process information to participate fully."[56]

This summary also noted "Perception of Group Effectiveness: A member raised uncertainty about seeing the group's impact and effectiveness in influencing outcomes."[57] This connects back to PGE's April 2024 meeting slides which

[55] July 2024 PGE CBIAG Meeting Slides at 11.
[56] *Id.* at 12
[57] *Id.*

indicated a learning from its "CBIAG Year in Review" was related to CBIAG members desiring a feedback loop between PGE and CBIAG members to "better understand the flow of information (between CBIAG and PGE) and how their input is being considered and/or incorporated by PGE."[58] Immediately following this April 2024 overview, PGE jumped into what appears to be a very technical overview of its current rate case, and it is unclear how PGE, if at all, garnered feedback from CBIAG on the rate case.

A review of the slides from that April 2024 meeting[59] suggests that the Company may have provided the CBIAG with an influx of information that failed to adequately highlight aspects of the case that might be relevant to the CBIAG, such as PGE's proposal to raise the basic charge. While the Company outlined the rate case timeline, a review of slides from May-July 2024 suggest it never went back to the CBIAG to inform them of intervenor proposals, despite there being many proposals which were relevant to the function of the CBIAG—which is stated to cover "energy burden and disconnections for residential and small commercial customers", amongst other items.[60]

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[58] April 2024 PGE CBIAG Meeting Slides at 13.
[59] *Id.* at 14.
[60] Portland General Electric, *Community Benefits and Impacts Advisory Group, available at* https://portlandgeneral.com/about/who-we-are/community/community-benefits-and-impacts-advisory-group.

Q. Did PGE review its most recent Energy Burden Assessment (EBA) with CBIAG? If so, does this review alleviate any of CUB's concerns related to the rate case overview with CBIAG?

A. CUB appreciates that PGE did take time to review its EBA with CBIAG in its June 2024 meeting,[61] especially as the group has indicated it is interested in IQBD topics.[62]

We understand that because PGE seeks to file an IQBD update in September 2024, the Company may not have viewed energy burden issues in the rate case as important to discuss with CBIAG, since it may have seen them as "living" in this forthcoming advice filing. However, CUB would reiterate that not only do we disagree with this assessment, as energy burden related issues cannot actually be extracted from a proposal to increase rates, but we are additionally concerned from a procedural justice standpoint, about the way in which PGE appears to have given a technical overview of its current case to CBIAG.

Q. Does CUB have procedural recommendations related to making future engagement for CBIAG and other PGE community conversations more just and equitable?

A. Yes. A technical overview without the proper support limits members' ability to fully and effectively understand in order to provide meaningful feedback. For example, in technical spaces it can be hard to even know what questions to ask because you fundamentally "don't know what you don't know." CUB recommends

[61] June 2024 PGE CBIAG Meeting Slides, 9, *available at* https://assets.ctfassets.net/416ywc1laqmd/4Ms356EbuiT7JsbWdAutBJ/c7b6f5ffeadafd9c33fe0ea8ed60f681/CBIAG_240626_Presentation_Deck.pdf.
[62] CUB/603.

PGE implement neutral, third party, technical support related to rate case "walk-throughs" and any other reviews of similarly technical Dockets. This support should be implemented and prioritized going forward in PGE's engagement and procedural equity efforts, including and especially for CBIAG—who as a group have noted they are interested in the IQBD and disconnections.[63]

CUB believes we already have examples of how this can begin to be helpful to stakeholders, while acknowledging it is not a perfect remedy to procedural inequities that take place in technical spaces. In Staff's experimental Environmental Justice Workshops that occurred iteratively for three of the four current rate cases (there was not such a workshop for the current case)[64], Staff sought to provide what could be described as "technical support" for non-intervenors (and participating intervenors) to better understand the context of the rate cases. This included Staff petitioning questions from interested stakeholders ahead of time, which helped to inform the workshop agenda, and therefore the rate case overview. Further, Staff carved out space in these three-hour workshops to give an overview of the case, *which included overviews of all party positions*. In the most recent workshop for PacifiCorp, Staff built in time for participants to ask any questions that might help them better understand the case, following the initial case overview, prior to the Company responding to more specific case related questions.

[63] *Id.*
[64] Regrettably, stakeholders lacked additional resources and capacity to also engage in a PGE Environmental Justice Workshop.

Technical support can help with engagement surrounding highly technical cases and their related decisions.[65] This technical support can be viewed as a tool for non-traditional stakeholders to bolster their own specific expertise and advocacy, which includes lived experience. CUB worries that anything short of this, risks wasting stakeholder time, and instead serves as a checked box for PGE (and any IOU for that matter).

IV. CUB'S RECOMENDATIONS

Q. Is there anything from your opening testimony that PGE did not address in its Reply?

A. Yes.

1. The Company did not address CUB's recommendation to extend the bill due date from 20 days to 30 days.[66]

2. PGE did not address CUB's recommendation to eliminate late fees for *all* residential customers.[67]

3. The Company ignored CUB's and other stakeholders' call for argued for urgent action to address energy burden either in the current case, or prior to the rate effective date.[68]

Q. Can you summarize your recommendations?

A. Yes. PGE should:

- Change the bill due date from 20 days to 30 days to give customers more time, and thus more pay periods, to pay their bills on time and in full;

[65] Jonathan Skinner-Thompson, *Procedural Environmental Justice* at 7.
[66] UE 435 CUB/300 Wochele-Jenks/33.
[67] *Id.* at 34.
[68] *Id.* at 19; *See also:* UE 435- Verde/100/Segovia-Rodriguez/2; UE 435 - Staff/200/Scala/7.

- Remove late fees for all PGE customers, not just IQBD customers, at least until a more robust plan and program is put into place to address arrears and disconnections;
- Extend Time Payment Arrangements (TPAs) from 12 months to 24 months for all customers, at least until a more robust plan and program is put into place to address arrears and disconnections;
- Commit to implementing an arrearage management and/or forgiveness program with stakeholders prior to the rate effective date in this case;
- Commit to collaborating with stakeholders to increase bill discount tiers in line and prior to the final rate increase and rate effective date;
- Commit to work with stakeholders to implement some level of assistance for residential customers with incomes in the 61-100% SMI range, prior to the rate effective date in this case;
- Implement neutral (i.e., third-party) technical support related to rate case "walk-throughs" and other quasi-technical stakeholder engagement, in order to appropriately bolster PGE's procedural equity efforts, prioritizing this for CBIAG most immediately;
- Add IQBD re-enrollment data and PEV data to existing RE 195 reporting, as discussed above;[69]
- File to-date re-enrollment and PEV data with its upcoming IQBD/EBA update filing; and
- Complete an intentional data sharing walkthrough with both its IQBD Program Update Group and its CBIAG, informed both by stakeholder questions and CUB DR 131 and 133, and OPUC DR 665. This walkthrough should include accessible data visualization for participants, with timing in line with the IQBD/EBA update.

[69] *See above* CUB/600/Wochele – Jenks/13–14.

Q. Does this conclude your testimony?

A. Yes.

August 30, 2024

To: Ryan Tran
Oregon Citizens' Utility Board

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to CUB Data Request 126
Dated August 23, 2024

Request:

Per PGE's most recent RO 12 Disconnection Reporting, filed on 8/20/2024 for May, June and July 2024, there is an uptick in IQBD/low-income customer households who PGE disconnected for nonpayment.

a) How many of these disconnected IQBD/low-income flagged households were also households who were flagged for either Post Enrollment Verification (PEV) or Re- Enrollment beginning in April and May, respectively. Please include any IQBD customers in a single household who were flagged for both PEV and re-enrollment.
b) How many of these households were re-enrolled following disconnection? And how long after their removal from the program were they re-enrolled?
c) Please share each of these customers on a timeline that showcases when they received their various PEV Notices, when they were removed from IQBD, when they were disconnected, when they were reconnected, and if they were re-enrolled into the IQBD program.
d) Please share each of these customers on a timeline that showcases when they received their various Re-Enrollment Notices, when they were removed from IQBD, when they were disconnected, when they were reconnected, and if they were re-enrolled.
e) Where applicable, please also include each customer's arrearage balance and which tier of IQBD the customer was enrolled in prior to the customer's removal from IQBD and which IQBD tier the customer was re-enrolled in, if they were re-enrolled.

Response:

PGE objects that this request concerns a separate proceeding and does not purport to relate to this general rate case and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding. To the extent that CUB has questions concerning Docket RO 12, PGE continues to support engagement through the ongoing dialogue and workshops connected with that proceeding. Without waiving this objection, PGE responds as follows:

PGE offers two clarifications to CUB's statement. First, RO 12 data does not report disconnections for IQBD households. Second, PGE has become aware of a data reporting error affecting data on energy assistance recipients reported in PGE's previous three quarterly RO 12 filing (affecting RO 12 'D' and 'F' values). PGE is working to file corrected reports. However, the immediate implication pertinent to this request is that to the extent there has been an uptick in low income disconnects (specifically energy assistance recipients), that has been a longer-term trend consistent with overall disconnection levels, that peaked in May 2024 before trending downward.

a) PGE does not report on disconnection rates for IQBD participants or other low-income indicators aside from energy assistance recipients. The table below refers to the energy assistance recipients reported as data point 'D' in RO 12.

	202405	**202406**	**202407**	**Total**
a. Number of service disconnections for non-payment on energy assistance recipient accounts (RO 12 Reported Data Point "D")	531	409	390	1,330
b. Accounts that are IQBD participants (subset of 'a')	505	386	368	1,259
c. Accounts that were selected for 2024 IQBD post-enrollment verification (subset of 'a')	0	0	0	0
d. Accounts that were flagged for IQBD Expiration/Re-enrollment beginning in April and May 2024 (subset of 'a') recipient accounts	197	145	144	486

b) PGE does not remove a customer from the IQBD program if disconnected. If disconnected, the customer's discount will resume once reconnected.

c) None of the disconnected energy assistance recipient accounts listed in part (a) were selected for PEV.

d) PGE objects to this request on the basis that it is unduly burdensome and requires significant new work and on the basis that the information it seeks is not relevant or reasonably calculated to lead to the discovery of admissible evidence in the current proceeding. Timing of reenrollment notices is described in PGE's response to CUB Data Request 130. Per PGE's response to part (b), disconnected customers are not removed from IQBD.

e) PGE objects to this request on the basis that it is unduly burdensome and requires significant new work and on the basis that the information it seeks is not relevant or reasonably calculated to lead to the discovery of admissible evidence in the current proceeding. Per PGE's response to part (b), disconnected customers are not removed from IQBD.

August 30, 2024

To: Ryan Tran
Oregon Citizens' Utility Board

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to CUB Data Request 127
Dated August 23, 2024

Request:

Per PGE's most recent RO 12 Disconnection Reporting, filed on 8/20/2024 for May, June and July 2024, there is an uptick in medical certificate holding customer households who were disconnected by PGE for nonpayment.

a) Please provide any context that could explain this uptick.
b) Please provide the number of PGE customers who obtained medical certificates each month, for 2023 and to date for 2024. Please also note how many of these customers are also IQBD customers.

Response:

PGE objects that this request concerns a separate proceeding and does not purport to relate to this general rate case, and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding. To the extent that CUB has questions concerning Docket RO 12, PGE continues to support engagement through the ongoing dialogue and workshops connected with that proceeding. Without waiving this objection, PGE responds as follows:

a) PGE conducts a review of each medical certificate prior to disconnection, which includes providing notice to OPUC per OAR 860-020-0410(6). These steps extend the disconnection process for medical certificate accounts, resulting in a tendency for medical certificate disconnection trends to lag the broader residential disconnection trend. Disconnection data reported in RO 12 filings shows that residential disconnections rose over the period of December 2023 to March 2024 before peaking in April. By comparison, medical certificate disconnections did not begin rising until February 2024 before peaking in June. PGE is not aware of additional context to explain May, June, July 2024 medical certificate disconnection trends.

b) Attachment 055-A to CUB DR 055 provides data on the number of medical certificate accounts enrolled in IQBD, by month. Attachment 127-A provides the additional data on the total number of medical certificate accounts by month.

Month	IQBD+Med Cert Accounts	Med Cert Accounts
202301	1484	1681
202302	1561	1996
202303	1580	1957
202304	1589	1934
202305	1598	*
202306	1579	2038
202307	1541	2130
202308	1561	2112
202309	1643	1973
202310	1676	2041
202311	1448	2043
202312	1469	2217
202401	1557	2147
202402	1796	2301
202403	1838	2450
202404	1952	2502
202405	2022	2619

* Data not available due to delay of transition of report to new system

August 30, 2024

To: Ryan Tran
Oregon Citizens' Utility Board

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to CUB Data Request 128
Dated August 23, 2024

Request:

Related to PGE's IQBD Program Update meetings for stakeholders: can PGE outline in narrative form its experience navigating and facilitating the IQBD Program Update meetings for stakeholders to date, including:

a) a history of the implementation of this stakeholder space;
b) significant dates and changes to the stakeholder space to date (including how these changes were decided and why);
c) how this space has informed any changes to the IQBD Program to date; and
d) if this stakeholder space overlaps in any way with PGE's CBIAG group, in terms of PGE's internal processes and considerations around stakeholder engagement.

Response:

PGE objects that this request concerns a separate proceeding and does not purport to relate to this general rate case, and is not reasonably calculated to lead to the discovery of admissible evidence in this proceeding. To the extent that CUB has questions concerning Docket RO 12, PGE continues to support engagement through the ongoing dialogue and workshops connected with that proceeding. Without waiving this objection, PGE responds as follows:

a. PGE began facilitating regular virtual meetings with stakeholders, focused on IQBD program design, program updates and outreach efforts in November 2021. Those meetings were held regularly through June 2023 (April and June 2023 updates were via email). In addition, this space has been used for socialization of PGE's Energy Burden Assessment in 2024.

b. There was a hiatus of these meetings from July 2023 through January 2024 because of PGE's 2024 GRC, wherein IQBD discussions were taking place. PGE began facilitating these meetings or email updates again February through July 2024. At the beginning of August, PGE canceled these meetings for the remainder of 2024. PGE's change was informed by stakeholder feedback that the large group format hasn't been as valuable as a more fluid approach allowing co-development of agendas and increased relevancy.

c. Participants in the IQBD Program Update meeting series provided feedback that helped inform program design prior to launch in April 2022 as well as ongoing program updates. In addition, this space has been used to review potential outreach efforts and opportunities for collaboration.

d. The IQBD Program Update series has been fully separate from the CBIAG, which was established after the initiation of the IQBD series. However, the CBIAG has expressed an interested in IQBD topics, and PGE has provided updates on the IQBD program, outreach efforts, and Energy Burden Assessment results and recommendations to the CBIAG.

August 30, 2024

To: Ryan Tran
Oregon Citizens' Utility Board

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to CUB Data Request 131
Dated August 23, 2024

Request:

Related to the re-enrollment process, please give the following data requests in totals and percentages, by month and to-date.

a) How many customers were flagged for re-enrollment each month since re- enrollment efforts began?
b) How many customers each month responded to re-enrollment within the allotted time frame? And how many customers re-enrolled after the allotted time frame?
c) How many of these customers were found to have inactive service?
d) How many of these customers were over-income and thus unenrolled?
e) For customers who were over-income, how much over income was each customer?
    1. Please include a range, a median, and an average;
    2. Note which of these customers were in the 61-100% of SMI range.
f) How many customers did not provide a response and were thus unenrolled?
    1. Please categorize these customers by the tier they were enrolled in prior to being unenrolled.
    2. Please also specify how many unenrolled customers also had a medical certificate.
g) For customers who were unenrolled due to non-response, what were each customer's individual arrearage balances, before and after re-enrollment?
h) How many more customers does PGE forecast will go through the re-enrollment process this year?

Response:

a. Re-enrollment efforts began in April 2024. The following table identifies the number of customers who received communication regarding recertification between April 2024 and July 2024.

Month	Customer Count
April	1,651
May	5,828
June	3,298
July	4,311
Total	**15,088**

b. PGE is unable to distinguish between those who recertified prior to their expiration and those who re-enrolled shortly after their expiration date.

c. This information is provided in PGE's response to OPUC Data Request No. 663

d. This information is provided in PGE's response to OPUC Data Request No. 663

e.1. The following table provides data on customers who were over-income. In addition to the customers included in the table, 15 customers notified PGE they were over income, but did not provide updated income and household size.

Household Size	Number of Customers	Range	Median	Average
1	90	$33,467- $137,380	$39,000	$43,103
2	71	$44,000- $156,000	$49,280	$53,914
3	36	$54,080- $96,000	$60,000	$63,357
4	25	$64,300- $126,000	$70,000	$77,178
5	12	$75,000- $110,000	$89,960	$91,396
6	4	$90,000- $97,000	$95,000	$93,500
7	1	$88,000	$88,000	$88,000
8	1	$96,907	$96,907	$96,907

e.2 The following table lists the number of customers in the 61-100% SMI range.

Household Size	Number of Customers 61%-100% SMI
1	84
2	66
3	35
4	23
5	12
6	4
7	1
8	1

f.1. There were 3,864 accounts unenrolled from the IQBD between January 1 and July 31, 2024. While the majority of these customers were removed as part of the re-enrollment process (due to ineligibility or non-renewal), about 400 were unenrolled by customer request outside of the re-

enrollment process. All unenrolled customers are broken out by their most recent tier in the following table.

IQBD Tier	**Number of Accounts**
15PCT	846
20PCT	1,100
25PCT	1,118
40PCT	338
60PCT	462
Total	**3,864**

f.2. Of the 3,207 customers removed from the program between April 18, 2024 and July 31, 2024 for non-response, 24 are enrolled in the Medical Certificate Program.

g. PGE objects to this request on the basis that it is unduly burdensome and requires significant new work and on the basis that the information it seeks is not relevant or reasonably calculated to lead to the discovery of admissible evidence in the current proceeding.

h. As of July 31, 2024 PGE identified 11,039 customers that will need to recertify or re-enroll before the end of the year.

CUB/605 Wochele-Jenks

Exhibit CUB/605 Wochele-Jenks contains yellow highlighting on pages 3 and 5 that is original to the data response from PGE. The yellow highlighting is not indicative of confidential material.

August 30, 2024

To: Ryan Tran
Oregon Citizens' Utility Board

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to CUB Data Request 132
Dated August 23, 2024

Request:

Please outline the timeline of PGE's Post-Enrollment Verification (PEV) process, which began in May 2024. Please include:

a) When and how customers were alerted;
b) How much time customers had to respond to the verification prompts from PGE;
c) How many alerts customers received and at what points in time;
d) Examples of customer communications;
e) Example of what forms a customer had to fill out and provide to prove income;
f) How and when does PGE plan to assess the impacts and effectiveness of this process;
g) What is the goal of this process and what are the benefits to IQBD customers and the residential class as a whole?

Response:

a. Customers were notified three times, via various touch points such as letter or email and phone call, as further discussed in part (c) below.

b. Customers were given ninety days to respond.

c. PGE sent an initial letter or email to the selected IQBD participants on May 24, 2024, asking them to provide Oregon Energy Fund income verification documentation within thirty days. PGE sent a second letter or email on July 18, 2024, asking those who had not already responded to provide Oregon Energy Fund income documentation within seven days. Throughout the month of August 2024, Oregon Energy Fund made follow-up phone calls to those who had not already responded to PGE's two communications.

d. A template for the initial letter is provided in Attachments 132-A. Templates for the second email and letter are provided in Attachment 132-B and 132-C respectively.

e. A sample customer verification form is provided in Attachment 132-D.

f. PGE's first Post-Enrollment Verification cycle is currently in progress. Results will not be available until process completion, which is expected in September 2024. PGE intends to review findings, assess program effectiveness and consider potential next steps then.

g. PEV is an important tool to maintain the integrity of the program by employing some verification of need and eligibility among participating customers, and it has been an element of the program design since the inception of the program. This program is funded by all PGE customers, and PGE has a responsibility to review its effectiveness.

[Date]

[Postal sequence ID – Line 1]
[Postal barcode – Line 2]
[Customer name – Line 3]
[Co-customer name – Line 4]
[Address line 1 – Line 5]
[Address line 2 – Line 6]
[City, state zip – Line 7]

Account number: [Account number]

Income Verification Required

Hi [Customer's first name],

Your household has been selected for eligibility verification as part of PGE's Income-Qualified Bill Discount program in which you are currently enrolled. To continue participation in this program, you are required to verify your income. **Please complete the enclosed Income Qualified Bill Discount Program Eligibility Verification Form and provide income documentation within 30 days of the date of this letter**.

When completing the enclosed Income Qualified Bill Discount Program Eligibility Verification Form, be sure to list each person in your household and provide supporting income documentation for those 18 years and over (examples listed on enclosed form).

Please send the completed form and income documentation via one of the following options:

- **Mail:** Oregon Energy Fund, 1020 SW Taylor Street, Suite 620, Portland, OR 97205 by
- **Email:** to PIP@oregonenergyfund.org
- **Phone/video chat:** 971-386-2124.

If you have any questions or concerns, please contact The Oregon Energy Fund at 971-386-2124. The Oregon Energy Fund (OEF) will be conducting income verification on behalf of PGE. OEF is a 34-year-old nonprofit that provides energy bill assistance to low-income Oregonians in support of household stability. You can learn more at www.oregonenergyfund.org.

Thank you for being part of the program and we look forward to hearing from you soon.

Sincerely,

Your PGE Customer Service team

Sign in to your account

Hi neighbor!

We wanted to remind you that your household has been selected for eligibility verification as part of PGE's Income-Qualified Bill Discount program in which you are currently enrolled. To continue participation in this program, you are required to verify your income. **Please complete the Income-Qualified Bill Discount Program Eligibility Verification Form (linked here) and provide income documentation by July 25, 2024.**

When completing the Income-Qualified Bill Discount Program Eligibility Verification Form, be sure to list each person in your household of all ages and provide supporting income documentation for everyone 18 years and over (examples listed on form).

Please send the completed form and income documentation via one of the following options:

Mail: Oregon Energy Fund, 1020 SW Taylor Street, Suite 620, Portland, OR 97205
Email: to **PIP@oregonenergyfund.org**
Phone/video chat: 971-386-2124

If you have any questions or concerns, please contact The Oregon Energy Fund at **971-386-2124.** The Oregon Energy Fund (OEF) will be conducting income verification on behalf of PGE. OEF is a 34-year-old nonprofit that provides energy bill assistance to low-income Oregonians in support of household stability. You can learn more at **www.oregonenergyfund.org**

Thank you for being part of the program. We look forward to hearing from you soon.

Sincerely,

Your PGE Customer Service team

[Date]

[Customer name]
[Address]
[City, State, Zip]

Income Verification Required – Second Notice – response due by July 25

Hi [Customer's first name],

Your household has been selected for eligibility verification as part of PGE's Income-Qualified Bill Discount program in which you are currently enrolled. To continue participation in this program, you are required to verify your income. **Please complete the Income Qualified Bill Discount Program Eligibility Verification Form (on the back of this letter) and provide income documentation by July 25, 2024.**

When completing the Income-Qualified Bill Discount Program Eligibility Verification Form, be sure to list each person in your household of all ages and provide supporting income documentation for everyone 18 years and over (examples listed on form).

Please send the completed form and income documentation via one of the following options:

- **Mail:** Oregon Energy Fund, 1020 SW Taylor Street, Suite 620, Portland, OR 97205
- **Email:** to PIP@oregonenergyfund.org
- **Phone/video chat:** 971-386-2124

If you have any questions or concerns, please contact The Oregon Energy Fund at 971-386-2124. The Oregon Energy Fund (OEF) will be conducting income verification on behalf of PGE. OEF is a 34-year-old nonprofit that provides energy bill assistance to low-income Oregonians in support of household stability. You can learn more at www.oregonenergyfund.org.

Thank you for being part of the program and we look forward to hearing from you soon.

Sincerely,

Your PGE Customer Service team

Income Qualified Bill Discount Program Eligibility Verification Form

Please include every member of your household's income amount (before taxes) and source, and provide documentation for each, for the last 30 days.

Name	Relationship	Age (all ages)	Income Amount and Source
	Self		

Number of people living in household _____

Total Income $ _____

The definition of "gross (before taxes) household income" is all money and noncash benefits, available for living expenses, from all sources, both taxable and nontaxable, before deductions, for all people who live in the home.

Examples of income documentation includes, but is not limited to the following:

- Paycheck stubs
- Unemployment verification letter, Social Security benefit award letter, TANF print out, Child Support print out, Proof of Veterans benefits, pensions, retirement, etc.
- Written statement of Self-Employment detailing gross receipts and business expenses
- Written statement with details of any additional cash income
- If you have no income, please provide a written statement of how you sustain yourself financially, covering essentials like food and housing.

Declaration: I agree to inform PGE if my household no longer qualifies for the Income-Qualified Bill Discount.

I understand under penalty of perjury under the laws of the State of Oregon that the information I provided in this application is true and correct.

Signature: _____ Date: _____

Phone: ( )_____ Email: _____

August 30, 2024

To: Ryan Tran
Oregon Citizens' Utility Board

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to CUB Data Request 133
Dated August 23, 2024

Request:

Related to the Post-Enrollment Verification (PEV) process, please give the following data requests in totals and percentages, by month and to-date.

a) How many customers were flagged for PEV each month since PEV began?
b) How many customers each month responded to PEV within the allotted time frame? And how many customers re-enrolled after the allotted time frame?
c) How many of these customers were found to have inactive service?
d) How many of these customers were over-income and thus unenrolled?
e) For customers who were over-income, how much over income was each customer?
    1. Please include a range, a median, and an average;
    2. Note which of these customers were in the 61-100% of SMI range.
f) How many customers did not provide a response and were thus unenrolled?
    1. Please categorize these customers by the tier they were enrolled in prior to being unenrolled;
    2. Please also specify how many unenrolled customers also had a medical certificate
g) How many unenrolled customers received LIHEAP or OEAP in the last 12 or 24 months?
    1. How many unenrolled customers initially were auto-enrolled in IQBD because of their LIHEAP or OEAP status?
h) For customers who were unenrolled due to non-response, what were their individual arrearage balances, before and after re-enrollment?
i) How many more customers will go through the PEV process this year?

Response:

a. PGE conducts PEV on an annual cycle. For the first cycle, 809 customers were selected for PEV.

b-h. PGE's first Post-Enrollment Verification cycle is currently in progress. Results will not be available until process completion, which is expected in September 2024. Complete data on PEV results requested in 133(b)-133(h) will not be available until completion of the PEV process.

i. PGE is not currently planning to select additional customers for PEV this year.

August 16, 2024

To: Bryan Conway
Public Utility Commission of Oregon

From: Jaki Ferchland
Senior Manager, Revenue Requirement

Portland General Electric Company
UE 435
PGE Response to OPUC Data Request 665
Dated August 2, 2024

Request:

Please provide the number of customers that have a history of LIHEAP or OEAP in the last 24 months within the following groupings:

a. The 30,800 customers that were due for re-enrollment in 2024.

b. The 17,768 customers that responded as of July 18, 2024.

c. The 19 percent of the 17,768 customers (~3,376) that did not respond to communications and were unenrolled from IQBD.

d. The 13,302 participants that will go through the re-enrollment process before the end of year.

Response:

Please see PGE's response to OPUC Data Request No. 661 and 663, clarifying the customer counts by date measured. We understand that Staff is asking about total 2024 expirations. With this understanding, corrected numbers are also included in responses a.-d. below.

a. Among the approximate 35,000 IQBD customers with expiration dates in 2024, 13,159 have received energy assistance (LIHEAP/OEAP) in the past 12 months. PGE notifies customers of the need to re-enroll in IQBD 60 and 30 days prior to their expiration date. To date, customers with expiration dates further than 60 days in the future have not yet been notified of their need to re-enroll in the program.

b. Among the 10,843 customers who responded to re-enrollment notifications from PGE as of 7/31/2024 (and were still eligible and wanted to re-enroll), 4,226 have received energy assistance in the past 12 months.

c. Among the 3,207 customers who did not respond to re-enrollment notifications and were subsequently expired and removed from IQBD, 598 had received energy assistance in the past 12 months.

d. As of July 31st, PGE identified 11,039 customers that will need to recertify or re-enroll before the end of the year (a decrease from the roughly 18,700 IQBD participants with an expiration date between August and December that were identified in the February snapshot). Among the 11,039 set to expire, 3,273 have received energy assistance in the past 12 months.

Amp Up the People

A Practical Guide for Energy Justice Advocates in Utility Regulation

VOTE SOLAR | initiative for energy justice

Lead Authors

Marisa Sotolongo, PhD. — Initiative for Energy Justice
Farudh Emiel — Vote Solar
Greer Ryan — Vote Solar

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UC Berkeley Student Researchers

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Subin DeVar, Elena Itämeri, Kristen Kortick, Isaac Sevier, Kelly Sheehan, Maria Stamas

Guiding Resources

This guide was influenced by and builds upon the work of many other organizations in the field of energy justice and utility regulatory advocacy. In particular, the authors wish to highlight the following resources as sources of invaluable insights in the creation of this guide:

- Utilities 101: Guide, Video, and Slide Deck (2020), Initiative for Energy Justice
- Who Holds the Power: Demystifying and Democratizing Public Utilities Commissions (n.d.), The Chisholm Legacy Project
- The People's Utility Commons Curriculum (2023), The People's Utility Commons
- Utility Justice Playbook: History of Utilities and People's Utility Justice Playbook (n.d.), Energy Democracy Project
- Engaging With Public Utilities and Public Service Commissions Manual (n.d.), NAACP
- Electricity Regulation in the US: A Guide (2016, second edition), Regulatory Assistance Project
- Advancing Equity in Utility Regulation (2021) Energy Technologies Area, Berkeley Lab

Table of Contents

About Vote Solar

Vote Solar is a solar advocacy nonprofit with a mission to realize a 100% clean energy future through a solutions-driven, people-first approach. Founded in 2002, Vote Solar advances just and equitable clean energy policy in state legislatures and public commissions across the United States. Our expertise comes from a deep understanding of the legislative process, regulatory interventions, and the ability to identify and accelerate solar solutions. We are adept at bridging communities and bringing diverse stakeholders together to forge inclusive coalitions and winning campaigns.

About the Initiative for Energy Justice

IEJ conducts research, provides policy analysis, and facilitates dialogue to advance concrete policy pathways toward energy justice. We partner with frontline organizing groups and allies striving for universal access to affordable, renewable, and democratically managed energy.

About UC Berkeley Student Research Team

Paige Callaghan

Policy Research Intern
UC Berkeley

Paige is a MPH graduate from UC Berkeley, specializing in renewable energy research and advocacy for Community Choice Aggregation (CCA). A meticulous organizer and natural leader, she is passionate about sustainable energy, climate policy, and energy justice, particularly focusing on CCAs' role in equity and local decarbonization. Paige excels in public speaking and has a strong background in developing community wellness and environmental health initiatives. Fluent in French, English, and Spanish, she is eager to connect with others in the field and inspire change through innovative solutions.

Contact: LinkedIn

Hayley Lai

Policy Research Intern
UC Berkeley

Hayley Lai is a recent graduate from UC Berkeley, holding a major in Economics and Environmental Science with a minor in Public Policy. She is passionate about global development, environmental equity, and sustainable finance. Born and raised in Hong Kong, Hayley lived in Wales and Canada before coming to Berkeley. During her time at UC Berkeley, Hayley has conducted environmental policy research at Berkeley Law School, led diversity initiatives in her finance club, and been involved in the Energy and Environmental Economics research apprenticeship.

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Leslie Reider

Policy Research Intern
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Leslie Reider is a recent graduate from UC Berkeley, holding a major in Political Science and minors in Public Policy and Conservation and Resource Studies. Originally from Temecula, CA, Leslie is deeply committed to serving disadvantaged communities through diligent policy research and implementation. Outside of her professional interests, she enjoys hiking and attending concerts, embracing a well-rounded lifestyle. Fun fact: Leslie grew up in a lively household, at one point caring for 17 guinea pigs simultaneously!

Contact: Email

Youngbo Shim

Policy Research Intern
UC Berkeley

Youngbo Shim is a Sustainability Consultant at Arup in Los Angeles, with a Civil and Environmental Engineering degree from UC Berkeley. Passionate about advancing sustainable practices, his focus areas include electrification, low-income housing retrofits, sustainable lithium extraction, zero-emission vehicles, and environmental justice. Youngbo also serves on the Palms Neighborhood Council's Sustainability Committee and the Los Angeles Neighborhood Council Sustainability Alliance's transportation committee. Fun fact: Youngbo once saw 200 penguins on a beach in New Zealand.

Contact: LinkedIn

Introduction

This joint guide was prepared by the Initiative for Energy Justice (IEJ) and Vote Solar, with significant contributions from dedicated UC Berkeley student researchers. This guide is designed as a tool to support individuals and organizations fighting for a more just and equitable clean energy system, with a focus on providing support for those on the frontlines of the climate and energy affordability crises. We hope that those reading this guide will gain an understanding of how energy utilities are regulated, why energy regulatory issues matter in their communities, and what can be done to create positive change.

Within this guide, you'll find:

Background on Utility Regulation
We break down the sometimes complicated world of energy regulation, so you can better navigate the utility regulatory system and advocate for your community.

Insights into Proceedings That Affect Energy Justice
Learn about some typical processes that happen at utility commissions and discover how they impact energy justice issues in your community.

Engagement Strategies
Get practical advice on how to make your voice heard in regulatory proceedings and make a real difference in shaping energy policies.

Recommendations to Address Inequities
Find actionable recommendations tailored to community organizations like yours, policymakers, and regulators to help create a fairer energy system for all.

Glossary of Terms
We've included a handy glossary to help you understand the sometimes confusing language around energy regulation and justice.

We want to thank the UC Berkeley student researchers whose hard work and dedication have helped make this guide possible. Their insights and contributions have enriched our understanding of these issues and strengthened our collective ability to advocate for change.

This guide draws on many existing resources focused on energy justice in the utility system, many of which can be found in the "Guiding Resources" section. Of particular importance is IEJ's *Utilities 101* report, released in 2020, which explains the electric utility landscape in the United States, the evolution of utilities and electrification, and the future of utilities.

Together, let's work towards a future where everyone has access to renewable, affordable, and democratically managed energy and where frontline communities are at the forefront of the energy justice movement.

Background on Utility Regulation

Energy utilities[1] make decisions that impact critical aspects of their customers' daily lives. Despite the integral role that utilities and their regulators play, it can be hard to understand how utilities function and how regulatory decisions are made. Increasing transparency in how utilities are governed and regulated can make it easier for organizations and advocates to promote justice and bring about change through existing regulatory processes. However, the technical complexity and bureaucracy of public participation processes can often limit the public's ability to engage in regulatory proceedings and hold utilities accountable.

Although public participation and intervention opportunities in regulatory proceedings exist, they are often difficult to access. Understanding these complex proceedings is the first step toward effective utility justice advocacy.

To promote energy justice and a sustainable, livable future, public engagement and advocacy efforts must also aim to create fundamental reform within these systems. These reforms require going beyond increasing participation in the existing utility regulatory system, to changing decision-making structures to advance energy justice.

Below, we share information on how utilities are regulated, primarily by state utility regulators but also at the regional and federal levels.

State utility regulators

When it comes to issues related to our energy transition, affordability, and utility customer protection, some of the most important decisions happen at state-level regulatory bodies called **Public Utility Commissions (PUCs)**. These are also sometimes called Public Service Commissions (PSCs) or other titles.[2] For this guide, we will refer to these state-level regulatory bodies as PUCs.

Utility regulation is crucial for investor-owned utilities (IOUs) that operate as monopolies. These utilities can wield significant market and political power, making regulation necessary to prevent unjust or unreasonable energy costs, poor service quality, and/or inadequate infrastructure investments, among other things. PUCs are responsible for ensuring that utilities operate in the public interest by balancing consumer needs with financial viability.

Ultimately, utility regulation is meant to safeguard against monopolistic abuses while fostering a fair, reliable, and sustainable utility sector.

PUCs also play a critical role in shaping policies related to clean energy progress, energy affordability, and environmental justice. PUC commissioners are typically appointed by state governors or are elected, and are responsible for regulating investor-owned utilities and overseeing various aspects of electricity, distribution, and pricing. Each state is a bit different, but in general, PUCs determine how much utilities can charge their customers for energy and other essential services, which in turn affects what kinds of energy resources utilities rely on and what types of programs they operate.

1 Energy utilities can include utilities that provide electric service, gas service, or both. They can vary in ownership and governance structure, from investor-owned utilities (IOUs) to city-run municipal utilities to cooperatives.

2 See https://app.insightengine.org/portal for a full list of state PUCs and their websites.

PUCs are critical players in deciding how, when, and if the clean energy transition will play out. This happens in a variety of ways, from implementing state renewable energy standards, to approving utility investments in grid infrastructure, to overseeing energy efficiency and affordability programs. Because utilities are publicly regulated, advocates and other interested third parties can **intervene** in these processes to, among other things, promote fair and equitable rates, particularly for low-income communities that are disproportionately burdened by energy costs. Within PUC **proceedings** or **dockets**,[3] advocates can work to advance ambitious clean energy targets, equitable distribution of renewable energy resources, and inclusive participation in clean energy programs.

In addition to these regulatory functions, PUCs often serve as forums for public engagement and participation. They hold hearings, accept public comments, and conduct stakeholder meetings. These public engagement forums can provide environmental and energy justice advocates with opportunities to voice their concerns, provide input on energy policies and decisions, and ultimately influence the outcomes of regulatory proceedings. Advocates can press for mechanisms that require PUCs to formally address and mitigate concerns or incorporate public feedback into their decisions to ensure that PUC public engagement processes are not conducted simply as box-ticking exercises. Advocates can also use proceedings to highlight environmental injustices, advancing programs that prioritize the well-being of frontline communities, and calling on regulators to consider environmental and social costs of energy infrastructure on environmental justice communities in their decisions.

PUCs are crucial spaces for energy justice and climate justice advocates to shape policies and decisions that have profound implications for equity, sustainability, and resilience in the energy sector.

By participating in regulatory processes, working for equitable outcomes, advocating for justice-oriented decision-making structures, and holding utilities accountable, advocates have the potential to play a vital role in advancing social and environmental justice goals within the energy system.

Regional market authorities

An **Independent System Operator (ISO)** and a **Regional Transmission Organization (RTO)** are entities in the United States that are responsible for managing the electric grid and ensuring reliable electricity delivery over large geographic areas. They play a critical role in utility regulation by overseeing the operation of the electrical transmission system and facilitating competitive **wholesale electricity markets**, where power generators sell electricity to intermediaries, such as utilities, which then distribute electricity to the end-users.

Unlike PUCs, ISOs operate across multiple states or regions, focusing on interstate grid reliability and market efficiency. While PUCs oversee utilities within their state, ISOs operate under the oversight of the **Federal Energy Regulatory Commission (FERC)** for interstate activities. Coordination between PUCs and ISOs can help to ensure a reliable, affordable, and well-regulated electricity supply for consumers across different states and regions.

Figure 1: ISO and RTOs in the United States. All ISOs and RTOs pictured are subject to regulation by FERC, excluding ERCOT in Texas.
Source: Sustainable FERC Project, https://sustainableferc.org/rto-backgrounders-2

3 Though often used interchangeably, a "proceeding" and a "docket" are related but distinct terms describing a formal process used by PUCs to review and make decisions on matters related to utilities. A proceeding is the overall process of hearings and decisions to resolve a case, whereas a docket is the official record of all documents and filings in a PUC case. Dockets are often given a specific number and online location (sometimes called an "e-docket").

Addressing Energy Justice Issues in Utility Regulation

Utility regulatory proceedings touch on a wide variety of topic areas relevant to energy justice. Advocates interested in energy affordability and burden for low-income households, energy efficiency and demand reduction programs, community ownership of and decision-making over energy infrastructure, advancing distributed renewable energy resources to build intergenerational wealth, environmental justice concerns about peaker power plants, indoor air pollution, the effects of extreme heat and cold on vulnerable populations, and fighting utility monopoly power and political influence may all find themselves involved in PUC proceedings. This section described common PUC proceeding topics and relevant barriers and opportunities for advancing energy justice.

Rate cases

A **rate case** is a process where utility regulators review and potentially adjust the rates charged to customers by utility companies. In short, rate cases are where utilities ask to raise customers' bills.

The process of a rate case can vary significantly depending on the state. These cases may occur on a standardized cycle in some states, while in others, they are triggered by events like rising utility costs or changes in state laws. Rate cases are often **contested**, meaning that advocates who want to participate in them require legal representation (discussed further in "Tips to engage in a formal or 'contested' proceeding" section).

In general, a rate case will begin with the utility submitting an application detailing its proposed rates to provide services to customers, including the **recovery** of costs and its expected profit margin.[4] This process is necessary because it determines how much customers will pay for essential services like electricity, water, and gas. The ultimate goal of these proceedings is to determine, among other things, whether the proposed rates are **just and reasonable**. Advocates play a crucial role in shaping the understanding of what constitutes just and reasonable rates – including whether systemic injustices within the energy system need to be addressed.

Rate case proceedings are critical opportunities for public engagement on issues related to the renewable energy transition, energy affordability, and overall utility accountability. These proceedings are arguably the most directly impactful for customers, especially low-income customers who tend to have higher **energy burdens**, or pay a higher percentage of their income in utility costs, compared to wealthier customers[5] (see Figure 2 below).

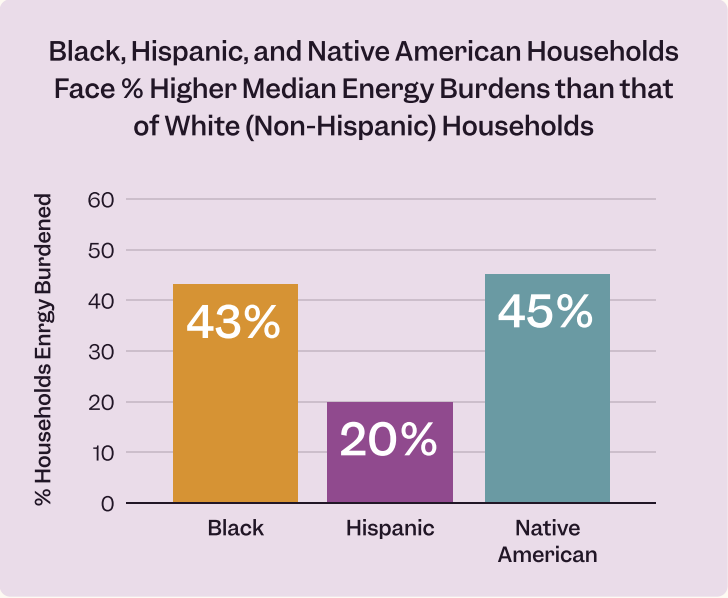

Figure 2: Low-income customers tend to have higher energy burdens, or pay a higher percentage of their income in utility costs, compared to wealthier customers.
Source: ACEEE's 2020 Energy Burden Report, https://www.aceee.org/energy-burden

4 In utility regulation, "recovery" is a term to describe utilities recouping expenses from their customers through energy bills.

5 Kimberly Clark, "Reducing Energy Burden: Resources for Low-Income Residents," Metropolitan Area Planning Council (blog), January 28, 2022, https://www.mapc.org/planning101/reducing-energy-burden-resources-for-low-income-residents/ Ariel Drehobl, Lauren Ross, and Roxana Ayala, "How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the United States" (American Council for an Energy-Efficient Economy, September 2020), https://www.aceee.org/energy-burden

CAPEX BIAS

Utilities have brought record numbers of rate case requests to state PUCs since 2020, totaling $18.1 billion in 2023 (the share of electric utility requests totaled $13.1 billion).[6] Some utilities argue that inflation, rising debt costs, and the need to upgrade aging infrastructure to advance clean energy technologies are the driving forces behind these requests to increase rates.[7] However, a major underlying reason behind rising utility rates is the outdated regulatory model incentivizing utilities to build more capital-intensive infrastructure projects.

This phenomenon, known as **capex bias** or capital expenditure bias, stems from the traditional rate-making approach where utilities earn a rate of return – which includes profit – on their **capital investments**. Essentially, the more utilities invest in building or upgrading power plants, transmission lines, and other infrastructure, the higher their shareholders' earnings. This bias incentivizes utilities to prioritize capital expenditures over what may be more cost-effective solutions like energy efficiency, demand response, and distributed energy resources like rooftop solar.

As a result, utilities propose unnecessary and often fossil fuel-based infrastructure projects, driving up costs that get passed along to customers through higher rates. This outdated system needs to be reformed to align utility incentives with affordable, clean energy goals and remove the bias towards excessive capital spending.[8]

ADVOCACY IN RATE CASES

For frontline and energy justice advocates, rate cases provide an opportunity to raise a variety of issues related to affordability, access, equity, and the renewable energy transition. Though we do not go into every issue that advocates can raise in rate cases, we have shared some key issues below.

Advocates can work to ensure that utilities don't pass on unnecessary or inappropriate costs to customers and that funding is directed to important actions like ❶ building out new renewable energy resources instead of building out or maintaining fossil fuel resources, ❷ providing low-income bill payment assistance, and ❸ increasing energy efficiency spending. Additionally, they can advocate for rate designs that support **distributed energy resources** (DER) like rooftop and community solar paired with storage, helping to address climate change, improve grid reliability, promote sustainability, and increase community ownership of energy resources.

One key issue in rate cases is a utility's **return on equity** (ROE).[9] High ROEs not only drive up utility bills in general, they can drive the capex bias described above, make the clean energy transition more expensive, and make utilities less competitive.[10] For advocates that care about an affordable clean energy transition, reducing the utilities' ROE can be a great issue to raise.

Other important issues to raise include whether or not various **infrastructure upgrades** are necessary to support a reliable system and a clean and equitable energy transition. In many cases, these upgrades might be necessary because existing grid infrastructure is aging and customers are experiencing dangerous outages. They can also be necessary to incorporate new renewable energy resources into the grid (either decentralized or centralized). However, some upgrades may be proposed under the guise of increasing clean energy generation or improving reliability, but in fact may be further cementing the use of fossil gas facilities and pipelines.[11] Engaging in rate case proceedings can illuminate which costs are necessary and useful and which may be contributing to fossil fuel lock-in.

6 Dan Lowrey, "Rate Requests by US Energy Utilities Set Record in 2023 for 3rd Straight Year," S&P Global: Market Intelligence (blog), February 7, 2024 https://www.spglobal.com/marketintelligence/en/news-insights/research/rate-requests-by-us-energy-utilities-set-record-in-2023-for-3rd-straight-year

7 ibid.

8 Kaja Rebane et al., "Making the Clean Energy Transition Affordable" (Rocky Mountain Institute, 2022), https://rmi.org/insight/making-the-clean-energy-transition-affordable/

9 In this context, equity is referring to financial equity (as opposed to debt). For the purposes of this discussion, equity can be thought of as the money that the utility gets from shareholders.

10 Ryan Foelske and Joe Daniel, "3 Reasons Why Climate Players Should Care About Utility Rate of Return," RMI (blog), April 22, 2024, https://rmi.org/3-reasons-why-climate-players-should-care-about-utility-rate-of-return/ Luke Ashton, "Understanding Rate Cases Using FERC Data," HData (blog), March 21, 2022, https://blog.hdata.us/understanding-rate-cases-using-ferc-data

11 Rosemary Misdary, "National Grid Customers in NY Would See $30 Higher Monthly Bills under Proposed Rate Hike," Gothamist, December 6, 2023, https://gothamist.com/news/national-grid-customers-in-ny-would-see-30-higher-monthly-bills-under-proposed-rate-hike

Rate cases also present an opportunity for advocates to scrutinize utilities' political activities and call on PUCs to prohibit utilities from charging customers for political actions. In many cases, utilities will charge expenses related to political trade groups, political contributions, or other activities aimed at influencing the political process. Advocates can argue that such expenses provide no direct benefit to ratepayers and should therefore be borne by shareholders rather than being recovered through customer rates. Advocates can also call for greater transparency around utilities' political spending and highlight potential conflicts of interest or undue influence. By intervening in rate cases, energy justice groups can push PUCs to hold utilities accountable and ensure that ratepayer funds are not misused for political purposes that may undermine the public interest. For further information on the rate design process and what is included, excluded, or passed off to customers, see the Regulatory Assistance Project's "Electricity Regulation in the US: A Guide." [13]

Rate cases provide opportunities for frontline communities, energy justice advocates, and others to bring up issues that are most important to them.

You don't have to be a utility regulatory expert to say that you don't want your energy bills to skyrocket, especially if that money is going to support harmful fossil fuel infrastructure or political activities with which you don't agree. You don't have to know the exact terminology a PUC might use to call for fair and equitable rates that benefit both consumers and the environment. Partnering with legal and technical experts to help amplify your voices in front of PUCs can be a helpful step, but everyone should feel comfortable bringing their lived experience and perspective to these cases.

Capitol News Illinois photo by Andrew Adams

13 Jim Lazar, "Electricity Regulation in the US: A Guide" (Regulatory Assistance Project, July 12, 2016) https://www.raponline.org/knowledge-center/electricity-regulation-in-the-us-a-guide-2/

Renewable portfolio standards

Over the past few decades, **renewable portfolio standards** (RPS) have emerged as pivotal tools in advancing renewable energy adoption across various states. Led by environmental and clean energy advocates, these standards require a specific proportion of a regulated utility's energy mix (e.g., 80 or 100 percent) to be sourced from renewable resources by a specific deadline. Alongside federal incentives, RPS laws have played a critical role in stimulating significant investments in renewable energy infrastructure nationwide.

IEJ's "Justice in 100: Analysis of the First Ten 100% Laws in the U.S." created an evaluation framework to assess the first ten RPSs to require 100 percent renewable or clean energy. The results of this evaluation showed uneven commitments to equity and justice in these policies, including definitions of "renewable energy" that have the potential to lock in fossil fuel infrastructure for decades to come.[14] In general, the specifics of RPS programs vary significantly from state to state. Significant areas of difference include:

Definitions of Renewable or Clean Energy

Criteria for what resources are considered "renewable" or "clean" and count for RPS compliance can vary drastically from state to state. Solar, wind, geothermal, biomass (organic materials used for fuel), and some hydropower are included in most states' definitions. In some states, definitions of what types of biomass (e.g., municipal solid waste, wood waste, etc.) or hydropower (e.g., small- or large-scale) count as renewable or clean energy are defined. In addition, certain state RPSs allow for polluting energy sources, including "renewable" natural gas, traditional fossil gas, and even certain coal technologies, to count as renewable or clean energy.[15]

Distributed Generation (DG)

While some RPS laws explicitly include DG like rooftop solar, in compliance measures, others do not address it directly, and take an agnostic approach to the balance of distributed and centralized generation in a state's portfolio.

Resource Ownership

Some state RPSs include provisions related to utility ownership of renewable resources — for example, by allowing for power purchase agreements with third-party-owned resources, or by purchasing renewable energy credits (more below on RECs). However, true community-based ownership or involvement in renewable projects is rarely integrated into RPS frameworks, despite its potential to promote energy equity. In general, community ownership is driven through other policy mechanisms.

Addressing equity concerns in renewable energy extends beyond sourcing to include issues like responsible mining practices and ensuring strict environmental and labor standards throughout the supply chain. Nonprofits and energy justice-focused organizations can play a vital role in shaping these standards, their implementation, and advocating for complementary policies that promote equitable renewable energy development.

14 Initiative for Energy Justice, "Justice in 100: Analysis of the First Ten 100% Laws in the U.S.," Justice in 100 (Initiative for Energy Justice, August 2023), https://iejusa.org/jin100report/

15 ibid.

Renewable Energy Certificates (RECs) are central to RPS and CES compliance, representing the renewable attributes of energy generation and allowing for utilities that do not own generation resources themselves to still meet policy requirements. However, there are concerns about the equity and transparency of REC markets, particularly regarding sourcing and labor standards, and the effects of worsening local air pollution on environmental justice communities. Further, RECs can inadvertently result in greenwashing, where certain projects are promoted as more environmentally and climate-friendly than they are, including through double-counting of resources.[16] Watchdogging REC program development and implementation is an important way for advocates to ensure that utilities are not taking advantage of RECs at the expense of ratepayers and the climate.

Of course, as renewable energy becomes a larger part of the energy mix, there may be a need for more nuanced or flexible approaches to compliance or to drive the adoption of specific energy sources within the mix. Many states have updated their RPS goals and timelines for this reason, to reflect how markets and technology have changed. For instance, Massachusetts has implemented a Clean Peak Standard to incentivize clean energy generation during peak demand periods. In multiple states including California and Colorado, utilities can "bank" excess renewable energy certificates for future compliance periods. Some states have credit multipliers or carve-outs to specifically accelerate small-scale solar deployment.[17] These provisions can have both intended and unintended impacts. Engaging in dockets related to program design can help ensure that unintended consequences of bill language are mitigated or avoided.

Future areas of advocacy efforts for nonprofits and energy justice-focused organizations may include fighting projects that are not in line with energy justice and frontline community needs, even if these resources are technically RPS compliant (e.g., fighting polluting gas infrastructure), strengthening overall RPS implementation plans, establishing robust interim targets, and ensuring meaningful roles for distributed energy resources in RPS frameworks. By pushing for equitable and inclusive renewable energy policies, frontline organizations can help maximize the environmental and social benefits of clean energy transitions.

Integrated resource planning

Integrated Resource Planning (IRP) is a long-term planning process with the purpose of ensuring utilities can provide reliable electricity to customers while considering other policy, environmental, and economic factors. The IRP process is like a strategic meeting between a utility company and regulators to decide on the best mix of resources for providing electricity at the lowest cost to consumers while achieving specific policy goals and equity outcomes. These goals and outcomes can vary by state but can include environmental justice impacts, environmental protection and conservation, reliability, risk mitigation, and meeting state-specific policy goals.[18]

When there is not sufficient regulation and engagement, the IRP process can look like a utility proposing its ideal mix of resources to ensure profitability without consideration for communities or the environment, while a PUC "rubber stamps" the plan without adequately scrutinizing it or listening to other stakeholders.

16 Enzo Bergamo, "Renewable Energy Credits: Decarbonizing the Grid or Just a Corporate Messaging Tool?," Kleinman Center for Energy Policy (blog), June 15, 2023 https://kleinmanenergy.upenn.edu/news-insights/renewable-energy-credits-decarbonizing-the-grid-or-just-a-corporate-messaging-tool/ Nathan Frischkorn and Samuel Waxman, "Power and Pollution: Approaching Coal-Fired Power Plants and Renewable Energy Through a Racial Justice Lens," Chicago-Kent Journal of Environmental and Energy Law 10, no. 2 (2021): 1–38.

17 State of Massachusetts, "Clean Peak Standard," https://www.mass.gov/clean-peak-energy-standard; Galen Barbose, "U.S. State Renewables Portfolio & Clean Electricity Standards: 2023 Status," Lawrence Berkeley National Lab, June 2023, https://eta-publications.lbl.gov/sites/default/files/lbnl_rps_ces_status_report_2023_edition.pdf

18 Mark Dyson, Lauren Shwisberg, and Katerina Stephan, "Reimagining Resource Planning" (Rocky Mountain Institute, January 2023) https://rmi.org/insight/reimagining-resource-planning/ Jake Duncan et al., "Participating in Power: How to Read and Respond to Integrated Resource Plans." (Regulatory Assistance Project, and Institute for Market Transformation, October 2021) https://www.imt.org/resources/participating-in-power-how-to-read-and-respond-to-integrated-resource-plans/ Bharath Jairaj et al., "10 Questions To Ask About Integrated Resources Planning," Working Paper, The 10 Questions Series: Frameworks for Designing Good Electricity Policy (World Resources Institute, Electricity Governance Initiative and Prayas, Energy Group, May 2014) https://www.wri.org/research/10-questions-ask-about-integrated-resources-planning

Though processes can differ by state, in general an IRP process requires that a utility explains what they expect for their business over a long-term time horizon, including predicting how much electricity will be needed (demand), ensuring there are enough power sources to meet that demand (supply), and detailing how they plan to comply with state laws regarding renewable energy and climate emissions. This generally involves using advanced computer models to analyze different scenarios and options, including retiring old power plants or building new ones, whether they run on fossil fuels or renewable energy. After sharing their analysis, the utility will provide its plan to achieve its preferred mix of resources over time. The utility's plan might consider factors like the type of power sources (such as **baseload, variable, or peaking power**), cost, reliability, energy efficiency and even the adoption of distributed energy resources (DERs) like solar panels.

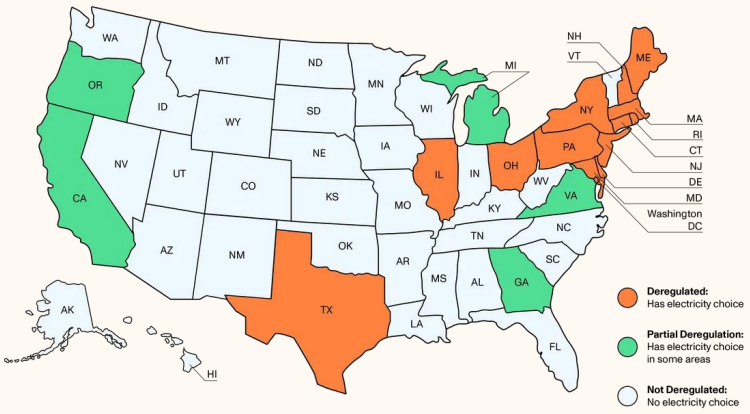

Figure 3: Energy deregulation status of U.S. states. Deregulated jurisdictions include Connecticut, Delaware, Illinois, Maryland, Massachusetts, Maine, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Texas, and Washington D.C. Partially deregulated states include California, Georgia, Michigan, Oregon, and Virginia. All other states are not deregulated.

Source: Zooey Liao, CNET, https://www.cnet.com/home/energy-and-utilities/energy-deregulation

IRPs vary from state to state in terms of how often they are required and how far into the future they plan, but in general, they look over a 10- to 25-year time horizon. The scope of an IRP can also differ depending on whether the state's energy market is **restructured** or **vertically integrated**. In general, many states require utilities that operate within their jurisdiction to submit an IRP to the state PUC. For some states with fully restructured markets — including in ISO-NE (New England), NYISO (New York), and PJM (mid-Atlantic) market territories — IRPs are done by the regional authority, not the states themselves. Some utilities that are not subject to the requirements of an IRP still produce long-term planning documents that are similar to IRPs (such as approvals for new power plants or long-term power purchase agreements). Utilities that span state borders are sometimes subject to IRP requirements for each state that the utility operates within, and may or may not do "cross-state" plans. States vary in which types of utilities are required to prepare IRPs — some only require IOUs to prepare and submit IRPs, while other states can require IRPs from cooperative utilities and municipally owned utilities.[19] This is all to say that it can be complicated to understand what is required of utilities for long-term planning in different states. For this reason, as with rate cases, it can be extremely beneficial to work with legal and technical experts to intervene in IRPs, even if it's not required.

Despite their level of technicality, energy justice and frontline organizations have a lot to gain from getting involved in IRPs. These proceedings are key areas of intervention to advocate for more renewable energy and retiring fossil fuel plants. Advocates specifically concerned with the labor and workforce effects of the energy transitions can advance considerations like a "just transition" plan for workers and communities affected by these changes. Advocates can also scrutinize the modeling tools and assumptions used in the IRP process to ensure they reflect community needs and climate goals.

Various organizations have created guides for how to participate in PUC IRP proceedings. A report from the Regulatory Assistance Project and the Institute for Market Transformation, "Participating in Power: How to Read and Respond to Integrated Resource Plans" provides a useful overview of advocating for equity and justice within IRPs; the report outlines the content of most IRPs, and offers concrete questions to ask for each IRP section, possible suggestions that could be submitted to the PUC, and further sources for interested advocates, particularly advocates involved in local government.[20] The American Cities Climate Challenge Renewables Accelerator has also produced a support package for city-level participation and intervention in IRP proceedings.[21]

19 Dyson, Shwisberg, and Stephan, "Reimagining Resource Planning," RMI, 2022, https://rmi.org/insight/reimagining-resource-planning/

20 Institute for Market Transformation, "Participating in Power: How to Read and Respond to Integrated Resource Plans," 2021, https://imt.org/resources/participating-in-power-how-to-read-and-respond-to-integrated-resource-plans/ Institute for Market Transformation, "Public Utilities Commissions and Consumer Advocates: Protecting the Public Interest," 2022, https://imt.org/resources/public-utilities-commissions-and-consumer-advocates-protecting-the-public-interest/

21 Celina Bonugli and Heidi Ratz, "Integrated Resource Plan (IRP) Support Package" (American Cities Climate Challenge Renewables Accelerator, n.d.) https://cityrenewables.org/resources/integrated-resource-plan-irp-support-package/

Energy affordability

Issues related to energy affordability come up in a variety of proceedings — including rate cases and long-term resource plans — but some states have taken up dockets to tackle energy affordability more directly or holistically. For example, California, New York, and Massachusetts have attempted to improve energy affordability through various strategies, considering rate design reforms, energy efficiency programs, bill assistance initiatives, and consumer protection measures.[22] These dockets types can offer a critical platform for stakeholders to raise concerns, present evidence, and advocate for equitable policies and programs that prioritize accessibility, affordability, and equity in the energy sector.

One important example of an energy affordability issue at PUCs is **income-qualified discount rates**, or programs implemented by states or utilities to offer financial assistance to low-income individuals and households to make electricity service more affordable. Examples of these initiatives include California's CARE Program,[23] Massachusetts' Ratepayer Funded Programs,[24] Oregon's low-income rates enacted through legislation,[25] and Vermont's Green Mountain Power Energy Assistance Program.[26] Frontline and community-based organizations can play a crucial role in advocating for and shaping income-qualified discount rate programs to better serve their communities. To promote equitable access to electricity, advocates can call for clear and inclusive eligibility criteria, streamlined enrollment processes, meaningful discounts that reduce energy bills for high-burden households, and adequate funding sources. Working in coalitions with ratepayer advocates[27] and other energy justice-focused organizations can help organizations effectively engage in these dockets and influence policies that prioritize accessibility, affordability, and equity for all customers, regardless of financial status or race.[28]

In addition to income-qualified discount rates, some state PUCs or individual utilities offer **bill payment assistance** programs to help low-income customers manage their utility expenses during financial hardships. These programs often collaborate with community partners to provide emergency bill payment assistance, access federal energy assistance funds, and offer flexible payment plans. For instance, Tucson Electric Power's Lifeline Program in Arizona offers a $20 monthly discount and works with community partners to provide additional emergency aid.[29]

Advocates engaging with PUCs should consider researching whether discount rate or bill payment assistance programs already exist in their respective states, collaborating with community agencies to understand where they could be developed or improved, advocating for the establishment of inclusive and effective support mechanisms, and educating community members about any available resources to help them maintain essential utility services.

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22 Massachusetts Department of Public Utilities, "D.PU 24-15," January 4, 2024 https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/18395007 New York Public Service Commission, "Case 14-M-0565," January 9, 2015 https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={B9477FFE-87E4-427F-937A-12E490920EEB} California Public Utilities Commission, "Rulemaking 18-07-006," July 23, 2018 https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/affordability

23 California Public Utilities Commission, "CARE/FERA Program," https://www.cpuc.ca.gov/lowincomerates/

24 National Center for Appropriate Technology, "Massachusetts Ratepayer Funded Programs," LIHEAP Clearinghouse https://liheapch.acf.hhs.gov/dereg/states/masnapshot.htm

25 Portland General, "Income-Qualified Bill Discount," PGE, 2024 https://portlandgeneral.com/income-qualified-bill-discount Oregon Health and Community Services, "HB 2475 Summary," October 14, 2021 https://www.oregon.gov/puc/Documents/HB2475-Summary.pdf Mark Dyson, Lauren Shwisberg, and Katerina Stephan, "Reimagining Resource Planning" (Rocky Mountain Institute, January 2023) https://rmi.org/insight/reimagining-resource-planning/ Jake Duncan et al., "Participating in Power: How to Read and Respond to Integrated Resource Plans." (Regulatory Assistance Project, and Institute for Market Transformation, October 2021) https://www.imt.org/resources/participating-in-power-how-to-read-and-respond-to-integrated-resource-plans/ Bharath Jairaj et al., "10 Questions To Ask About Integrated Resources Planning," Working Paper, The 10 Questions Series: Frameworks for Designing Good Electricity Policy (World Resources Institute, Electricity Governance Initiative and Prayas, Energy Group, May 2014) https://www.wri.org/research/10-questions-ask-about-integrated-resources-planning

26 Green Mountain Power, "What Is the Energy Assistance Program (EAP)?," Green Mountain Power, 2022 https://greenmountainpower.com/help/what-is-the-energy-assistance-program-eap/

27 Ratepayer advocates, such as Citizen Utility Boards (CUB) and other consumer advocacy groups often play a crucial role in representing the interests of utility customers, particularly low-income and vulnerable populations, in regulatory proceedings before PUCs and other relevant bodies. These advocacy groups work to ensure fair utility rates, transparent billing practices, equitable access to essential services, and the establishment and enhancement of income-based discount rates, bill payment assistance programs, and consumer protections. They often engage in research, policy analysis, public education, and grassroots organizing to empower frontline communities, promote equitable utility service delivery, and hold utility companies and regulatory agencies accountable to the public interest.

28 Duncan and Eagles, "Public Utilities Commissions and Consumer Advocates: Protecting the Public Interest."

29 Tucson Electric Power, "Lifeline Program," Tucson Electric Power https://www.tep.com/customer-assistance/

Utility shutoffs for nonpayment

Regulated utilities are generally allowed to disconnect customers from energy service due to nonpayment, though these disconnections are subject to various state-level requirements. For example, certain states prevent utilities from shutting off service ❶ due to nonpayment during the winter or summer months, ❷ during extreme temperature events, ❸ for households that have elderly or young residents, ❹ for low-income households, or ❺ for households that have certain medical conditions. However, not all states provide these safety nets, and even when utility shutoffs are banned, these policies do not tend to prevent housing evictions due to nonpayment of utility bills.[30]

Low-income, Black, and Hispanic households, renters, households with young children, individuals with medical conditions that require electricity access, residents of mobile homes, or residents of older homes without adequate insulation are more likely to experience energy insecurity and face utility disconnection.[31]

Advocates primarily concerned with utility shutoffs should first determine whether their state PUC tracks disconnections. If utility disconnections due to nonpayment are not tracked, advocates should begin by requesting that the PUC begin tracking disconnections to increase transparency.[32]

If the state PUC does track disconnections, advocates should seek out PUC utility disconnection actions. Advocating for more robust shutoff moratoria with fewer restrictions around when and for whom the moratoria is in effect will increase the safety net for households struggling with energy insecurity due to affordability. Arrearage programs that forgive or partially forgive customer debt and allow for affordable monthly payments on overdue bills are another important area of focus.[33] Such protections reduce vulnerability to evictions and exposure to extreme weather events.[34]

The COVID-19 pandemic expanded the use of utility shutoff moratoria to the general population.[35] Certain state legislatures passed emergency statutes that allocated funding or resources to emergency response actions or directed PUCs to ensure public safety and welfare. Some governors also declared a state of emergency and worked through the PUC to advance energy security for households throughout the pandemic. Through legislative or executive authority, PUCs were able to issue orders to utilities during the COVID-19 pandemic, directing utilities on how to respond to disconnection actions. Some utilities voluntarily enacted shutoff moratoria programs when there was no legislative or executive action.

Research conducted during these utility shutoff moratoria and in the subsequent years, including IEJ's policy brief on the subject, has confirmed the life-saving nature of the moratoria during the COVID-19 pandemic and has provided policy recommendations for expanding shutoff moratoria practices and streamlining their use.[36]

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30 Ashley J. Lawson and Claire Mills, "Electric Utility Disconnections," Congressional Research Service Report (Congressional Research Service, January 31, 2023) https://crsreports.congress.gov/product/pdf/R/R47417

31 Trevor Memmott et al., "Utility Disconnection Protections and the Incidence of Energy Insecurity in the United States," iScience 26, no. 3 (March 2023): 106244 https://doi.org/10.1016/j.isci.2023.106244 Diana Hernández and Jennifer Laird, "Surviving a Shut-Off: U.S. Households at Greatest Risk of Utility Disconnections and How They Cope," American Behavioral Scientist 66, no. 7 (June 2022): 856–80 https://doi.org/10.1177/00027642211013401

32 Energy Justice Lab, Utility Disconnections Dashboard, 2023, 2023 https://utilitydisconnections.org/

33 Colette Brashears, Talia Lanckton, and Shalanda H. Baker, "Utility Shutoffs and the COVID-19 Pandemic: Policy Recommendations for Policymakers and Advocates Concerning Utility Shutoffs and Consumer Protections," Policy Brief (Initiative for Energy Justice, December 2020) https://iejusa.org/utility-shutoffs-covid-19-policy-brief/

34 Matthew Flaherty, Sanya Carley, and David M. Konisky, "Electric Utility Disconnection Policy and Vulnerable Populations," The Electricity Journal 33, no. 10 (December 2020): 106859 https://doi.org/10.1016/j.tej.2020.106859 Memmott et al., "Utility Disconnection Protections and the Incidence of Energy Insecurity in the United States."

35 Shalanda H. Baker, Sanya Carley, and David M. Konisky, "Energy Insecurity and the Urgent Need for Utility Disconnection Protections," Energy Policy 159 (December 2021): 112663 https://doi.org/10.1016/j.enpol.2021.112663 Dominic J. Bednar and Tony G. Reames, "Fleeting Energy Protections: State and Utility Level Policy Responses to Energy Poverty in the United States during COVID-19," Energy Research & Social Science 99 (May 2023): 103045 https://doi.org/10.1016/j.erss.2023.103045 Brashears, Lanckton, and Baker, "Utility Shutoffs and COVID-19 Policy Brief"; Flaherty, Carley, and Konisky, "Electric Utility Disconnection Policy and Vulnerable Populations"; Kay Jowers et al., "Housing Precarity & the COVID-19 Pandemic: Impacts of Utility Disconnection and Eviction Moratoria on Infections and Deaths Across US Counties," Working Paper, NBER Working Paper Series (Cambridge, MA: National Bureau of Economic Research, January 2021) https://www.nber.org/papers/w28394 Trevor Memmott et al., "Sociodemographic Disparities in Energy Insecurity among Low-Income Households before and during the COVID-19 Pandemic," Nature Energy 6, no. 2 (January 18, 2021): 186–93 https://doi.org/10.1038/s41560-020-00763-9 Memmott et al., "Utility Disconnection Protections and the Incidence of Energy Insecurity in the United States";

36 Jowers et al., "Housing Precarity & the COVID-19 Pandemic"; Brashears, Lanckton, and Baker, "Utility Shutoffs and COVID-19 Policy Brief"; Baker, Carley, and Konisky, "Energy Insecurity and the Urgent Need for Utility Disconnection Protections."

Utility-initiated power shutoffs

Utilities are increasingly using broad power shutoffs across the grid to reduce overall blackout risk and reduce the risk of electricity-instigated wildfires during high wind events. These utility-initiated power shutoffs, distinct from the nonpayment-related power shutoffs discussed in the previous section, are meant to address increasing risks to people's homes, businesses, and entire cities due to wildfires and other disasters caused by the climate crisis and other risks in our energy system.

In states where utilities have initiated oversight of utility-initiated power shutoffs, these utilities might be required to submit reports to their state PUC detailing the numbers of customers de-energized, the utility's rationale for shutting off power, a description of damage to utility infrastructure due to the high-wind events, and efforts made by the utility to ensure that all customers (especially those with medical vulnerabilities that require consistent access to electricity) were notified of the shutoff event.[37] State PUCs will generally have the authority to determine whether utility actions, including power shutoffs, are required to protect public safety. Advocates can pressure PUCs to leverage this authority to regulate utilities as power shutoffs become more common in order to reduce the use of this tool and ensure that those who are most vulnerable to power shutoffs are not harmed by the practice. Not all state PUCs have started regulating utility-initiated power shutoffs; in some cases, utilities are using mass power shutoffs to reduce wildfire risk, but are not subject to regulatory requirements from the PUC.[38] In these cases, advocates should push for their state PUC to regulate the use of power shutoffs to reduce wildfire risk. As an example, the California PUC began providing guidance on "public safety power shutoffs" in 2012.[39] Utilities in the state had requested authority to shut off power as a wildfire prevention measure.[40] The California PUC instituted public notice requirements, mitigation plans, and reporting requirements for all investor-owned utilities conducting these utility-initiated power shutoffs in 2018.[41] Investor-owned utilities have relied heavily on these power shutoffs in California, shutting off power for almost 1 million customers in a single 2019 shutoff event alone.[42] IEJ has published two policy briefs on the growing use of utility-initiated power shutoffs in California and western states, focusing on data deficiencies in the utility reporting requirements after shutoffs, and policy recommendations for alleviating the impact of these power shutoffs on environmental justice communities and medically-vulnerable customers.[43]

The disproportionate effects of power shutoffs on underserved communities is a key area of energy justice advocacy in states where these power shutoffs are used. Where power is shut off, communities often rely on polluting and expensive diesel generators for back up power.[44] Advocates interested in commenting on, or intervening in, proceedings related to these utility-initiated power shutoffs should look for consumer protection groups, disability rights advocates, and utility justice organizations to partner with on advancing justice and equity in relevant proceedings. Energy justice advocacy efforts could include expanding the transparency and regulation of utility use of power shutoffs as a wildfire prevention tool, while also promoting infrastructure, energy efficiency, resilience, and decentralization improvements to reduce the use of power shutoffs.

37 Marisa Sotolongo, Cecelia Bolon, and Shalanda H. Baker, "California Power Shutoffs: Deficiencies in Data and Reporting," Policy Brief (Initiative for Energy Justice, October 2020) https://iejusa.org/wp-content/uploads/2020/10/V3.3-Policy-Brief-CA-Shutoffs-Data-Brief.pdf

38 Pacific Power, "Public Safety Power Shutoff," 2023 https://www.pacificpower.net/outages-safety/wildfire-safety/public-safety-power-shutoff.html
Puget Sound Energy, "Public Safety Power Shutoff," 2023 https://www.pse.com/en/pages/Wildfire-preparedness/Public-Safety-Power-Shutoff
Rebecca Moss, "WA Utilities Proactively Turn off Power as Wildfires Come West," Seattle Times, September 11, 2022 https://www.seattletimes.com/seattle-news/times-watchdog/wa-utilities-proactively-turn-off-power-as-wildfires-come-west/

39 The "public safety power shutoffs" nomenclature obfuscates the extreme impacts and life-threatening nature of these electricity shutoff events. For the purpose of this policy brief, and in line with IEJ's previous publications on this topic, we jettison the phrase "public safety," and instead use the term "power shutoffs" or "utility-initiated power shutoffs".

40 San Diego Gas & Electric Company, "Application 08-12-021," December 22, 2008 https://www.sdge.com/sites/default/files/application_20_0.pdf California Public Utilities Commission, "Decision 12-04-024," April 26, 2012 https://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/165063.PDF

41 California Public Utilities Commission, "Decision 19-05-042," July 12, 2018 https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M296/K598/296598822.PDF

42 Sotolongo, Bolon, and Baker, "California Power Shutoffs: Deficiencies in Data and Reporting."

43 Marisa Sotolongo, Shalanda H. Baker, and Cecilia Bolon, "California's Wildfire Risk and Growing Energy Insecurity: Policy Recommendations for Energy Resilience in Vulnerable Populations," Policy Brief (Initiative for Energy Justice, December 2020) https://iejusa.org/wp-content/uploads/2021/01/CA-Shutoffs-Policy-Brief-2-V5.pdf
Sotolongo, Bolon, and Baker, "California Power Shutoffs: Deficiencies in Data and Reporting."

44 Leslie Guliasi, "Toward a Political Economy of Public Safety Power Shutoff: Politics, Ideology, and the Limits of Regulatory Choice in California," Energy Research & Social Science 71 (January 2021): 101842 https://doi.org/10.1016/j.erss.2020.101842

Other types of proceedings

This section has provided an overview of a few important types of proceedings that energy justice and other frontline advocacy organizations may be interested in participating or intervening in. In addition to these proceedings, there are many other types of proceedings and dockets that advocates can get involved in. For example, Certificate of Public Convenience and Necessity (CPCN) proceedings are held when a utility seeks to construct new power plants, transmission lines, or other major infrastructure projects. These proceedings are crucial for advocates to weigh in on the need for the proposed project, its potential environmental and community impacts, and to propose alternative solutions such as energy efficiency or renewable energy investments.

Additionally, advocates may want to participate in rulemaking proceedings, where public utility commissions establish or update rules and regulations governing various aspects of utility operations. These proceedings provide an opportunity to advocate for rules that prioritize energy justice, affordability, and environmental sustainability.

Finally, advocates should stay vigilant and engage in sub-dockets or phases within larger proceedings that address specific issues impacting energy justice principles.

Where to start?

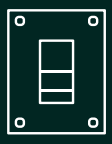
As a frontline or energy justice organization, there are many different types of utility regulatory proceedings you may want to prioritize getting involved in, depending on your specific goals:

If you care about **energy affordability** and protecting vulnerable households from high energy burdens, you'll want to engage in:

- Rate cases: When utilities request rate hikes, you can intervene to advocate for affordable rates, equitable rate design, and robust low-income assistance programs.
- Energy affordability program dockets: Many states have special proceedings to design and fund percentage-of-income payment plans, arrearage management, and other affordability initiatives.

If your focus is on **transitioning away from fossil fuels** and toward clean energy, key proceedings include:

- Integrated Resource Plans (IRP): Utilities' long-term energy plans lay out future generation investments. You can push for renewable energy, energy efficiency, and moving away from fossil fuels.
- Certificates of Public Convenience and Necessity (CPCNs): When utilities propose new gas plants, pipelines, etc., you can intervene to question necessity and advocate clean alternatives.
- Clean energy rulemakings: PUCs often open dockets to design renewable energy and energy efficiency programs and policies.



If you're concerned about **utility shut-offs** and disconnections, seek out:

- Disconnection policy dockets: Some states examine disconnection policies and protections for vulnerable households in these proceedings.
- Consumer complaint processes: Getting involved here can shed light on problematic utility practices around shutoffs.

No matter your priority issue, steps to get involved include: monitoring PUC dockets, filing to intervene, submitting testimony and comments, collaborating with other advocates, and making your community's voices heard. A great first step is to reach out to other advocates already working at your state's PUC. They can provide guidance on the current key proceedings, share insights on effective strategies, and suggest ways for your organization to get involved in a coordinated fashion. Understanding where efforts are already underway can help prioritize your engagement for maximum impact. See below for more information on how to get started engaging with PUCs.

How to Engage at Public Utility Commissions

Finding information on PUC websites

One key skill to engaging in advocacy at PUCs is knowing how to navigate their often clunky and confusing websites to get the information you need. PUC websites are usually organized by "proceedings" or "dockets" (largely interchangeable terms, with "docket" often referring to the specific case number or location on the website). For example, a specific utility might have multiple ongoing cases at the PUC, including a request to increase their rates (called a "rate case") and a request to get approval for their long-term energy plan (called an "integrated resource plan"). Each of these cases would be considered a separate, open proceeding and would have a specific docket number assigned to it. Another utility in the same state might have its own rate case happening at the same time. Although these are the same type of case, because they're for two separate utilities, they'd be considered separate proceedings and would have their own distinct docket number. See https://app.insightengine.org/portal for a full list of state PUCs and their websites.

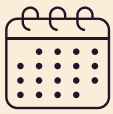
Here are some tips for navigating utility websites and keeping track of proceedings at PUCs:

The search tool is your friend!

- Many PUC websites offer "e-docket" or "filings" pages where you can access detailed records of ongoing and past proceedings. Utilize the search functionality on these pages to narrow down your results.
- By entering relevant keywords or docket numbers, you can quickly locate specific documents related to your area of interest, providing valuable insights into ongoing regulatory activities.

Keep an eye out for formal notices:

- When a project or regulation is up for approval, PUCs usually release formal notices (most often on their website as a docket but also in newspapers, social media, public flyers, mailers, and fliers in the PUC buildings, etc.). These notices hold important details about what's going on and how it might impact communities. For example, the notice might contain information on issues relevant to the proceeding, public comment opportunities, accommodations for disability services or translation, the date and time of the relevant meetings, and contact information for PUC staff.
- To find these notices, head to the PUC website and use the search bar. Try using keywords related to your interests or the specific project you're curious about.



Stay updated on upcoming meetings and other engagement opportunities:

- PUC websites often have sections listing upcoming meetings. These meetings are where decisions get discussed and made, so they're crucial for staying in the loop.
- Check these listings regularly. They usually give a quick rundown of what's on the agenda and how the public can join in.
- For most PUC websites, there is an option to subscribe to email updates on specific proceedings. This is a good way to keep track of relevant filings and updates to the docket.

Reach out directly if needed:

- Can't find what you're looking for online? No worries! Sometimes, a direct chat with someone at the PUC can clear things up.
- Give the PUC office a call and ask to speak with the clerk. They can help answer your questions and point you in the right direction.
- Additionally, asking fellow advocates at energy, climate, and environmental justice organizations, as well as ratepayer advocacy organizations, is often a great way to find information and ask questions.

Understanding case types

Aside from the specific names and nature of proceeding categories, cases can be broadly described as either "formal" or "informal." These descriptors are helpful in thinking about how proceedings are categorized, but are not hard and fast definitions. Importantly, formal cases require an intervention (or, a determination that a person or organization has demonstrated standing in order to participate), and there are findings of fact at issue (e.g. a utility's rate case application). Informal cases do not require intervention and are primarily geared towards policy decisions. Some formal proceedings are considered contested cases (vs. uncontested cases). The definition of a contested case may vary slightly by state, but in general, these cases operate like court cases in many ways and require legal representation to be an official party to the case. A primary example of a contested case is a rate case. An example of a formal but uncontested case, depending on the state, could be an integrated resource planning (IRP) proceeding.

General elements of a PUC intervention process[45]

Filing a Petition to Intervene:

Individuals, organizations, or companies that wish to participate in a specific regulatory proceeding or case must file a formal petition to intervene. This petition outlines their reasons for seeking intervention and demonstrates their standing and interest in the matter.

Review and Decision on Petitions to Intervene:

The PUC reviews the petitions to intervene and decides whether to grant intervenor status to those who have demonstrated a legitimate interest in the proceedings. The PUC considers factors such as relevance of the intervenor's perspective, potential contribution to the decision-making process, and potential impacts of the decision on the intervenor.

Intervenor Rights:

Once intervenor status is granted, the intervenor gains certain rights in the proceedings. These might include the right to submit evidence, cross-examine witnesses, file legal briefs, present arguments, and attend hearings related to the case.

Participation:

Intervenors actively participate in the proceedings by presenting their perspectives, participating in discovery, providing expert testimony, submitting data, making arguments in favor of their positions, and in some instances engaging in settlement discussion. They work to influence the outcome of the regulatory decision.

Public Hearings and Testimony:

PUCs often hold public hearings where intervenors, along with other stakeholders, can present their views directly to the decision-makers and the public. This provides an opportunity for different perspectives to be heard.

Final Decision:

After considering all relevant evidence and arguments, the PUC makes its final decision. This decision takes into account the input from intervenors, other stakeholders, and the public.

45 Vermont Public Utility Commission, "Public Participation and Intervention in Proceedings Before the Public Utilities Commission," accessed May 2, 2024 https://puc.vermont.gov/sites/psbnew/files/doc_library/Public-Participation-and-Intervention.pdf

Tips to engage in an informal proceeding like a rulemaking or investigation

For most proceedings, **public comments** – either written or verbal – are a mechanism of participation available to advocates and the public at large. Within the public notice for a proceeding, there should be specific guidelines as to whether a PUC will offer opportunities for written public comments and/or accept verbal public comments during public meetings or hearings. If there is no information in the public notice, advocates can seek out further clarification from PUC employees.

Written public comments are an important tool for advocates who provide longer or more in-depth analyses and perspectives related to a specific issue. For **rulemaking** proceedings, this would be regarding whether a rule should be adopted as proposed or if changes are needed. For an investigation, this could be information that a community or organization feels is important for a PUC to consider. Written comments with more substantive information and longer statements are better provided before a proceeding to give PUC staff and Commissioners adequate time to review submitted materials.

In addition to written comments, advocates may provide oral testimony at **public hearings**. These are great opportunities to recruit community members and impacted individuals to provide testimony directly to Commissioners and can often be more meaningful than technical, written comments – especially if the testimony includes direct requests to Commissioners. It's important to ascertain if oral testimony is an option, whether time limits apply, if material presentations are permitted, and if Commissioners need to respond to oral testimony. Public hearings often have limited time for oral testimony, if available. In many cases, once a proceeding concludes, public comments can no longer be submitted for consideration.

Tips to engage in a formal or "contested" proceeding, like a rate case

Parties can intervene in proceedings and obtain **party** status in a number of ways, most commonly by filing a legal motion.[46] The requirements for intervention vary across states, but generally require a showing of the following elements:
1. a description of you/your organization and relevant contact information;
2. an explanation of your interest in the proceeding and why no other party can represent those interests; and
3. a commitment that your advocacy will not expand the scope of the proceeding or result in excessive administrative burdens. Many jurisdictions impose firm deadlines for filing motions for party status or intervention, which are generally set in statute and/or the applicable rules of practice and procedure.

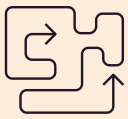
Intervention: An intervention represents the most demanding form of engagement, providing individuals and organizations with greater influence than those involved solely in public comment processes. But intervention can also cost money, including but not limited to staff time. Some states offer **Intervenor Compensation Programs** to offset costs, but compensation timing varies. If intervening isn't feasible or deemed resource-efficient, advocates can explore collaborating with other official intervenors aligned with energy justice goals. Researching past intervenors in similar cases can inform potential collaboration opportunities, fostering collective efforts toward equitable outcomes in energy regulation.

46 In addition to filing a motion for party status, some jurisdictions may allow for oral motions for party status to be made at the pre-hearing conference or may automatically grant party status when a protest to an application is filed or comments are filed on a new rulemaking.

Formal but **uncontested** proceedings, like a long-term resource plan, might require a formal intervention but not require a lawyer to represent you or your organization. The standard for involvement in these proceedings is still that you have demonstrated standing to engage, and may in general require a higher level of technical or other analysis, but would not necessarily include legal processes such as briefing, discovery, and oral arguments. However, it is often helpful to partner with lawyers or nonprofits with legal expertise to ensure that you are meeting whatever administrative requirements the formal proceeding entails.

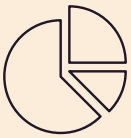
Contested proceedings (many of which are "adjudicatory" proceedings) represent a more formal, court-like process, in which official parties need to have legal representation. Contested proceedings typically feature an administrative law judge overseeing expert written testimony, evidentiary discovery, live oral testimony, cross-examination, briefing, and a decision. Examples of cases within contested proceedings include customer complaints against utilities, alleged violations of PUC rules or state law, or rate-setting cases.

To effectively engage in formal proceedings, consider the following tips:



Understand the Process

Familiarize yourself with the specific procedural rules and requirements governing contested proceedings at your PUC. Each jurisdiction may have unique processes, timelines, and submission requirements.



Gather Evidence

If you plan to participate as an intervenor or submit comments, gather relevant evidence to support your position. This may include data, studies, expert opinions, or testimonies from affected individuals or communities. In order to introduce evidence in a formal proceeding, you must be an intervenor (remember that public comments are not considered "evidence").

Form Coalitions

Consider joining forces with other stakeholders who share similar interests or concerns. Collaborating with like-minded organizations or individuals can amplify your advocacy efforts and provide collective strength in numbers.

Build Relationships

Establish positive relationships with PUC staff, Commissioners, and other stakeholders to enhance your credibility and influence within the regulatory process. Attend meetings, hearings, and public events to network and engage with decision-makers.

Be Strategic

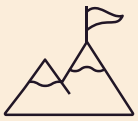
Prioritize your engagement efforts based on the issues that are most critical to your objectives. Focus your resources on key areas where you can have the greatest impact, whether through written comments, oral comments, or intervention.

Stay Informed

Stay updated on developments in the proceeding, including new filings, hearings, and decisions. Regularly check the PUC website, subscribe to email notifications, and follow relevant news sources to stay informed.

Seek Legal Assistance

If the proceedings become complex or legal expertise is required, consider seeking assistance from attorneys or legal experts familiar with utility regulation and administrative law. They can provide valuable guidance and support throughout the process. See more on this in the "How to find technical assistance and legal support" below.



Be Persistent

Engaging in contested proceedings can be a lengthy and sometimes frustrating process. Stay persistent and committed to your goals, even if progress seems slow. Your perseverance can make a difference in shaping fair and equitable outcomes.

Tips to find technical assistance and legal support

For PUC proceedings that require additional technical or legal capacity that your organization may not have, the first step is often to ask around and find out which energy justice organizations are already involved in related or relevant PUC dockets or proceedings. There may be opportunities to join existing coalitions and benefit from shared resources.

Regional and national environmental and energy non-profits like the Environmental Law & Policy Center (ELPC), Southern Environmental Law Center (SELC), Earthjustice, and Sierra Club (among others) often provide legal capacity and sometimes technical assistance to local and community-based energy justice groups when asked.

Doing some research and asking staff at these organizations if they know of resources or are able to provide support is often a helpful early step in proceedings. These organizations can potentially assist not just with legal needs, but also with technical analysis relating to energy modeling, rate design, grid planning and other complex aspects of PUC proceedings. There are also think tanks and nonprofits that provide technical analysis for smaller organizations, including groups like RMI and GridLab. These groups often have staff researchers or can help connect local groups to universities and consultants for technical support.

Other nonprofits that sometimes provide legal and technical support to energy organizations engaging in PUC work include groups like the American Civil Liberties Union (ACLU), the National Consumer Law Center, and citizen utility boards (CUB), as these groups have expertise in energy and utility matters affecting underserved communities. They may be able to offer guidance, legal analysis, potential representation for interventions, or help connecting with technical experts.

Advocates can also explore local or regional law school clinics (e.g., the Green Energy Institute at Lewis & Clark Law School or the Abrams Environmental Law Clinic at the University of Chicago Law School) that focus on environmental or energy issues and reach out to staff. These clinics may be able to offer legal guidance or representation, provide research support from students and faculty, or help connect you with other organizations and experts in the area.

Finally, check if your state has an intervenor compensation program that funds legal counsel, expert witnesses, and technical consultants when officially intervening in PUC cases. Availability and specifics vary across states.

Photographer: Ronan Furuta

Photographer: Markus Spiske

Addressing Inequities in Utility Regulation

Utility commissions allow public participation in proceedings in part to help ensure that their decisions align with the best interests of the communities and consumers they serve. However, barriers often limit participation by the public or third-party organizations and instead support **regulatory capture** relationships between utilities and their regulators, where regulators begin to promote the interest of the businesses it regulates over the public interest.

To transform PUC advocacy and make participating in proceedings more accessible and effective, a variety of improvements can be made. One key example is including equity provisions in laws and regulations that center frontline communities, low-wealth communities, and communities of color, while ensuring accessibility in proceedings.

Two Utility Case Studies: Colorado and Michigan

Policy research interns from UC Berkeley conducted semi-structured interviews with frontline communities and organizations to explore intervention processes for two states in two different types of proceedings: Colorado's Xcel Renewable Energy Standard (RES) Plan 2022-2025 and Michigan's DTE Integrated Resource Plan (IRP) 2023.[47] The interviews included open-ended questions aimed at understanding stakeholders' experiences, concerns, and priorities, particularly regarding community solar projects and access to micro-grid services. The interviews were analyzed to identify common themes and insights to gain a nuanced understanding of stakeholder engagement and their reasons for intervention. Vote Solar staff and the student researchers also conducted a policy analysis of the utility plans and stakeholder engagement strategies, assessing the impact of interventions on plan modifications and their alignment with clean energy goals. Below are summaries of the interview findings, emphasizing the importance of inclusive engagement and responsive utility practices.

47 DTE, "2022 DTE Electric Integrated Resource Plan (Summary)," 2022 https://dtecleanenergy.com/downloads/IRP_Executive_Summary.pdf
Xcel Energy, "2022-2025 Renewable Energy Standard Plan," 2022 https://www.xcelenergy.com/company/rates_and_regulations/filings/renewable_energy_plans_and_reports

Colorado Xcel Renewable Energy Standard Plan 2022-2025

Overview of the Initial Proposed Plan

Xcel Energy, an investor-owned electric and gas utility, has a goal to deliver 100% carbon-free electricity by 2050, with an interim goal to cut its carbon emissions by 80% by 2030 in order to meet the state's goal of transitioning to 100% renewable energy by 2040.[48]

The RES plan lays out how Xcel plans to meet these clean energy goals for the next four years and puts forward renewable energy plans. These plans range from launching a "renewable" fossil gas program to expanding renewable energy resources (solar, wind, and energy storage).

Why Did Communities & Organizations Intervene?

Xcel was behind schedule on delivering funds that were agreed upon for community solar projects. These community solar projects would allow residents who are unable to put solar panels on their homes or apartments to participate in clean energy programs, with a focus on serving low-income customers.[49]

Micro-grid services were only being offered to commercial customers, not residential, a major barrier to access for BIPOC, frontline, and low-wealth communities.[50]

Michigan's DTE Integrated Resource Plan 2023

Overview of the Initial Proposed Plan

In 2019, DTE, an investor-owned energy utility, announced plans to reach net zero carbon emissions by 2050.[51]

The Michigan DTE Energy 2022 plan proposes accelerating DTE's decarbonization goals through a self-proclaimed "balanced and diversified approach" of transitioning to cleaner energy. This plan includes customer incentives, workforce development, and infrastructure transformation proposals.[52]

Why Did Communities & Organizations Intervene?

Advocates want to see more investment in distributed energy resources like microgrids. These microgrids would be small neighborhood-scale grids powered by collectively owned community solar sites that would be designed to provide a more affordable option for low-income customers.[53]

Overall affordability in access to clean energy needs to be addressed. DTE has among the worst reliability profiles and highest utility rates in the country.[54]

Advocates want to see the coal-fired Monroe Power Plant close down, with a just transition for its workers. The power plant is one of the country's most significant individual contributors to pollution. While DTE intended to close the plant within its plan, it planned to charge Michigan ratepayers for continuing profits on the $4 billion Monroe plant investment for years after its closure. Advocates argued that under this plan, DTE was essentially jeopardizing the health of its customers.[55]

48 "Sunset Public Utilities Commission," 40-2-125.5 Colorado Revised Statutes § (2019) https://leg.colorado.gov/bills/sb19-236 Xcel Energy, "2022-2025 Renewable Energy Standard Plan."

49 Michael Booth, "More Colorado Community Solar Gardens Moving Forward after PUC Rejects Xcel Effort to Postpone," The Colorado Sun, April 11, 2022 https://coloradosun.com/2022/04/11/colorado-community-solar-gardens-expansion/

50 Vote Solar staff members involved in the primary coalition for Colorado Xcel Renewable Energy Standard (RES) Plan 2022-2025, interview, 04/07/2023.

51 DTE Energy, "Net Zero Carbon Emissions Goal Announced by DTE Energy Electric Company," September 26, 2019 https://ir.dteenergy.com/news/press-release-details/2019/Net-Zero-Carbon-emissions-goal-announced-by-DTE-Energy-Electric-Company/default.aspx

52 DTE, "2022 DTE Electric Integrated Resource Plan (Summary)."

53 Nina Misuraca Ignaczak, "DTE Plan Calls for Early Coal-Plant Retirement, More Renewables. Advocates Call for Faster Progress, Local Ownership," Planet Detroit, November 4, 2022 https://planetdetroit.org/2022/11/dte-energy-files-plan-calling-for-faster-coal-plant-retirement-more-renewables-advocates-call-for-faster-progress-more-local-ownership/

54 ibid.

55 ibid.

INTERVIEW RESULTS:

Key insights & patterns of inequity within the intervention process

This analysis uncovered several systemic barriers within the intervention process, highlighting how these barriers disproportionately affect frontline communities and organizations. These findings highlight many (but not all) challenges community-based and frontline organizations may face while engaging in proceedings before PUCs.

Technical Expertise & Language Justice

The intervention process is very technical and requires an understanding of complex vocabulary with a lack of multilingual resources and live interpreters/translators provided to community members. Without the proper tools and resources to effectively engage with the process, frontline, BIPOC, and/or low-wealth communities cannot navigate the process.[56]

Political & Community Engagement

Most community members do not know about the role of the PUC and their right to intervene. Advocates have expressed that the funding of state & local programs focused on educating community members with the tools needed to navigate the regulatory system can be the biggest game-changer to increasing public participation and engagement within PUC cases.

Unclear & Lengthy Process

Participating in the process to intervene within PUC proceedings can be a complex process involving numerous players' participation. The lack of accessible information geared toward community members on how to maneuver the process to engage in intervening, hinders the ability of communities who are most impacted to participate in advocating for their necessities. Engaging within a case is often not feasible for working-class community members with the unrealistic time and financial constraints produced by the lengthy process.

Time & Location Accessibility

Accessibility appears to be the most profound barrier for frontline, BIPOC, and/or low-wealth communities to participate in proceedings. In general, many of these accessibility issues are correlated with the allocation of time resources, on-site location, and occurrence of proceedings that do not take into account typical work and family duties of community members.

Financial Constraints

Navigating the intervention process requires financial resources to cover legal representation, expert witness fees, production of documents, transportation costs, and more. While utility companies have access to a broader range of funds, frontline, BIPOC, and/or low-wealth communities might not and therefore often cannot participate without adequate financial support.[57]

Equitable Representation within the PUC

Frontline, BIPOC, and/or low-wealth communities often do not feel reflected or visible within proceedings. The composition of PUC commissioners and staff often lacks diversity in terms of gender, race, and/or socioeconomic background, which can lead to disparities or bias in decision-making with case outcomes.

Lack of Class & Race Consciousness

Currently, the language used by PUCs is not tailored to how community members want to be identified. For example, "historically-marginalized communities" may differ from "disproportionately-impacted communities" and "underserved communities". There are frontline and community-based organizations that may have a relevant understanding of how respective communities would like to be addressed.

In general, our regulatory systems do not incorporate a "people-first" approach regarding those most affected by their decisions. Without a class & race-conscious lens that promotes community input, language justice, and accessibility, the intervention process (and regulatory system as a whole) has and continues to ostracize frontline, BIPOC, and/or low-wealth communities.

Capacity Constraints from Organizations Representing Communities Intervening

Organizations that provide community members legal support in PUC proceedings have expressed financial, time, and workload capacity constraints in equipping community members to testify effectively. Building community buy-in is an extensive process for these organizations that often coincides with short timelines and limited resources as organizations combat the urgency to move from one case to another.[58]

56 Sarah Hay, "How to Engage the Public: OIRA's New Guidance to Agencies," GW Regulatory Studies Center (blog), August 1, 2023 https://regulatorystudies.columbian.gwu.edu/how-engage-public-oiras-new-guidance-agencies

57 Ililani Media, "PUC Equity Proceeding Must Upend Previous Approaches," July 11, 2023 http://www.ililani.media/2023/07/puc-equity-proceeding-must-upend.html

58 Ganesh Sitaraman, "Reforming Regulation: Policies to Counteract Capture and Improve the Regulatory Process" (Center for American Progress, November 1, 2016) https://www.americanprogress.org/article/reforming-regulation/

Spotlight on Massachusetts: Utility justice

In 2021, the Massachusetts Office of the Attorney General (AGO) convened a Stakeholders Working Group (SWG) to explore barriers to meaningful participation in energy decision-making. The SWG included representatives from organizations focused on local environmental justice, state climate action, and national environmental, renewable energy, and legal advocacy. The SWG produced a report in May 2023 with their findings, *Overly Impacted and Rarely Heard: Incorporating Community Voices into Massachusetts Energy Regulatory Processes*.[59] In the process of writing this report, the SWG conducted interviews and focus groups with 50 individuals, circulated a survey answered by 600 people, and met over 18 months in order to develop recommendations for overcoming barriers to participation in the energy regulatory process in Massachusetts as the state decarbonizes its energy system. The report makes recommendations for changes at the Massachusetts Department of Public Utilities (DPU) and the state's Energy Facilities Siting Board (EFSB).[60]

Procedural justice in the MA DPU and EFSB

The Overly Impacted and Rarely Heard report focuses predominantly on issues of procedural injustice within the regulatory process. Procedural justice "requires that traditionally excluded groups, frontline communities, and those otherwise marginalized due to the energy system work with policymakers to co-create and co-design a fair process for inclusion in energy decision-making." [61]

In the context of the DPU and EFSB, procedural justice requires transparency, resources, and accountability mechanisms on the part of the public agencies; and engagement, outreach, and consultation actions that bring in community voices to the decision-making process.

Outreach, Engagement, and Consultation

A group of recommendations from the report focuses on reforming the DPU and EFSB approach to public engagement, recommending that the DPU and EFSB align their processes and decision-making with the state Environmental Justice Policy in order to integrate environmental justice principles into all policymaking.[62] Recommendations from the SWG for improving outreach to low-income ratepayers and environmental justice populations include: revising how proceedings are publicized and promoted; requiring outreach and workshops before the proceeding begins; developing a public engagement framework that incorporates recognition justice[63] and allows for differences among communities; and following tenets of language justice, which require clear an inclusive language access protocols.

In addition, the report promotes adequate funding and continuous support for community outreach and input processes, so that community input is incorporated into decisions at the start of the decision-making process. The barriers to participating in formal proceedings are difficult to overcome for many communities and community groups. The SWG recommends that adjudications are supplemented or replaced, when possible, with workshops, information sessions, working groups, and conferences, which provide more opportunities for communication, education, and engagement.

59 Massachusetts Office of the Attorney General, Stakeholder Working Group, "Overly Impacted & Rarely Heard: Incorporating Community Voices into Massachusetts Energy Regulatory Processes," May 2023 https://www.mass.gov/doc/overly-impacted-and-rarely-heard-incorporating-community-voices-into-massachusetts-energy-regulatory-processes-swg-report/download

60 ibid.

61 Shalanda Baker, Subin DeVar, and Shiva Prakash, "The Energy Justice Workbook" (Boston, MA: Initiative for Energy Justice, December 2019) https://iejusa.org/wp-content/uploads/2019/12/The-Energy-Justice-Workbook-2019-web.pdf

62 Massachusetts Executive Office of Energy and Environmental Affairs, "Environmental Justice Policy," 2024 https://www.mass.gov/info-details/environmental-justice-policy

63 Recognition justice requires that individuals and groups participating in a decision-making process are not just tolerated, but respected, even when their perspectives diverge due to social, cultural, ethnic, racial, and gender differences. See Baker, DeVar, and Prakash, "The Energy Justice Workbook."

Transparency, Resources, and Accountability

The SWG identified a gap in existing information on energy affordability and reliability, and recommended that the DPU and EFSB create and regularly report on metrics related to energy burden, insecurity, and poverty of ratepayers. In addition to reporting on these new metrics of energy justice, the SWG recommends that DPU and EFSB commissioners and board members have a baseline understanding of how energy equity can, and should, be incorporated into their work. In order to further transparency and accountability, the SWG recommended that the DPU commissioners be required to deliberate in open meetings accessible to the public, and that the DPU and EFSB summarize or publish stakeholder comments and agency response when issuing decisions. In addition, recommendations include establishing an Environmental Justice Advocate and an Office of Public Participation within the DPU.

Disconnect with Massachusetts climate bill

The Massachusetts Climate Roadmap Bill (2021) requires the DPU to prioritize equity and affordability in addition to reductions in greenhouse gas emissions in the commission's decision-making, and for the EFSB to incorporate environmental justice principles.[64] In alignment with this requirement, the SWG recommended that the MA DPU and EFSB open "a generic policy investigation with the goal of revising its approach to regulation based on recent climate legislation," with the goal of "prioritizing equity and affordability," and "incorporating EJ [Environmental Justice] principles into procedures and decisions."[65] The report also notes that several PUCs in other states have initiated similar efforts to incorporate equity into their decision-making. For example, Colorado created an EJ Unit of the Colorado Department of Public Health & Environment in 2021, granted intervenor status for the Colorado Office of the Utility Consumer Advocate for matters of EJ, decarbonization, and just transition, required the Colorado PUC to maintain a website to track its equity initiatives through legislation.[66]

Some progress on aligning DPU and EFSB process with the environmental justice principles in the Climate Roadmap Bill has begun to take form. For example, the DPU's Order 20-80 requires non-gas alternatives to be considered for new gas infrastructure in the state, and removes cost recovery for promotional activities by local gas distribution companies in order to reduce the state's dependence on fossil gas.[67] In addition, the DPU opened an inquiry (Docket 24-15) on energy affordability for Massachusetts ratepayers, and in order to increase transparency, has made the public comments it receives available online.[68]

However, there are enduring environmental justice concerns with DPU and EFSB approaches to regulating energy infrastructure. The most prominent example is the state's continued support of a new substation in East Boston that is opposed by local environmental justice organizations, city councilors, and community members.[69] East Boston is a majority Latinx neighborhood with a long history of housing immigrant populations, and is located next to Logan International Airport.[70] The EFSB granted a special waiver for the utility constructing the substation, Eversource, to bypass the need for remaining state and local permits necessary for the project.[71] It is clear that the issues of community consultation and accountability raised in the 2021 SWG report remain relevant to the DPU and EFSB today, in spite of the progress made in certain areas of recommendations. State legislation has been introduced in partnership with the MA Environmental Justice Legislative Table[72] to reform the DPU and EFSB siting process in alignment with the report's recommendations.[73]

64 "Massachusetts Climate Roadmap Bill," Mass. Gen, Laws § 21N-1 (2021) https://malegislature.gov/Laws/SessionLaws/Acts/2021/Chapter8
65 Massachusetts Office of the Attorney General, Stakeholder Working Group, "Overly Impacted & Rarely Heard." p.17
66 Massachusetts Office of the Attorney General, Stakeholder Working Group, "Overly Impacted & Rarely Heard." p.67
67 Massachusetts Department of Public Utilities, "Department of Public Utilities Issues Order 20-08," December 6, 2023 https://www.mass.gov/news/department-of-public-utilities-issues-order-20-80
68 Massachusetts Department of Public Utilities, "DPU Issues Notice of Investigation on Energy Affordability for Massachusetts Ratepayers," January 1, 2024 https://www.mass.gov/news/dpu-issues-notice-of-investigation-on-energy-affordability-for-massachusetts-ratepayers
69 Brandon Truitt, "East Boston Residents Pressure Gov. Healey to Stop Construction of Eversource Substation," CBS News, March 22, 2023 https://www.cbsnews.com/boston/news/east-boston-pressures-gov-healey-stop-construction-eversource-substation/ GreenRoots, "Boston City Councilors & GreenRoots Announce the Passage of the #NoEastieSubstation," GreenRoots EJ, March 22, 2023 https://greenrootsej.org/news/boston-city-councilors-greenroots-announce-the-passage-of-the-noeastiesubstation
70 John Walkey, "East Boston and Power: An Environmental Justice Community in Transition," Union of Concerned Scientists (blog), October 31, 2019 https://blog.ucsusa.org/science-blogger/east-boston-and-power-an-environmental-justice-community-in-transition/
71 Miriam Wasser, "State Clears East Boston Substation for Construction without 14 Local Environmental Permits," WBUR, November 30, 2022 https://www.wbur.org/news/2022/11/30/east-boston-substation-efsb-greenroots-clf-permits
72 The MA Environmental Justice Legislative Table is comprised of environmental justice organizations, many of whom were part of the SWG that authored the Overly Impacted and Rarely Heard report. The MA EJ Legislative Table works with legislators to advance EJ policy at the state level.
73 Adrian C. Madaro, "An Act Relative to Energy Facilities Siting Improvement to Address Environmental Justice, Climate, and Public Health," Pub. L. No. H.3187 (2023) https://malegislature.gov/Bills/193/HD4024

Cross-state Similarities

There are parallels between the barriers identified in Massachusetts and the procedural injustice barriers found in Michigan and Colorado. The systemic barriers within the intervention process identified in the Michigan and Colorado case study section above generally align with notions of procedural injustice. Lack of technical translation and language barriers; accessibility for meeting times and locations; the funding gap for regulatory education initiatives; financial constraints; the complexity of the intervention process; and capacity constraints for participating in the regulatory process are all barriers identified through interviews that disproportionately affect frontline communities and organizations. Similarly, in Massachusetts, the SWG's report focused on barriers to participation, or examples of procedural injustice, including key transparency, translation, accessibility, engagement, and accountability injustices.

Recommendations to improve accessibility and equity in the regulatory process

The policy recommendations outlined in this guide are primarily intended as a resource for advocates, community organizations, and frontline groups working to advance energy justice and equity through regulatory processes. However, these recommendations may also provide valuable insights for regulators, PUC staff, legislators, and policymakers seeking to improve accessibility and promote inclusive public participation.

For advocates, these recommendations offer concrete strategies to address systemic barriers and inequities that too often hinder marginalized communities' meaningful engagement in utility regulation and planning. By implementing measures like multilingual services, race-conscious framing, and expanded intervenor compensation, the regulatory arena can become more open and welcoming to diverse stakeholder voices.

At the same time, utility regulators, staff, and state legislators may find these recommendations instructive for proactively reforming processes, requirements, and institutional cultures to better serve the needs of all ratepayers equitably. This should not serve as a substitute for hearing from impacted community members directly or consulting with organizations that represent them, however. The democratic principles of public utility regulation demand accessible avenues for communities disproportionately impacted by energy decisions to substantively influence those decisions.

Improving Access and Community Engagement Using a "People-first" Approach

Providing ***multilingual and language-access services*** within the PUC:

- Adopt multilingual language access services tailored to state or local census demographics with the inclusion of individuals whose native or primary/secondary language is American Sign Language
- Provide oral on-site interpretation services between the state's PUC and individual(s)
- Translation of vital documents into the most common non-English languages spoken within the state
- Create a language accessibility plan to be developed by the state's PUC with guidance from a working group of frontline, BIPOC, and/or low-wealth entities/individuals
- Create language access coordinator positions within the PUC tasked with ensuring compliance of language-access services

Operating through a ***class and race-conscious lens***:

- Implement virtual public hearings to allow public participants to testify remotely
- Hold public hearings during working-class friendly hours (e.g., before or after standard working hours) to optimize public participation
- Provide travel stipends or incentives as a public travel reimbursement (e.g., bus, subway, railway fare)

Creating a ***community outreach and engagement-focused department*** within the PUC tasked with:

- Developing meaningful relationships with, buy-in from, and feedback from the communities most affected by energy decisions
- Producing language justice-oriented external education content to demystify the PUC and its procedural processes
- Holding equity-focused workshops, webinars, and town halls to provide space for community members to interact with their state's PUC

Expanding access to ***intervenor compensation*** programs:

- Create or expand access to programs where community representatives and public advocate are compensated by the state for their involvement in regulatory procedures of public interest

Democratizing Public Utility Commissions

Beyond these pillars for policy recommendations, public participation within the regulatory system as a whole cannot indeed be equitable without an intersectional transition to clean energy that emphasizes redressing generational harms faced by frontline, BIPOC, and/or low-wealth communities. To learn more about the Just Transition framework design, we recommend Climate Justice Alliance's handout on the principles of the model.[74] By dismantling core foundations of injustice (e.g., racial capitalism and colonialism), we can create just pathways for systematically oppressed communities to thrive.

Shifting the demographic make-up of the PUC from one that is majority White, male, and mid/high-wealth individuals to one that is reflective of the communities most affected by energy decisions.

- Explore whether elected commissioners prioritize energy justice and frontline, BIPOC, and low-wealth communities in their decisions compared to appointed commissioners.
- Establishing an equity oversight committee composed of frontline, BIPOC, and low-wealth organizations to address systemic barriers and install accountability measures toward members of the PUC

Expansion of the PUC to include mandatory seat reflection of frontline, BIPOC, and low-wealth communities

- Inclusion of mandatory equity seats that are designed to reflect the interests of communities most affected by energy decisions, such as an Environmental Justice or Youth seat prioritized to a community-facing member.

74 Climate Justice Alliance, "Just Transition: A Framework for Change," https://climatejusticealliance.org/just-transition/

Glossary of Common Energy Justice & Utility Regulation Terms

ADJUDICATORY PROCEEDINGS: A legal process where a judge or decision-maker listens to evidence and arguments from both sides to decide a case.

BASELOAD POWER: The minimum amount of electricity that a utility or distribution company must provide to its customers at a steady rate over a given period of time.

BIPOC: Stands for Black, Indigenous, and People of Color and is intended to highlight the unique relationship to whiteness that Indigenous and Black people have, which shapes the experiences of and relationship to white supremacy for all people of color within a U.S. context.

CAPITAL INVESTMENTS AND "CAPEX BIAS": Capital investments refer to the funds allocated by utility companies or energy providers for acquiring, maintaining, and upgrading physical assets. These assets include power plants, transmission lines, substations, and other infrastructure essential for the generation, transmission, and distribution of energy. 'CapEx bias' is a term used to describe a tendency within the utility industry to favor capital expenses (CapEx) over other kinds of expenses, such as operational expenses, because capital expenses help investors earn a profit.

CLASS CONSCIOUSNESS: Refers to the awareness and understanding that individuals have about their social and economic class, as well as their shared interests and common struggles with others in the same class. It involves recognizing the differences in power, wealth, and opportunities between different social classes and often leads to a sense of solidarity and collective action among members of a particular class to pursue their common interests and address social inequalities.

CLIMATE JUSTICE: The remediation of the impacts of climate change on poor people and people of color, and compensation for harms suffered by such communities due to climate change.

COMMUNITY SOLAR: A system through which local solar facilities are shared among community subscribers who receive credit on their electricity bills for the energy generated. Some community solar programs also allow communities to own energy produced right in their own communities.

CONTESTED PROCEEDING (SEE ALSO, UNCONTESTED PROCEEDING): In the context of a utility commission, this refers to a formal process in which the interests, rights, or obligations of parties are disputed and require adjudication. This type of proceeding typically involves a structured process of hearings, evidence presentation, and legal arguments before a decision-making body, such as a public utility commission. During these proceedings, stakeholders—including utility companies, consumers, advocacy groups, and regulatory bodies—may present testimony, cross-examine witnesses, and submit evidence to support their positions.

CUSTOMER METER: Meters measure how much energy is consumed. Some electric utilities are updating their meters to "smart meters," which allow for two-way communication, and have much more granular and real-time information, whereas historically, meter readings have occurred about once per month.

DEMAND CHARGES: Under some rate structures, utility customers are charged based on the maximum amount of electricity they use (a.k.a., peak demand). Rate structures with demand charges are common with commercial and industrial customers. A demand charge is often based on the customer's highest electricity use during a particular time interval (often 15 minutes over the course of a month), over which residential customers may have little control.

DISCONNECTION OR SHUTOFF: Occurs when a household or a customer's supply of electricity, gas, or another form of energy is intentionally disconnected or turned off by the energy provider due to non-payment or other reasons.

DISTRIBUTED ENERGY RESOURCES (DER): Generally small-scale electricity generation or storage technologies located close to the point of use. DERs can include solar panels, wind turbines, energy storage systems, combined heat and power systems, electric vehicles, and demand response programs. DERs can enhance grid reliability, provide backup power, reduce energy costs, and integrate renewable energy sources. Benefits include improved grid resilience, reduced transmission losses, reduced environmental harms, ratepayer savings, and energy democracy outcomes. DERs are key to modernizing the energy grid and promoting a flexible, efficient, and sustainable energy system.

DISTRIBUTED GENERATION (DG): Also called on-site generation or decentralized generation, DGs are the energy generation components of DERs – specifically creating electricity from sources that are near the point of consumption, as opposed to centralized generation sources such as large utility-owned power plants. DG usually refers to rooftop or community solar. Distributed generation systems have a variety of benefits including reducing the amount of energy lost in transmitting electricity, because the electricity is generated near the point of consumption, often even in the same building or facility.

DISTRIBUTION LINES: Connected to the other side of transmission lines and step-down transformers are the distribution lines, which carry lower voltage electricity shorter distances (i.e. the last few miles, to the grid's distribution system customers). These are the wires that connect customers to the grid and supply them with electricity.

DOCKET: Refer to official records or lists that document and organize information about specific regulatory matters or proceedings. These records include details about proposed regulations, rulemaking processes, public comments, and relevant documents related to regulatory decisions. Dockets help keep track of and make information accessible for public participation, transparency, and regulatory oversight.

ENERGY BURDEN: The percentage of household income that goes towards energy costs. The lower your income, the more you spend on energy as a percentage of your income. As such, high energy costs disproportionately impact low-income communities with a high energy burden.

ENERGY INSECURITY: Lacking reliable access to uninterrupted energy at an affordable price. Energy insecurity connects intimately to energy burden and utility disconnections.

ENERGY JUSTICE: Refers to the goal of achieving equity in both the social and economic participation in the energy system while also remediating social, economic, and health burdens on those disproportionately harmed by the energy system.

ENVIRONMENTAL JUSTICE: The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

ENVIRONMENTAL RACISM: A type of inequality where people in communities of color face a disproportionate risk of exposure to pollution and related health conditions.

FEDERAL ENERGY REGULATORY COMMISSION (FERC): An independent federal agency which regulates the interstate transmission and wholesale sale of electricity, oil, and fossil gas.

FRONTLINE COMMUNITY: Those that experience the "first and worst" consequences of climate change.

INCOME-ELIGIBLE DISCOUNT RATES: Reduced utility rates offered to low-income households to make essential energy services more affordable. These discounted rates are designed to alleviate the financial burden on economically disadvantaged consumers by providing them with access to electricity, gas, and other utility services at lower costs. Eligibility for these programs is typically determined based on household income levels, often in relation to federal poverty guidelines or state-specific criteria.

INDEPENDENT SYSTEM OPERATOR (ISO): An organization that oversees the coordination, control, and monitoring of the electrical power system within a specific geographic area. ISOs manage grid reliability, facilitate competitive wholesale electricity markets, and balance real-time supply and demand to maintain grid stability. They operate independently from electricity generators and sellers to ensure impartial grid access and fair market operations. Examples include the California Independent System Operator (CAISO) and the New York Independent System Operator (NYISO).

INFRASTRUCTURE UPGRADES: The improvements, modernization, and expansion of the physical assets and systems used to generate, transmit, and distribute electricity and gas. These upgrades can be essential for enhancing the reliability, efficiency, and capacity of the utility network to meet current and future energy demands. Infrastructure upgrades can include replacing aging equipment, installing advanced technologies, expanding transmission and distribution lines, and integrating renewable energy sources.

INTEGRATED RESOURCE PLAN: A process in which utilities forecast future electricity use and evaluate and propose their preferred options for meeting the forecasted need.

INTERVENE: To intervene in the context of energy and utility regulation means to formally participate in a regulatory proceeding or case before a public utility commission. Intervening allows stakeholders to present evidence, provide testimony, and make arguments regarding the issues being considered. This participation helps ensure that the decision-making process considers a diverse range of perspectives and interests.

INTERVENOR COMPENSATION: Refers to grants or reimbursement provided to individuals or groups who participate as intervenors in regulatory proceedings. This compensation is intended to cover the costs of their involvement, including legal fees, expert witness fees, and other related expenses. The purpose of intervenor compensation is to encourage meaningful participation from a broad spectrum of stakeholders, particularly those who might otherwise lack the resources to engage in complex regulatory processes.

INVESTIGATION: A formal inquiry conducted by a regulatory body, such as a public utility commission, to examine specific issues or concerns related to utility operations, practices, or policies. Investigations can be initiated in response to complaints, observed irregularities, or regulatory requirements. They aim to uncover facts, assess compliance with regulations, and ensure the proper functioning of the utility services.

JUST AND REASONABLE: A legal standard used in regulatory proceedings, particularly in rate cases before public utility commissions, to evaluate whether utility rates, terms, and conditions are fair and equitable to both consumers and utility companies. This standard ensures that the rates charged by utilities are sufficient to cover the costs of providing service, including a reasonable return on investment, while protecting consumers from excessive charges. The interpretation of what constitutes just and reasonable is determined on a case-by-case basis through evidence and arguments presented during regulatory hearings, with the goal of balancing the financial health of utility companies with the public's need for affordable and reliable utility services.

LANGUAGE JUSTICE: A key practice used in social justice movements to create shared power, practice inclusion, and dismantle traditional systems of oppression that have traditionally disenfranchised non-English speakers.

LOW-INCOME ASSISTANCE: These programs provide funding and/or other assistance for low-income residential customers who are unable to pay their electric bills.

LOW-WEALTH COMMUNITY: Refers to an area characterized by a relatively low level of financial & economic resources among its residents. These communities often face systemic challenges and may have limited access to essential services, educational opportunities, healthcare, and infrastructure.

MARGINALIZED COMMUNITIES/POPULATIONS/PEOPLES: Communities denied involvement in mainstream economic, political, cultural and social activities. Marginalization or social exclusion deprives a group from access to basic rights and participation in decision-making. Marginalized communities include, but are not limited to, frontline communities, low income and/or working class communities, and those historically disenfranchised by racial and social inequity (i.e. minority identities based on race, ethnicity, sex, gender, sexual orientation, and ability status).

MICRO-GRID: A small-scale, localized energy system that can generate, store, and distribute electricity independently or in conjunction with the main power grid. It's designed to serve a specific area, such as a neighborhood, campus, or remote community. Micro-grids can use various energy sources, including solar panels, wind turbines, and batteries, to provide reliable and sustainable electricity.

MONOPOLY: In the utility sector, a monopoly refers to a situation where a single utility company holds exclusive control over the sales of essential services, such as electricity, natural gas, or water, within a specific geographic area. Regulatory oversight is typically employed to ensure that monopolistic utilities operate in the public interest, balancing consumer protection with the need for sustainable and reliable utility services.

PARTY STATUS: Refers to the legal standing granted to individuals, organizations, or entities to participate in regulatory proceedings before public utility commissions or other regulatory bodies. Parties with party status have the right to present evidence, provide testimony, submit arguments, and cross-examine witnesses during hearings or investigations.

PEAKING POWER: Refers to electricity generation capacity that is specifically designed and operated to meet periods of high electricity demand, known as peak demand. Peaking power plants are typically used intermittently during times of peak demand, such as hot summer days or cold winter evenings when electricity usage is at its highest.

PEOPLE-FIRST: An approach or philosophy that prioritizes the well-being, needs, and rights of individuals before anything else. It emphasizes considering the interests and dignity of people as the primary focus when making decisions or developing policies.

POLITICAL ACTIVITIES: Can encompass a broad range of efforts undertaken by utility companies, industry associations, and other stakeholders to influence government policies, regulations, and decision-making processes related to the energy and utility sectors. These activities may include direct lobbying of elected officials, campaign contributions to political candidates or parties, participation in political action committees (PACs), and membership dues to industry trade groups engaged in lobbying activities. While some political activities focus on shaping legislation or regulatory policies, others aim to influence public opinion, support specific candidates, or advocate for industry interests. Transparency and accountability in political activities are essential to ensure that utility companies operate in the public interest and maintain public trust. Disclosure requirements for political spending, including industry association dues used for lobbying, are often subject to regulatory oversight to promote transparency and prevent undue influence on the regulatory process.

PROCEEDING (SEE ALSO "DOCKET"): Refers to a formal process initiated by a public utility commission or regulatory agency to address specific issues, such as rate cases, rulemakings, investigations, or licensing matters. Proceedings are often identified by a docket number and involve various stages, including public notice, hearings, discovery, and the issuance of orders or decisions.

PUBLIC COMMENTS: Submissions made by individuals, organizations, or entities to express opinions, concerns, or recommendations regarding proposed regulatory actions or policies. These comments are typically solicited by public utility commissions or regulatory agencies as part of the rulemaking process or other regulatory proceedings.

PUBLIC HEARING: A formal meeting or session conducted by a public utility commission or regulatory agency to gather input, testimony, and feedback from stakeholders and the general public on specific regulatory issues or proposals. Public hearings are typically held as part of regulatory proceedings, such as rate cases, rulemakings, or licensing matters, and provide an opportunity for individuals, organizations, and entities to voice their opinions, concerns, or support regarding proposed regulatory actions.

PUBLIC UTILITY COMMISSION (PUC): A Public Utility Commission (PUC), also known as a **Public Service Commission (PSC)** in some states, is a group of people who work under the executive branch of state government to regulate essential services such as electricity, water, and gas. It is the PUCs primary role to ensure that these services are delivered to customers in a safe, reliable and reasonably priced way.

PUBLIC UTILITY COMMISSIONER: The role of a public utility commissioner is present in all 50 states at the state level with their role centered around overseeing the functions of the PUC in regulating utility companies. The PUC operates as a board with multiple members.

RACIAL JUSTICE: A vision and transformation of society to eliminate racial hierarchies and advance collective liberation, where Black, Indigenous, Latinx, Asian Americans, Native Hawaiians, and Pacific Islanders, in particular, have the dignity, resources, power, and self-determination to fully thrive.

RATE CASE: A formal proceeding conducted by a public utility commission to review and determine the rates that a utility company is allowed to charge customers for the services it provides, such as electricity, natural gas, or water. During a rate case, the utility company presents evidence and justifications for proposed rate changes, including factors such as operating costs, capital investments, and expected returns on investment. Consumer advocates, industry stakeholders, and regulatory staff may also participate in the proceeding to ensure that the rates set by the commission are fair, reasonable, and in the public interest.

RECOVERY: In the context of utility regulation, refers to the process by which a utility company recovers its costs, investments, and expenses associated with providing utility services to customers. This can include the recovery of expenses related to infrastructure upgrades, maintenance, fuel costs, and regulatory compliance. Utilities typically seek to recover these costs through rates charged to customers, subject to approval by the relevant regulatory authority. Rate recovery mechanisms may vary depending on regulatory frameworks and can include mechanisms such as cost-of-service rates, rate riders, or performance-based incentives.

REGIONAL TRANSMISSION ORGANIZATION (RTO): An independent entity responsible for overseeing the operation and coordination of the transmission grid within a specific geographic region or interconnection. RTOs manage the transmission of electricity, ensure grid reliability, and facilitate the efficient and competitive operation of wholesale electricity markets. They also oversee transmission planning, congestion management, and the integration of renewable energy resources into the grid. RTOs play a crucial role in promoting grid reliability, fostering competition, and facilitating the transition to a more sustainable and resilient energy system.

REGULATORY CAPTURE: Refers to a phenomenon where regulatory agencies tasked with overseeing industries, such as utilities, become unduly influenced or controlled by the entities they are supposed to regulate. This influence can occur through various means, including lobbying, campaign contributions, revolving-door employment between regulators and industry, and informational asymmetries favoring industry interests. Regulatory capture can result in regulators prioritizing the interests of regulated companies over the public interest, leading to decisions that favor industry profits at the expense of consumers, environmental protection, or equitable access to utility services. Identifying and mitigating regulatory capture is essential for ensuring effective regulation and promoting energy justice in utility regulation.

RENEWABLE ENERGY: Energy that comes from naturally occurring sources that are continuously replenished, such as sunlight, wind, rain, tides, and geothermal heat.

RENEWABLE PORTFOLIO STANDARD (RPS) OR RENEWABLE ENERGY STANDARD (RES): An RPS or RES requires electricity suppliers to procure a minimum amount of electricity from eligible renewable or clean energy resources. The primary purpose of an RPS or RES is to increase the development and use of renewable or clean energy sources for electricity generation.

RESTRUCTURED MARKET (SEE ALSO VERTICALLY INTEGRATED MARKET): A restructured market, also known as a deregulated or competitive market, is a market structure in the energy sector where the generation, transmission, and distribution of electricity are operated by separate entities, fostering competition among suppliers and allowing consumers to choose their electricity provider. In a restructured market, utilities are typically unbundled, with generation companies competing to sell electricity to retail customers through competitive markets or contracts. This contrasts with vertically integrated markets, where a single utility company owns and controls all aspects of electricity supply, from generation to distribution.

RETAIL SERVICE: Refers to the provision of electricity, natural gas, or other utility services directly to end-use customers, such as residential, commercial, or industrial consumers. In regulated utility markets, retail service is often provided by vertically integrated utility companies, which own and operate the infrastructure necessary to deliver utility services to customers within their designated service territories. In deregulated or competitive markets, retail service may be provided by multiple suppliers, allowing customers to choose their service provider based on factors such as price, service quality, and environmental preferences.

RETURN ON EQUITY (ROE): A financial metric used to measure the profitability and efficiency of an investment, expressed as a percentage of the equity capital invested. In utility regulation, ROE is an important but often misused factor in determining the allowed rate of return that utility companies are permitted to earn on their invested capital, such as infrastructure investments in power plants, transmission lines, or distribution systems. The allowed ROE is typically set by regulatory authorities as part of the rate-setting process and can be important for regulators and stakeholders to scrutinize in order to balance the need for utilities to earn a reasonable return with the interests of consumers in maintaining affordable utility rates.

RULEMAKING: The process by which regulatory agencies establish, amend, or repeal rules, regulations, or standards governing the conduct of entities within their jurisdiction. In the context of utility regulation, rulemaking may involve the development of rules related to rate-setting, service quality standards, environmental regulations, or market rules governing competitive electricity markets. Rulemaking procedures typically involve public notice, comment periods, hearings, and the issuance of final rules by the regulatory agency, providing stakeholders with an opportunity to participate in the regulatory process and provide input on proposed regulations.

STANDING: Refers to the legal right of an individual, organization, or entity to participate as a party in regulatory proceedings before a public utility commission or regulatory agency. To have standing, a party must demonstrate a sufficient interest or stake in the outcome of the proceeding, such as being directly affected by the issues under consideration. Parties granted standing typically have the right to present evidence, provide testimony, cross-examine witnesses, and advocate for their interests during hearings or investigations, ensuring that the regulatory process considers a diverse range of perspectives and interests.

SYSTEMIC BARRIER: A persistent and often deeply ingrained obstacle or hurdle that exists within a system or institution, making it difficult for certain individuals or groups to access opportunities, resources, or benefits. These barriers are typically the result of longstanding practices, policies, or biases that disadvantage or discriminate against specific people based on characteristics like race, gender, or socioeconomic status.

TRANSMISSION LINES: The transmission network consists of higher voltage lines – typically 115 kV to 500 kV (including lines that connect generation to the bulk transmission system – "gen-tie" lines); the distribution network consists of lower voltage lines typically between 2 kV and 35 kV. Transmission lines are carried on larger towers, such as the ones paralleling Interstate 5 through much of the Willamette Valley, while distribution lines are often carried on smaller wooden poles like those running up and down the streets of many residential neighborhoods.

UTILITY COMPANY: A business or organization that provides essential public services such as electricity, natural gas, water, or sewage disposal to homes, businesses, and institutions.

VARIABLE POWER: Refers to electricity generation from renewable energy sources, such as solar and wind, that is subject to fluctuations or variability based on factors like weather conditions or time of day.

VERTICALLY INTEGRATED MARKET: A market structure in the energy sector where a single utility company owns and controls all aspects of electricity supply, from generation to transmission and distribution. In a vertically integrated market, the utility company is responsible for owning and operating power plants, transmission lines, and distribution systems, as well as selling electricity directly to retail customers within its designated service territory. This contrasts with restructured or deregulated markets, where generation, transmission, and distribution functions are operated by separate entities, fostering competition among suppliers.

WHOLESALE MARKET: A marketplace where electricity is bought and sold in bulk quantities by wholesale market participants, such as electricity generators, wholesale suppliers, and large industrial consumers. In a wholesale market, electricity is traded at wholesale prices through organized markets or bilateral contracts, typically conducted through electricity exchanges or power trading platforms.

TEN-YEAR PLAN

Reducing the Energy Burden in Oregon Affordable Housing

OREGON DEPARTMENT OF ENERGY

Oregon Public Utility Commission

Oregon Housing and Community Services

GOAL OF THE PLAN

Reduce the energy burden on the low-income population in Oregon, while prioritizing energy efficiency to achieve that reduction.

Acknowledgements

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Introduction

On November 6, 2017, Governor Kate Brown signed Executive Order 17-20[1], which contains specific directives to State agencies to improve energy efficiency and support actions to reduce greenhouse gas emissions in the State of Oregon. One of these directives, Section 5(B), specifically addressed affordable housing.

> 5(B). Prioritizing Energy Efficiency in Affordable Housing to Reduce Utility Bills. ODOE, PUC, and Oregon Housing and Community Services (OHCS) are directed to work together to assess energy use in all affordable housing stock and develop a ten-year plan for achieving maximum efficiency, as well as a continuum of efficiency levels up to maximum efficiency, in affordable housing across the state by January 1, 2019. As part of the assessment, the agencies shall consider new resources and best practices and shall seek assistance from Energy Trust of Oregon and Bonneville Power Administration. OHCS is directed to expand its existing multi-family energy program and green energy path requirements, including a manufactured home replacement program through pilot programs and initiatives, while considering multiple values from energy efficiency improvement, such as health and habitability.

This document serves to introduce and describe the affordable housing assessment that was developed in response to this directive, as well as to outline the ten-year plan to achieve maximum efficiency in affordable housing across the state.

The Executive Order also directed the development of the multi-agency Built Environment Efficiency Working Group (BEEWG) to implement the directives in the Executive Order. The information contained within this document was developed by the Executive Order 5(B) subcommittee of BEEWG. This subcommittee included members from Oregon Housing and Community Services (OHCS), the Oregon Public Utility Commission (OPUC), the Oregon Department of Energy (ODOE), the Energy Trust of Oregon, and Bonneville Power Administration (BPA).

This subcommittee recognized that while this version of the ten-year plan is vital to start the conversations required to achieve maximum efficiency in affordable housing, it is also important to design it to be a living document. Over the next ten years, markets and technology will evolve and adapt, and this document is designed to be updated as those changes occur. Additionally, there were gaps in available data identified during the creation of the affordable housing assessment, and it is this group's intention to update the plan as more data becomes available.

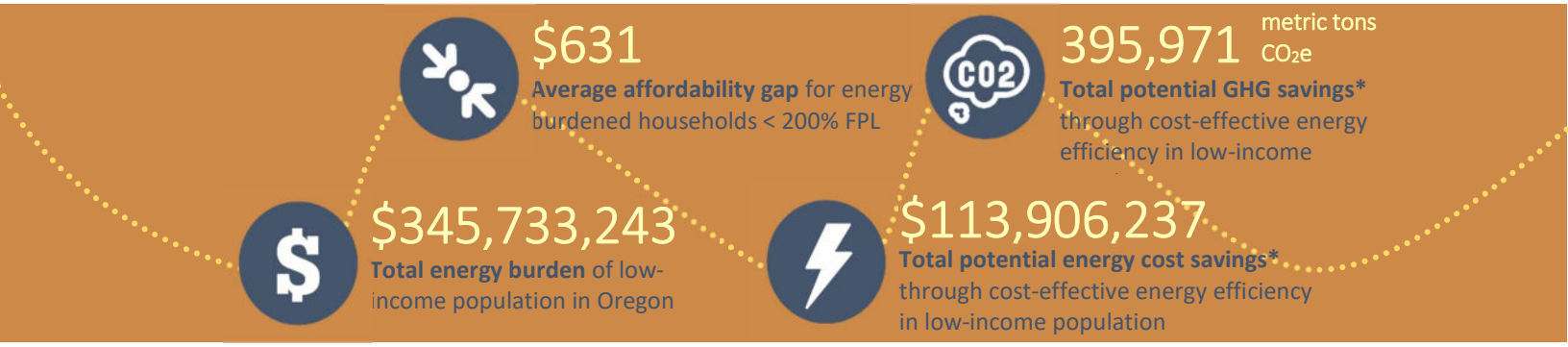
Executive Summary

The Executive Order directed the creation of two main deliverables associated with subsection 5(B) by January 1, 2019 – an affordable housing assessment and a ten-year plan. The affordable housing assessment has been published and is available online at http://bit.ly/OHCS_AHA. This map contains multiple layers of information that can be used to inform efforts in reducing the energy burden on the low-income population in Oregon. Examples of the types of information available include identification of the regions with the greatest need and those with the greatest gaps in existing resources.

This document serves as the second deliverable, the ten-year plan. The first section presents a set of definitions to help readers understand the language used in the plan. Next, it provides details about the development of the assessment, including known limitations and key findings. Lastly, the initial version of the ten-year plan is outlined, including the overarching goal of the plan, along with objectives, strategies, and tasks recommended to help guide the first steps toward achieving that goal.

The results of the assessment show that the energy affordability gap of low-income Oregonians is extensive – nearly $350 million per year. Energy efficiency can significantly reduce that energy burden, and result in improved health of the occupants, habitability of their home, and significant greenhouse gas savings. However, while energy efficiency can alleviate a substantial portion of the energy burden, it cannot solve the energy burden problem alone.

Reducing the energy burden on the low-income population in Oregon is a huge undertaking; an undertaking that will require collaboration between multiple agencies, funding streams and stakeholders. This plan provides recommendations for the first steps that should be taken to orient the state toward a path to success. But, the success of this plan relies on persistent attention and follow-through from stakeholders involved at all levels.



** Potential savings in this paper can best be described as the annual savings potential available by the end of the ten-year period. Details can be found in the Potential Savings Primer section.*

Table of Contents

Section 1: Background

Definitions

Certain terms are defined in this section to assist in the understanding of the plan as these terms do not have universally accepted definitions. These definitions are subject to change in future revisions of the plan, as the market evolves and understanding of the market improves.

Affordable Housing

Often, affordable housing is used interchangeably with low-income housing. For this plan, these two terms have distinct definitions. The types of households included in these definitions include owner-occupied and renter-occupied units in single family, multifamily and manufactured homes.

Please note that certain special needs properties were not included in this assessment and the plan, including homeless shelters, group homes, transitional housing, assisted living facilities, residential care facilities, and on-farm housing.

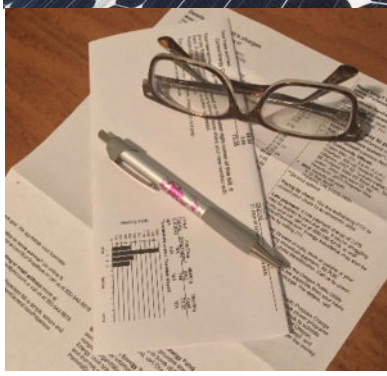
Affordable housing is defined as housing that is affordable to the low-income household living in the unit. A unit is considered affordable if the housing expenditures are 30 percent or less of the household income. These housing expenditures include not only rent or mortgage payments, but also utility bills and, for home-owners, costs such as property taxes. For the initial version of the assessment and plan, the OHCS inventory of multifamily and manufactured homes represents the only known affordable housing in the State.

Low-income housing is defined as housing occupied by a household with income less than or equal to 80 percent of the area median income (AMI). Per this definition, 41 percent of Oregon households (~634,000 households) are considered low-income. In comparison, extremely-low-income households, per HUD's definition (households with incomes less than or equal to 30 percent of the AMI), account for about 14 ½ percent of Oregon households (~222,000 households)[2].

Energy Burden

Energy burden is defined as the percent of household income spent on energy bills.

Energy burden is a key component to determining if a housing unit is affordable. The most commonly used metric is that an affordable energy burden must be no higher than six percent of the household's income[3].



Energy affordability gap is the difference between a household's actual energy costs and an "affordable" energy burden level equal to six percent of the household's income.

It is well documented that the average energy burden of low-income households and of communities of color far exceeds the average energy burden on median-income households[4]. The census data shows that on a national average, low-income households have an energy burden three times higher than non-low-income households. This results in less money for these low-income households to spend on other essential needs, such as food, transportation and healthcare.

There are multiple methods available to reduce energy burden, each having advantages and drawbacks*. Executive Order 17-20 directed this plan to prioritize energy efficiency in reducing energy burden on low-income households, and therefore most of this plan focuses on that method. However, multiple options for consideration outside of this plan are outlined below.

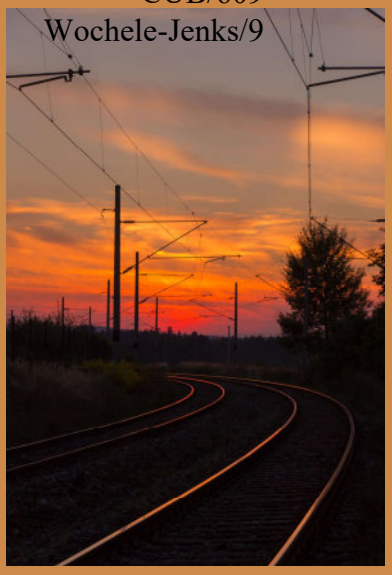
Energy Efficiency

Energy efficiency reduces energy burden by reducing the amount of energy required to provide the same level of energy services (e.g., heating) to the home, thereby reducing the household's energy bills. One of the main advantages of energy efficiency as a mechanism to reduce energy burden is that it results in persistent savings, and therefore persistent reduction in energy burden, while also providing non-energy benefits to the household, such as improved health, comfort and safety. It also increases the resiliency of the household to fluctuations in utility costs. Additionally, energy efficiency can reduce habitability issues in the unit and enhances long-term housing stability. Energy efficiency also results in reduced greenhouse gas emissions and increased health at a societal level.

**It is important to note that none of these methods are infallible. Each method, if not designed properly, could discourage energy conservation. It is possible these methods of reducing energy burden may result in an increase in energy use due to households being able to now afford to increase the comfort of their homes, for example being able to heat their homes to a more reasonable temperature during the winter.*

Transportation burden

This plan currently focuses on reducing the energy burden associated with housing-related energy use. However, transportation is the second-highest expenditure for households in the United States after housing expenditures, and, like the housing energy burden, low-income populations tend to have higher transportation energy burdens than the average household[5]. While not directly addressed elsewhere in this plan, it is recommended that accessibility of public transportation, electric vehicle charging stations, and proximity to employment opportunities and everyday services be considered when planning new affordable housing developments. Additionally, it is recommended that any new transportation infrastructure planning includes an analysis of how to better serve existing affordable housing developments to reduce the burden on those who can least afford it.



Energy Assistance

Energy assistance reduces energy burden by providing subsidies to assist low-income households in paying utility bills. The source of these subsidies are typically state, federal and utility dollars. One of the main advantages of energy assistance is that it can provide immediate, emergency assistance to low-income households. However, this mechanism does not result in persistent savings, as energy assistance is typically provided on an as-needed basis and requires reapplication for future assistance. It also does not result in improved health, comfort or safety of the household, or reductions in greenhouse gas emissions.

Renewable Energy

Renewable energy reduces energy burden by reducing the amount of energy the household must buy from the electrical grid. Like energy efficiency, renewable energy's advantages include persistent savings to the household and the societal benefit of greenhouse gas emission reduction. Depending on the technology, it also potentially has the added benefit of increasing the resiliency of the residence. However, it does not directly impact the household's health, comfort or safety, nor the habitability of the unit. It is also important to recognize that renewable energy, such as solar, is more expensive than energy efficiency. As such, it is generally accepted that when installing renewable energy systems, it is much more cost effective to first improve the energy efficiency of the unit.

Reduced Utility Rates

Reduced utility rates reduce energy burden by lowering the cost of energy for low-income households. For the State of Oregon, this would require a restructuring of utility rates to charge rates that reflect affordability barriers to low-income households. Other states have developed Percentage of Income Payment Programs or rate discount programs to address this

affordability gap, and there is currently a docket at the Oregon Public Utility Commission, UM 1787[6], to investigate a Percentage of Income Payment Program in Oregon.

Reducing a low-income household's utility rate would have a profound effect on reducing their energy burden. However, it does not provide any of the additional benefits of health, comfort, safety, resiliency, or greenhouse gas emission reductions.

Maximum Efficiency

Per the Executive Order, this ten-year plan should focus on achieving "maximum efficiency, as well as a continuum of efficiency levels up to maximum efficiency in affordable housing". The working group presents two options for defining maximum efficiency – the efficiency required to obtain technical achievable potential, or the efficiency required to obtain the cost-effective achievable potential, both defined below. More information on how these two options were quantified can be found in Appendix A: Potential Savings Methodology.

To put the savings potentials discussed below in context, the existing low-income annual consumption across Oregon was estimated using data from NEEA's Residential Building Stock Assessment (RBSA)[7]. This was done by first calculating the average annual electricity and gas use for the low-income Oregon building stock included in the RBSA using consumption data and case weights for individual units. Then the weighted average consumption per unit was multiplied by the number of low-income units in Oregon to approximate the electric and gas consumption of low-income housing across the State. This calculation, which serves only as a rough approximation of the low-income load across Oregon, results in an estimated 6.7 billion kWh of annual electricity use, and 350 million therms of annual natural gas of existing energy use. This analysis was done separately from the Potential Savings Methodology and did not influence the results of that study in any way.

Non-energy benefits

In addition to reducing energy usage in a home, energy efficiency upgrades can improve the health, safety, and finances of the occupants. Health benefits include improved indoor air quality, which among other things reduces the frequency of asthma attacks, and lowered risk of illness, due to the indoor spaces being warmer and drier. Energy efficient homes require less maintenance and are safer, with reduced carbon monoxide poisoning and fewer fires. Occupants benefit financially from reduced doctors' bills, fewer sick days from work, and lower water and energy bills. Energy efficiency upgrades can improve housing stability and are an opportunity to reduce some the barriers many low-income households, including communities of color, veterans and seniors, face in their daily lives.

Technical Achievable Potential

The *technical achievable potential* is the amount of energy use that efficiency can theoretically displace and is often referred to as maximum achievable potential. The technical achievable potential represents the sum of energy savings resulting from possible energy efficiency upgrades, including heating, cooling, appliances, weatherization, lighting, behavioral, and others measures that could theoretically be installed given the vintage, type, and condition of the unit. Technical achievable potential accounts for real-world barriers to convincing households to adopt efficiency measures irrespective of the cost of adopting those measures.

Cost-Effective Achievable Potential

The *cost-effective achievable potential* represents the same condition described above, but only includes savings from measures that are cost-effective. For this analysis, the cost-effective criteria used was a savings to investment ratio (SIR) greater than one.

Originally, a third option for defining "maximum efficiency" was suggested: the energy savings required to reduce the energy affordability gap of all low-income households in Oregon to zero dollars. However, based on the potential savings assessment performed, the energy savings that would be required to achieve a zero-energy affordability gap cannot be achieved using energy efficiency alone, at least not at this time. Emerging technologies, reduced utility rates, and other factors that evolve over time may make this possible in the future. As such, this definition may be considered in future versions of this plan.

Potential Savings Assessment

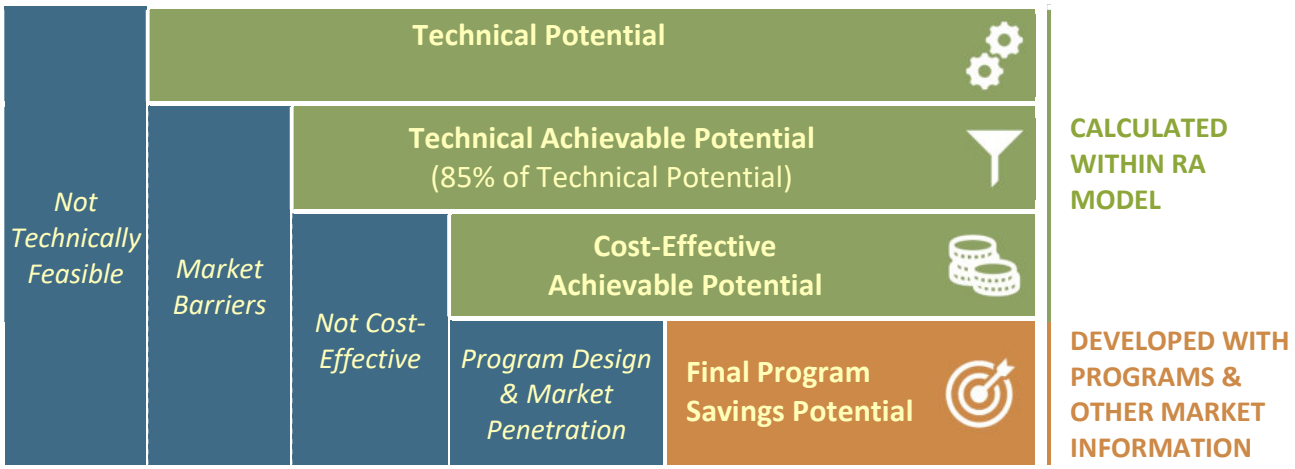
As part of the affordable housing assessment, the working group decided that it was important to determine the potential savings available from energy efficiency improvement in low-income households across Oregon. This information was seen as vital to understanding what the potential effect energy efficiency could have on reducing this population's energy burden. Energy Trust volunteered to perform this analysis for the group, using their established methods, updated to reflect the low-income housing market. The following section provides an overview of that assessment, the sources of data used, the known limits to the data used, and a summary of the results. More detailed information on the methodology of this assessment can be found in Appendix A: Potential Savings Methodology.

Overview

Energy Trust, in conjunction with OHCS, developed a ten-year forecast for the working group's assessment. This forecast was generated using Energy Trust's Resource Assessment (RA) Model

to identify the total ten-year cost-effective modeled energy efficiency savings potential. There are four types of potential that are calculated to develop the final savings potential estimate, which are shown in Figure 1 and discussed in greater detail in Appendix A: Potential Savings Methodology. The fourth step, which requires program-specific details, was not completed for this initial version of the ten-year plan. Once specific programs are proposed to capture these savings, this step should be completed.

Figure 1 – Types of Potential Calculated in 10-year Forecast Determination



The RA Model utilizes the modeling platform Analytica®[8], an object-flow based modeling platform that is designed to visually show how different objects and parts of the model interrelate and flow throughout the modeling process. The model utilizes multidimensional tables and arrays to compute large, complex datasets in a relatively simple user interface.

Data sources

The data used in the RA Model for this plan replicated the data used by Energy Trust for their resource acquisition assessment modeling but were adjusted where deemed appropriate to better represent low-income households. The most impactful changes to this model are listed below.

- *Existing unit count.* The model was run twice for this plan: once to determine the potential savings associated with known affordable housing units and once for the potential savings associated with low-income housing units, which includes the entire known low-income population. The affordable housing unit count was taken from OHCS's Oregon Affordable Housing Inventory (OAHI) unit counts for Oregon multifamily subsidized rental housing and OHCS's manufactured home parks database. For the low-income housing unit count, DOE's Low-Income Energy Affordability Data (LEAD) Tool, County Pacific 2015 dataset was used[2].

Household numbers and percentages in the LEAD dataset are based on ACS 2011-2015 5-year estimates. All units in structures with two or more units are included in the multifamily unit count.

- *New construction and demolition unit count.* For both versions of the model, the new construction unit count was based on the goal set by both the Governor's Housing Policy Agenda[9] and OHCS's Statewide Housing Plan[10] – 25,000 units to be created or preserved by 2023. As this plan covers ten years instead of five, it was assumed that 50,000 new units would be created or preserved during the scope of this plan. The average split between created and preserved units from the past ten years was used to estimate the split between created and preserved units for the 50,000 new units. Additionally, the Energy Trust model uses an assumption provided by the utilities to estimate the number of homes demolished each year. This assumption is equal to approximately 0.75 percent of the existing building stock per year.
- *Space heating and water heating fuel splits.* NEEA's Residential Building Stock Assessment[7] (RBSA) dataset was used to estimate the space heating and water heating fuel splits for each housing type separately. As discussed in the following Data Limits section, this dataset is based on all housing stock across the Pacific Northwest and is not specific to low-income building stock.
- *Climate zone splits.* NEEA's RBSA dataset was used to estimate the percent of multi-family (MF), manufactured home (MH) and single-family (SF) units in each of Oregon's two climate zones.
- *Baseline saturation rates.* The baseline saturation data used, which relies heavily on NEEA's RBSA, were adjusted to reflect average saturation of the households that self-reported as qualified for subsidized energy bill assistance instead of the entire population. On average, the adjustments result in a two percent higher baseline saturation. Many measures have no adjustments as either there was an inadequate number of data points in RBSA to discern different baseline conditions, or there was no discernible difference between the subsidized and market rate datasets.

It is important to note that the potential savings calculated for multifamily units is limited to the in-unit savings and excludes all potential savings from the common areas, as the assessment focused specifically on the potential savings available to the low-income households themselves, not building owners.

Data Limits

The model was run with the best data available to the working group at the time of publication of this plan; however, the working group acknowledges that there were limitations to those datasets. A few of the more impactful limitations are listed below.

- *Space heating and water heating fuel splits by county.* Statewide averages of fuel splits were used in the current analyses. However, if county-by-county fuel splits were used instead, more accurate county-level potential savings by fuel type can be determined. This limitation results in county-level inaccuracies, such as likely overestimation of natural gas potential savings in counties that have limited access to natural gas, such as Harney County.
- *Fuel switching savings.* This analysis does not include any savings related to fuel switching measures (e.g., changing from gas to electric space heating). As the state continues to explore decarbonization, there may be interest in supporting fuel switching measures.
- *Non-energy benefits.* The model incorporates a limited number of non-energy benefits that are easily quantifiable such as cold-water savings from low-flow fixtures. However, there are other non-energy benefits that should also be accounted for in the cost-effectiveness calculations to accurately capture the true benefits of these energy efficiency upgrades.
- *Low-income housing stock assessment.* Many aspects of the current model are based on NEEA's RBSA. However, only two percent of the interviewees in the RBSA study were Oregonians eligible for energy bill assistance. It is unknown what the impact to the potential savings assessment would be if a larger number of low-income Oregon households were included in the study; however, the cost of performing an affordable housing-specific assessment similar to the RBSA would likely be expensive.

Results

The main output of this model was statewide savings, broken down by building type, and separated into technical achievable and cost-effective technical achievable savings. The model output data for both electric and gas measure savings. Additionally, it broke out savings by most impacted end use (e.g., heating or domestic hot water). The data was analyzed from many different angles to provide insight into the best opportunities for reducing energy burden through energy efficiency and the results of those analyses are summarized below.

Potential Savings Primer

It is important to understand what the potential savings values discussed in the tables below represent; however, it is not a simple answer. The answer is complex because the measures used to calculate potential savings are each assigned one of three different delivery methods,

and the time frame in which the savings can be achieved varies based on which delivery method is assumed. The potential savings results presented in this section can best be described as the annual potential savings available by the end of the ten-year period.

The three delivery methods are retrofit, replace on burnout, and new construction. The replace on burnout and new construction delivery methods assume that there is a specific window of time in which it is possible to capture the savings – either when the equipment fails or when a new construction project is built. Otherwise, the opportunity is lost until the measure fails again, which could be a significant amount of time. The model constrains the available stocks for each measure based on the measure life and turnover of stocks each year (i.e., a measure with a 15-year measure life has 1/15th of total stocks available each year rather than the full stocks like retrofit measures). Thus, measures that are delivered as a replace on burnout or as new construction have a ten-year total potential savings that is approximately[*] ten times larger than the potential savings of any given year within that ten-year period.

The retrofit delivery method assumes that the savings can be captured at any time and is not constrained to any specific event such as equipment failure. In theory, the ten-year potential savings for a retrofit could be achieved in one year; however, it is unrealistic to assume that a measure could be upgraded across all statewide building stock within such a short time period. Regardless, measures that are delivered as a retrofit have a ten-year total potential savings approximately[*] equivalent to the potential savings of any given year within that ten-year period.

Additionally, the model includes savings from emerging technologies. Savings from these emerging technologies are not included in the model until 2020 at the earliest, given the fact that they are still emerging and not yet market-ready. Therefore, none of the potential savings from these measures are available in year one. Depending on their assigned delivery method, their potential savings patterns follow the same as those listed above, starting on the year that they are predicted to be available for market deployment.

So, as mentioned above, the potential savings results presented in this section can best be described as the annual potential savings available by the end of the ten-year period. However, a large portion of that savings could be achieved in year one – in theory all the retrofit measures savings plus year one of the replace on burnout and new construction measures

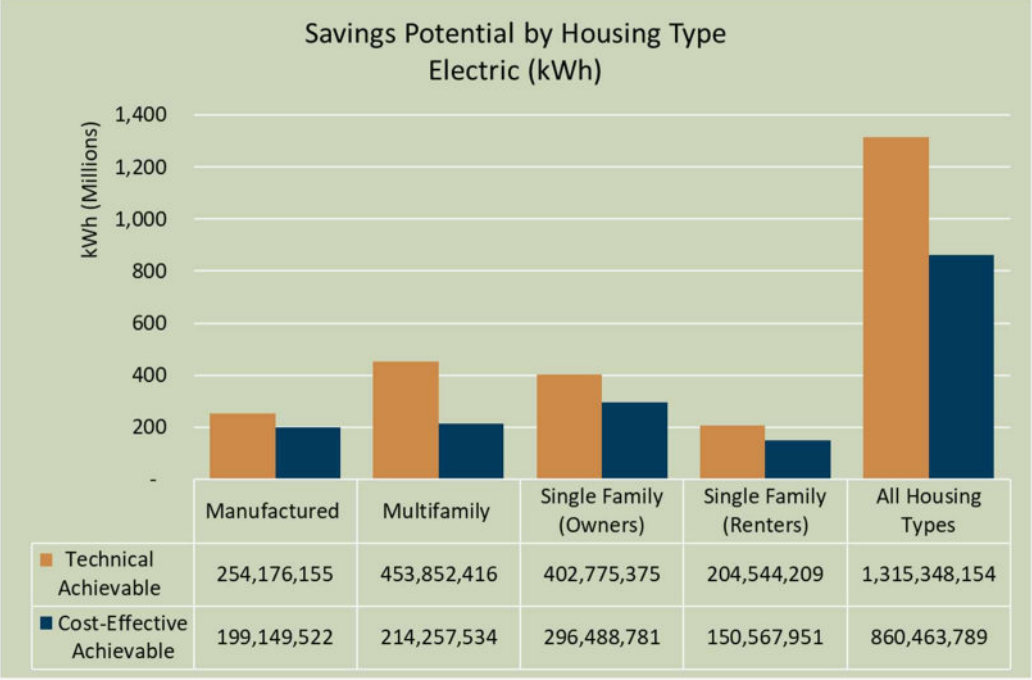
[*] *Since the model includes assumptions on both building stock growth, from new construction, and building stock decline, from demolition, the year-to-year building stock numbers vary.*

savings. But, there is also a portion of the total potential savings that cannot be achieved in year one – the replace on burnout and new construction savings attributed to years two through ten. Looking at both the technical and cost-effective achievable potential savings of both electric and natural gas, approximately 60 percent of the savings are technically able to be achieved in year one of the plan.

One last important note is that all savings, regardless of delivery type, are expressed in first year annual savings. These savings can be expected to persist each year that the measure remains in operation.*

Electric Savings Results

The following figure shows the electric potential savings calculated for the entire low-income population of Oregon. The results show that 65 percent of the technical achievable potential savings are also cost-effective across the total residential building stock. Multifamily has the lowest portion of cost-effective savings, with only 47 percent. So, while multifamily units across the state have higher technical achievable potential savings than owner-occupied single-family units, they have a lower amount of cost-effective achievable potential savings.

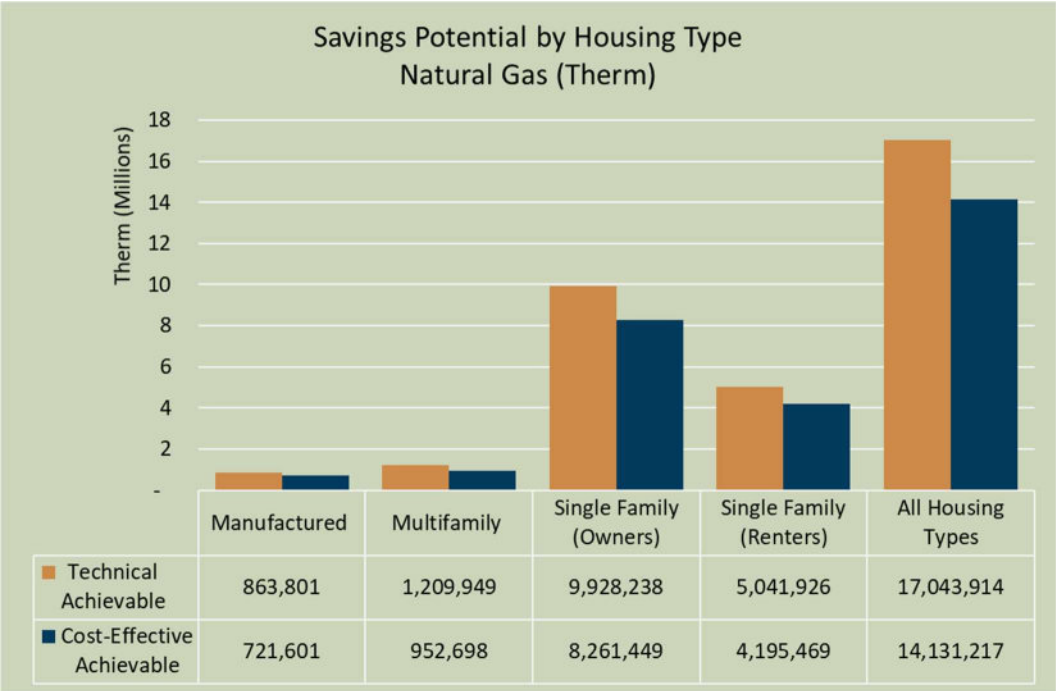


	Manufactured	Multifamily	Single Family (Owners)	Single Family (Renters)	All Housing Types
Technical Achievable	254,176,155	453,852,416	402,775,375	204,544,209	1,315,348,154
Cost-Effective Achievable	199,149,522	214,257,534	296,488,781	150,567,951	860,463,789

** The actual savings persistence after year one varies based on multiple factors, including changes to operating conditions, human behavior, degradation of the equipment's efficiency, early replacement of equipment, and, when looking at savings from a cost perspective, utility rates.*

Natural Gas Savings Results

The following figure shows the natural gas potential savings calculated for the entire low-income population of Oregon. The results show that about 83 percent of the technical achievable potential savings are also cost-effective across all building types. The vast majority of savings available to the low-income population, 88 percent, are found in single-family homes.

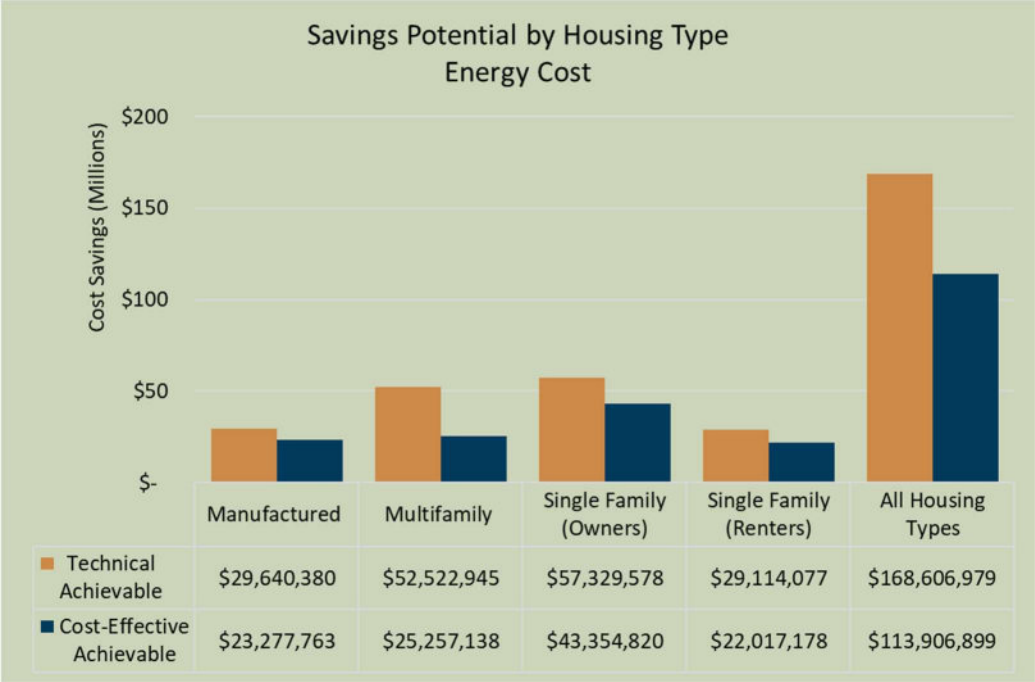


	Manufactured	Multifamily	Single Family (Owners)	Single Family (Renters)	All Housing Types
Technical Achievable	863,801	1,209,949	9,928,238	5,041,926	17,043,914
Cost-Effective Achievable	721,601	952,698	8,261,449	4,195,469	14,131,217

Cost Savings Results

The results shown above were combined with average statewide utility rates to produce energy cost savings potential for the low-income population in Oregon. While the technical achievable potential savings is over $165 million, once cost-effectiveness is factored, the potential savings drops to less than $115 million. The results are shown below.

As previously discussed, a rough estimate of total annual energy consumption for the low-income population of Oregon was calculated to be able to get a general understanding of how much relative potential saving are available. The electric and gas savings were combined and converted to cost savings using state-average utility rates. Based on that estimate, and these results, the technical achievable potential savings represents a 14 percent savings over current energy cost; the cost-effective achievable potential savings represents about 10 percent of the current annual energy costs to the low-income population across the State.

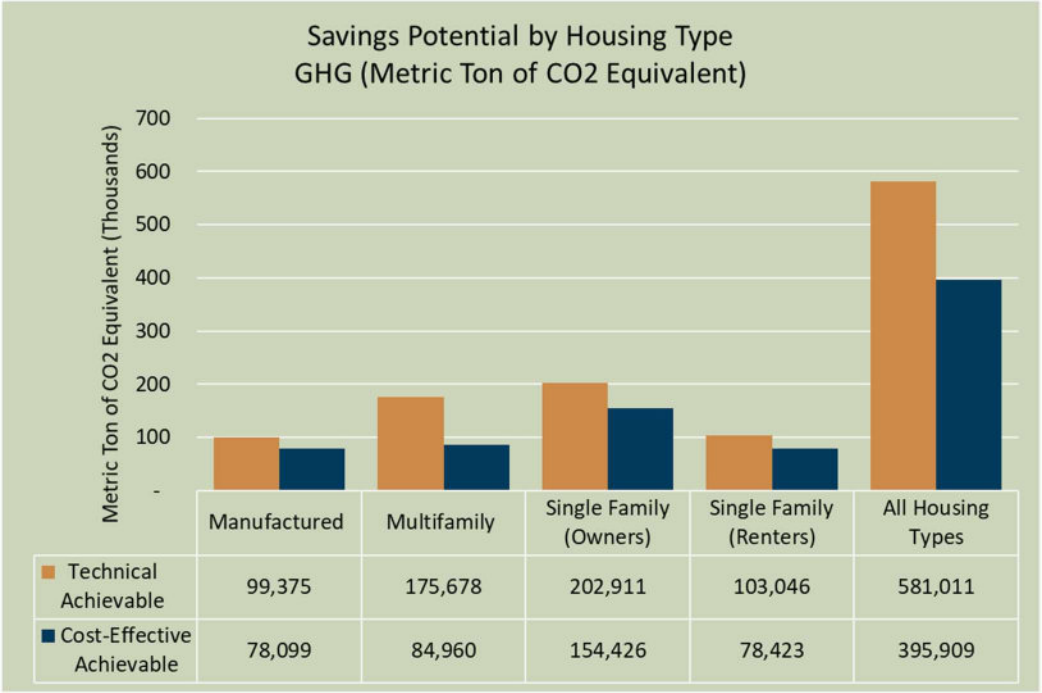


	Manufactured	Multifamily	Single Family (Owners)	Single Family (Renters)	All Housing Types
Technical Achievable	$29,640,380	$52,522,945	$57,329,578	$29,114,077	$168,606,979
Cost-Effective Achievable	$23,277,763	$25,257,138	$43,354,820	$22,017,178	$113,906,899

Greenhouse Gas Savings Results

Similarly, the results of the potential savings model were combined with greenhouse gas emission factors for Oregon utilities[*] to produce potential savings of greenhouse gas emissions from performing energy efficiency in low-income households across Oregon. The results are shown below in metric tons of carbon dioxide equivalent avoided.

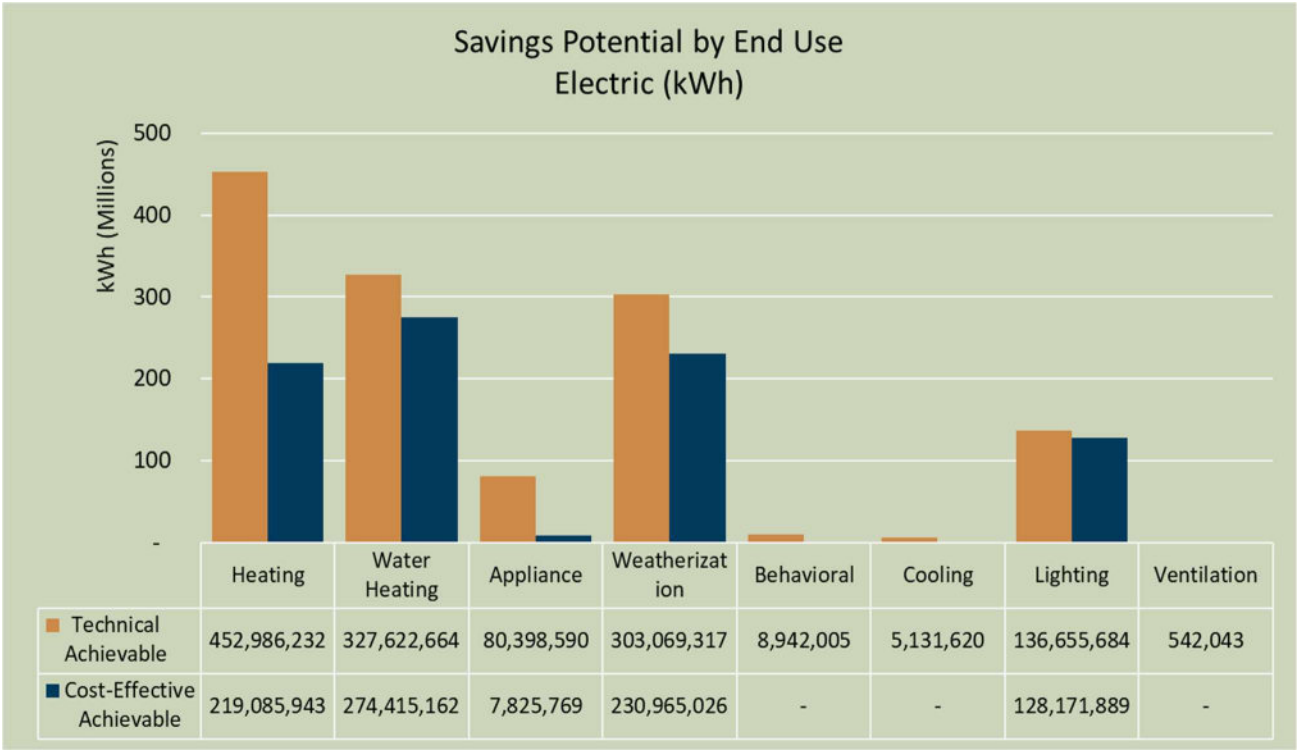
[*] *The conversion factors used to convert electric savings to greenhouse gas savings were provided by the Oregon Department of Energy (ODOE). For all electric utilities other than Idaho Power, the conversion factors used were those developed by the utilities as part of the process of developing the Oregon Home Energy Score. Idaho Power's conversion factor came from the Department of Environmental Quality's Mandatory Reporting (DEQ's MR) data. The statewide electric savings were first weighted based on the distribution of residential building stock among the utilities, and then converted to GHG savings using the utility-specific conversion factors.*



	Manufactured	Multifamily	Single Family (Owners)	Single Family (Renters)	All Housing Types
Technical Achievable	99,375	175,678	202,911	103,046	581,011
Cost-Effective Achievable	78,099	84,960	154,426	78,423	395,909

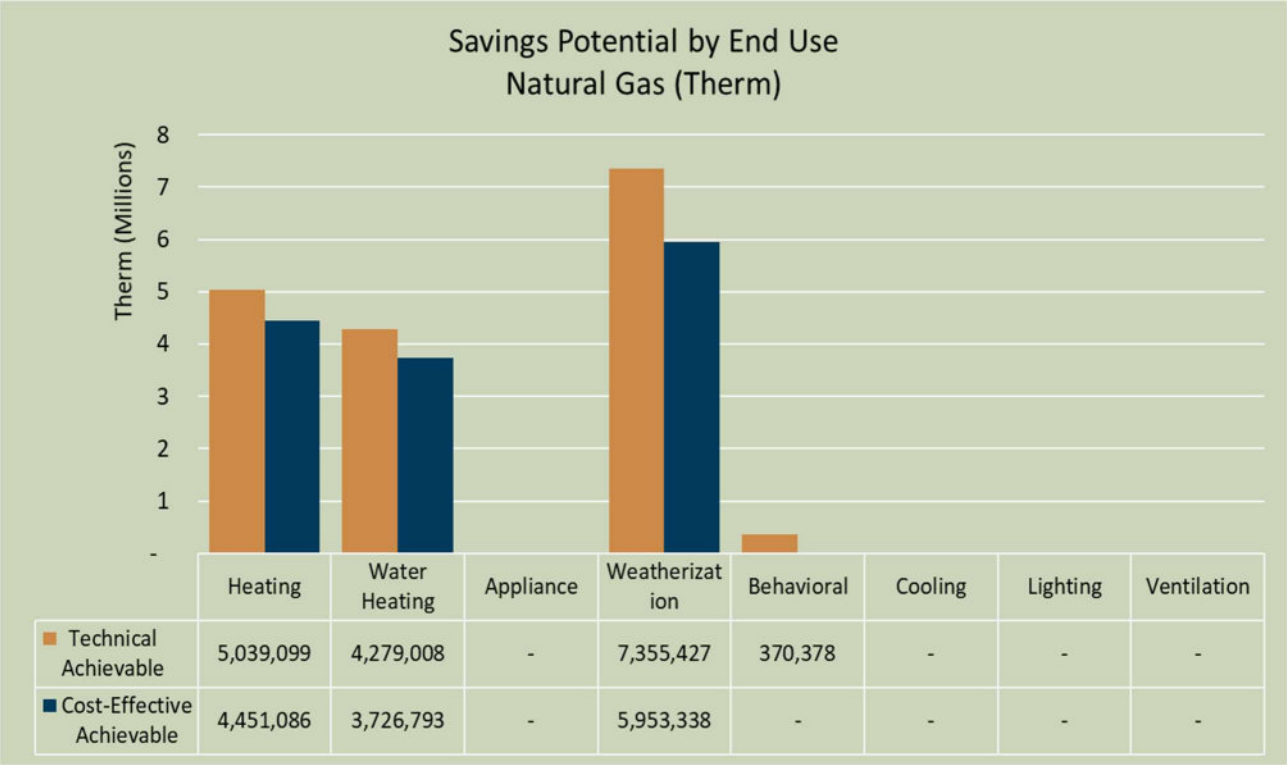
End Use Potential Savings

The potential savings outputs from the model were split up by most impacted end use for each modeled measure. There are two graphs shown below, one for electric savings and one for natural gas savings.



	Heating	Water Heating	Appliance	Weatherization	Behavioral	Cooling	Lighting	Ventilation
Technical Achievable	452,986,232	327,622,664	80,398,590	303,069,317	8,942,005	5,131,620	136,655,684	542,043
Cost-Effective Achievable	219,085,943	274,415,162	7,825,769	230,965,026	-	-	128,171,889	-

These graphs provide more detail into the type of energy efficiency measures that could significantly impact the low-income population's energy burden.



	Heating	Water Heating	Appliance	Weatherization	Behavioral	Cooling	Lighting	Ventilation
Technical Achievable	5,039,099	4,279,008	-	7,355,427	370,378	-	-	-
Cost-Effective Achievable	4,451,086	3,726,793	-	5,953,338	-	-	-	-

Potential Savings by Measure

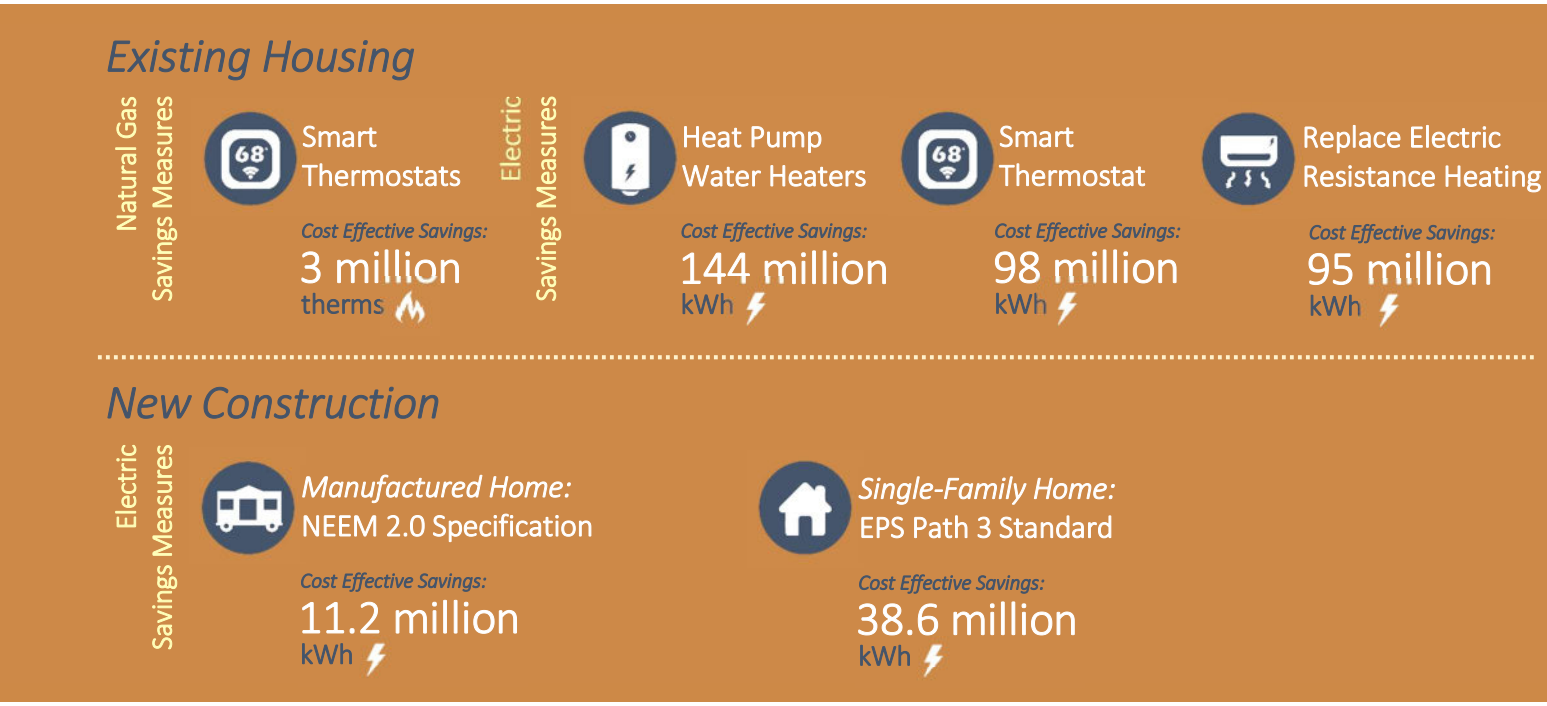
As mentioned previously, the total potential savings was calculated by summing measure-level savings. Therefore, another output of the model was measure-level savings for each building type.

Analyzing the natural gas savings measures, there was one measure that clearly stood out as having the highest cost-effective achievable potential savings – *smart thermostats* in homes with gas furnaces. This measure was cost-effective for all types of existing housing, including multifamily, manufactured housing and single-family. The total cost-effective achievable potential savings for this measure was about 3 million therms in savings. Other measures that showed natural gas cost-effective achievable potential savings greater than 1 million therms included two emerging technologies - gas absorption heat pump water heaters and high-performance insulation in exterior walls - and the conventional technologies of duct and air sealing.

A similar analysis of electric-saving measures resulted in several opportunities for significant cost-effective savings across all types of existing housing. The highest potential was shown to

be installing Tier 3 *heat pump water heaters* in all existing low-income housing, which had a potential savings of 144 million kWh. The second highest potential was found to be installing *smart thermostats* in units with electric furnaces or heat pumps. The cost-effective achievable potential savings across all building types for this measure was 98 million kWh. The third highest potential savings came from *replacing electric resistance heating* with residential split-system heat pumps, again in all types of housing. The potential savings for this measure was found to be 95 million kWh.

Lastly, for low-income new construction, there were two electric-savings measures that were found to be impactful. For new manufactured homes, building to meet the Northwest Energy Efficient Manufactured Home Program *(NEEM) 2.0 specification* had a cost-effective achievable potential savings of 11.2 million kWh. And for single-family homes, building to meet the *EPS™ Path 3 standard*[11], which requires the house be at least 25 percent better than code, was found to have a potential cost-effective savings of 38.6 million kWh.



Section 2: Affordable Housing Assessment

Overview

The goal of the assessment was to identify the regions with the greatest need and to identify gaps in existing resources to inform efforts to reduce energy burden and achieve maximum efficiency in low-income and affordable housing in Oregon.

The assessment, available online at http://bit.ly/OHCS_AHA, is presented in an ArcGIS mapping platform that can be easily updated, appended, or adjusted in the future. A variety of metrics were chosen to help identify the needs of the low-income population and the gaps in assistance across the State. Data is presented in three types of resolutions: county-level, Community Action Agencies (CAAs) level and electric and natural gas utilities levels. The majority of the data is presented at the county-level as that is the finest level at which accurate information exists for the many of the metrics and having multiple layers of data at the same level allows for better comparison and analysis.

Data Presented

The Affordable Housing Assessment currently has fourteen layers of data, listed below. For more information about each layer or about the assessment methodology, refer to https://go.usa.gov/xEamt. Additionally, all sources of data are listed in Appendix D: Cited References as indicated.

Layer 1. Affordable housing inventory of multifamily properties

This layer displays all publicly-funded affordable multifamily rental housing properties in Oregon, defined as those properties that have received funding from any level of government that include units with income or rent restrictions. The properties in this inventory come from the following partners: Oregon Housing and Community Services, HUD, USDA, Metro, Network for Oregon Affordable Housing, all 20 of Oregon's Housing Authorities, and many county and city governments[12].

The pop-up window in this layer provides the following additional information for each property.

- Name of multifamily rental property
- Number of units within that property
- Housing type (e.g., rental housing)

Layer 2. Affordable housing inventory of manufactured home parks

This layer displays locations of all mobile/manufactured home parks registered with OHCS[13]. Red circles represent family parks, blue circles represent senior (55+) park communities, and green circles have no reported specialty population. The relative size of each circle indicates the number of total spaces within the park.

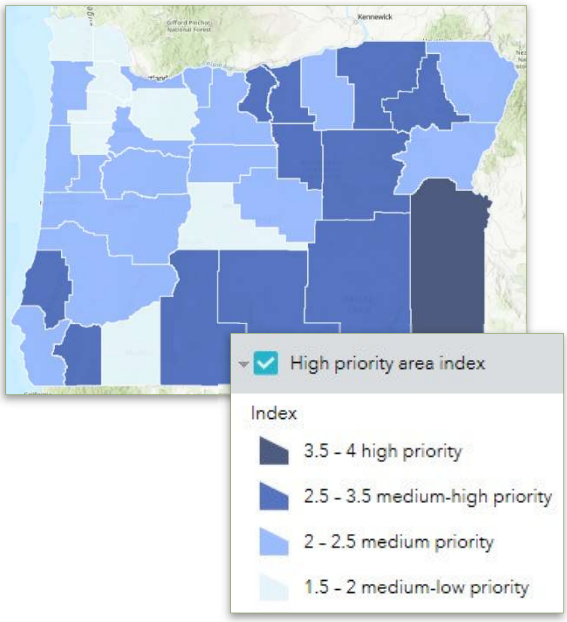
The pop-up window in this layer provides the following additional information for each park.

- Name of the manufactured home park
- Type of park (e.g., family)
- Number of spaces within the park

Layer 3. High priority area index

To more easily identify counties with the greatest energy burden, an index was created that encompasses high valued measures to understanding energy burden. The index included a measure of energy burden itself along with other factors that are known to drive energy burden[4]. These factors include affordability hardship due to low household income (economic driver); poor home energy efficiency due to older home vintage (physical driver); and housing inequity issues due to ethnicity/race (systemic driver). There are likely other factors that can lead to a household experiencing energy burden and identifying those factors should be explored for future revisions of this assessment and the ten-year plan.

The index was calculated by breaking down each measure's value into a low (score of 1) to high (score of 4) continuum based on the mean and standard deviation, and then averaging the scores of the four variables for each county. For more information about how this index was created, refer to https://go.usa.gov/xEamt.



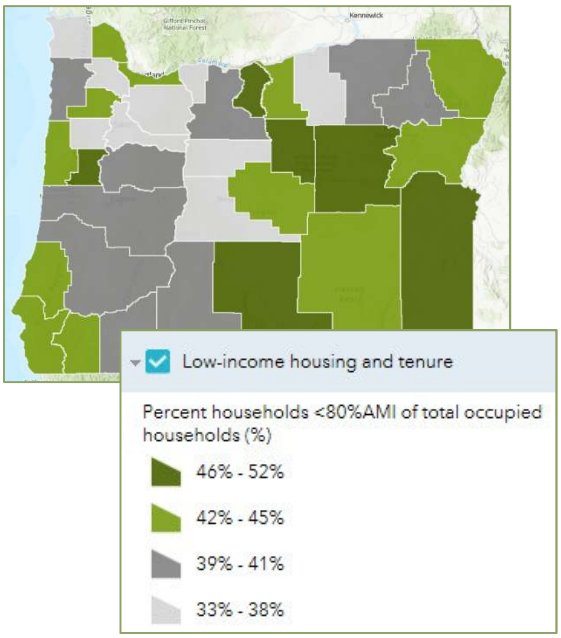
The four variables used to develop this index for each county were:

- Percent of energy burdened households,
- Percent of low-income households,
- Percent of units built prior to 1990, and
- Percent of people of color.

The pop-up window in this layer provides the four variables listed above, in addition to the county's calculated index.

Layer 4: Low-income housing and tenure

This layer displays the percent of total occupied households per county that are low-income, based on this plan's definition (i.e., households that earn <80% AMI)[2]. The pop-up window in this layer provides the following additional information related to the number of low-income households by housing type, and the number of known affordable households by housing-type, by county.



- Total number of occupied households[2]
- Percent of occupied households that are low-income[2]
- Number of low-income, single-family, renter-occupied households[2*]
- Number of low-income, single-family, owner-occupied households[2*]
- Number of low-income multifamily households[2]
- Number of low-income manufactured homes households[2]
- Number of affordable multifamily units[12]
- Number of spaces within affordable manufactured home[13]

Layer 5: Energy affordability gap

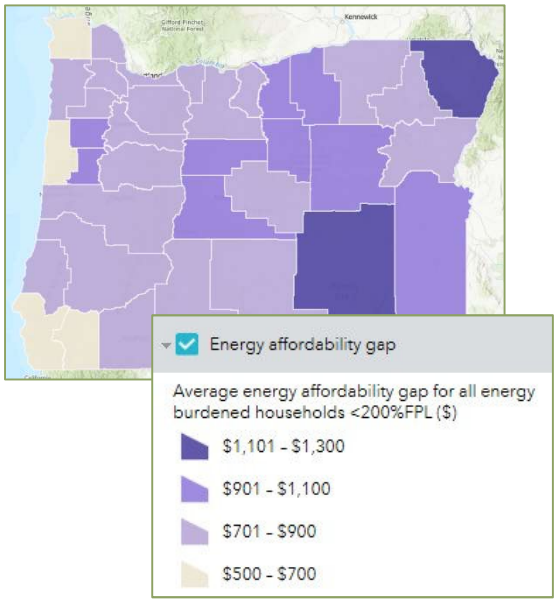
This layer displays the average energy affordability gap, in dollars, for energy burdened households, by county. The energy affordability gap represents a dollar amount needed to bring energy burdened households to an "affordable" (6 percent of income) level of energy burden.

It is important to note that this dataset, which is based on the Fisher, Sheehan and Colton's 2017 Home Energy Affordability Gap dataset[14], is calculated for households <200% Federal Poverty Level (FPL), which does not align with this plan's definition of low-income households

[*] *Single-family households include "1 unit detached" only. Multifamily households include all categories with 2+ units. Manufactured households include those categorized as "other units". The one-unit attached households were not included in this initial unit count. Including these units in future versions of the assessment should be considered.*

(<80% AMI). Therefore, this dataset includes the energy burden from a larger number of households than the low-income households displayed in Layer 4.

The pop-up window in this layer provides for the following additional information by county.



- Total energy affordability gap, in dollars
- Average energy affordability gap, in dollars, for all energy burdened households <200% FPL
- Average energy affordability gap, in dollars, for energy burdened households <100% FPL
- Average energy affordability gap, in dollars, for energy burdened households between 100%-150% FPL
- Average energy affordability gap, in dollars, for energy burdened households between 150%-200% FPL
- Percent energy burdened households of total occupied housing in a county

Layer 6: Home vintage and fuel type

This layer displays the percent of total housing units that were built before 1990 by county[15]. The year 1990 was chosen as a proxy for the date when meaningful residential energy code first became law in the State.

The pop-up window for this layer provides the following additional information by county.

- Percent of pre-1990 housing of total housing units
- Percent of occupied households with electricity as primary fuel
- Percent of occupied households with utility gas as primary fuel
- Percent of occupied households with bottled, tank, or LP gas as primary fuel
- Percent of occupied households with fuel oil or kerosene as primary fuel
- Percent of occupied households with wood as primary fuel
- Percent of occupied households with solar as primary fuel
- Percent of occupied households with other as primary fuel

Layer 7. Ethnicity and race

This layer displays the percent of people of color by county[16].

The pop-up window for this layer provides the following, more detailed ethnic and racial information by county.

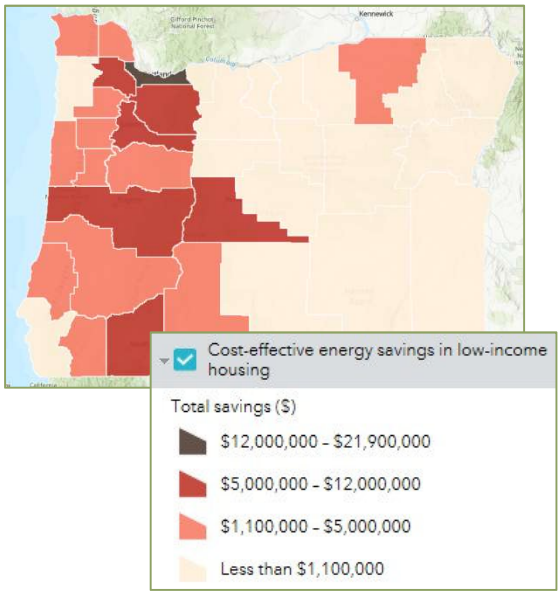
- Percent Non-Hispanic White
- Percent People of Color

The people of color population is further delineated as follows.

- Percent Hispanic or Latino
- Percent Non-Hispanic Black or African American
- Percent Non-Hispanic American Indian and Alaska Native
- Percent Non-Hispanic Asian
- Percent Non-Hispanic Native Hawaiian and other Pacific Islander
- Percent Non-Hispanic some other race
- Percent Non-Hispanic two or more races

Layer 8: Cost-effective energy savings in low-income housing

This layer displays the total cost-effective achievable potential energy savings in low-income housing by county. These potential savings were calculated by the Energy Trust of Oregon, using the Potential Savings Assessment discussed later in this section and again, in more detail, in Appendix A: Potential Savings Methodology. It is important to note that this assessment only evaluated savings opportunities for natural gas and electricity.



The pop-up window in this layer provides the following additional information on the cost-effective achievable potential savings in low-income housing for each county.

- Total energy savings, in dollars
- Total energy savings, in kWh
- Total energy savings, in therms
- Total energy savings, in CO2e

Layer 9: Cost-effective energy savings in OHCS affordable housing

This layer displays the cost-effective achievable potential energy savings in affordable housing by county. This information was calculated using the same assessment as Layer 8 but was limited to affordable housing building stock – OHCS subsidized multifamily and manufactured homes – instead of all low-income buildings.

The pop-up window in this layer provides the following additional information on cost-effective achievable savings for each county.

- Total energy savings, in dollars
- Total energy savings, in kWh
- Total energy savings, in therms
- Total energy savings, in CO2e

Layer 10: Federal and state energy assistance and weatherization programs (Community Action Agency (CAA) territories)

The layer shows Oregon's Community Action Agencies' (CAA) territories and total annual funding for Federal Fiscal Year (FFY) 2018 for weatherization and energy assistance programs by CAA. This information was provided by the internal Energy Section at OHCS. Assistance programs presented in this layer include:

- Low Income Home Energy Assistance Program (LIHEAP) weatherization and energy assistance programs
- U.S. Department of Energy Weatherization Assistance Program (DOE)
- Bonneville Power Administration Low Income Weatherization Program (BPA)
- State Home Oil Heating Program (SHOW)

The pop-up window for this layer provides the following information about the total funding for weatherization and energy assistance programs, in FFY 2018.

- Name of Community Action Agency
- Annual funding for each assistance program (Value of "0" refers to the absence of a particular program in a given CAA territory)
- CAA website and contact phone

Unlike most other layers in this map, this layer is not displayed by county. The reason for this discrepancy is that several of the CAAs cover multiple counties, and the information on energy assistance allocations by county was not available at the time of publication.

Layer 11-14: Existing Weatherization and Energy Assistance programs administered by electric and natural gas utilities

These layers show the average annual benefit allocated per household for utility-administered energy assistance and weatherization programs, based on the number of participating households in a given year. Because information was self-reported by the utilities, different

utilities provided information from different years; however, the majority of energy assistance and weatherization funding allocation presented here is for FFY 2018. Also note that for most utilities, the data provided was either the average household benefit or the total program funding, not both. As such, for most utilities, one of these two data points show "0" to signify that the data is not available at that level.

The pop-up window for this layer displays the following information for each utility.

- Utility name
- Utility rate
- Name of the assistance program
- Type of program (e.g., weatherization)
- Average annual household benefit in dollars, where available (value of "0" means data is not available at this level of detail)
- Annual funding level in dollars, where available (value of "0" means data is not available at this level of detail)

Utility territories that do not have either energy assistance or weatherization programs are not displayed on the map.

Data Limits

The assessment was created using the best data available to the working group at the time of publication of this plan; however, the working group acknowledges that there were limitations to those datasets. A few of the more impactful limitations are listed below.

Underserved Populations

Low-income households, along with those in communities of color and rural communities, frequently experience higher energy burdens than the average household and are disproportionately impacted by the effects of climate change[4]. These same populations are less able than others to cope with and respond to these changes. The Governor and multiple State agencies, including OHCS and ODOE, have recognized this issue and are actively working toward reducing these inequities through actions such as mandating the creation of this low-income assessment and ten-year plan. One example of the type of program that could be replicated to help these underserved populations is OHCS's Local Innovation and Fast Track (LIFT) Rental Housing Program that was launched in 2017. The program's primary goal is to create a large number of new affordable housing units for low-income Oregon families and to support historically underserved communities. While some preliminary steps have been taken to help these vulnerable communities, there is much more work to be done to do this issue justice. That work was not able to be completed prior to the initial release of this plan. It is highly recommended that an in-depth focus on this issue be one of the first steps performed after the release of this plan, and that this plan be amended in the near future to provide more information, insight, and recommendations on next steps.

- Energy burden. The dataset referenced is for households at or below 200% federal poverty level (FPL), which does not align with the census dataset nor the plan's definition of low-income (less than 80% AMI). Ideally, the assessment would include energy burden for the same population as that represented in the other datasets.
- Demographics. The dataset used in the demographics layer is based on county-level census data, not specific to low-income households. It is essential to ensure that work done through this plan is done equitably and understanding the demographics of the low-income population across the State is key to doing that successfully.
- Energy efficiency program funding. The datasets used for layers 10-14 include the federal and state programs implemented through the CAAs or through the utilities, that are available only to low-income households. This dataset does not include funding currently provided to the low-income population from either Energy Trust of Oregon or Bonneville Power Administration (BPA) through their standard offer programs not specific to low-income households. It is known that the low-income population participates in these programs[17], but the level of assistance is not included in this assessment.
- Energy assistance/weatherization funding. The datasets used for the utility energy assistance and weatherization programs tend to include either average benefit to households served or total annual funding of the program, but not both. Having complete data on these programs would improve the working group's ability to understand what funding is currently being expended to help reduce the energy burden on Oregon's low-income population.
- Non-electric and natural gas energy. This dataset only includes potential savings from electric and natural gas measures. It does not include potential savings from fuel oil, propane, wood or other fuels.

Results

The goal of the assessment was to identify the regions with the greatest need and to identify gaps in existing resources to inform efforts to reduce energy burden and achieve maximum efficiency in low-income and affordable housing in Oregon. The initial results from the assessment are discussed here.

Regions with Greatest Need

The high priority area index discussed above was developed to assist in addressing the first part of the goal – identifying the regions with the greatest need. The results of that analysis,

including the data used to determine the level of need, is presented in Appendix B: Affordable Housing Assessment Index by County.

The four variables used to calculate this index for each county were:

- Percent of energy burdened households,
- Percent of low-income households,
- Percent of units built prior to 1990, and
- Percent of people of color.

Based on this index, the regions of greatest need in Oregon tend to be the rural counties. If the average energy burden per low-income household is also factored into this need analysis, the Eastern Oregon rural counties again demonstrate the most need. Others have found similar trends across the country. The American Council for an Energy-Efficient Economy (ACEEE) recently published a report, "The High Cost of Energy in Rural America: Household Energy Burdens and Opportunities for Energy Efficiency" [18] that found that the share of income rural households spend on energy is significantly higher than their non-rural counterparts' expenditures. It is also important to note that rural households are more likely to use fuel oil or propane for heating. And, often, there is only limited funding available to provide energy efficiency services for these types of fuels, making it even more difficult to serve these rural households. An example case study of one of these high need rural counties, Malheur county, is shown below.

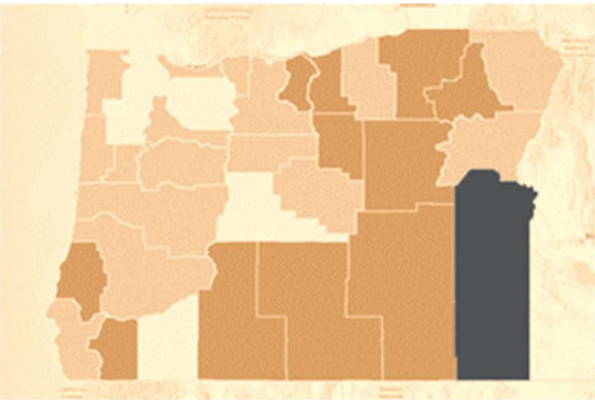
The information in the case study presented below can be used to justify funding for energy efficiency programs in Malheur County. In addition to the low-income population clearly needing assistance in reducing their energy burden, there is substantial savings to be had through energy efficiency that will not only reduce this burden and provide non-energy benefits to the occupants such as improved health, it will also provide substantial greenhouse gas reductions for the State. Once the fuel oil and propane potential savings can be determined, the potential greenhouse gas emissions reductions will increase even further, given the high carbon intensity of those fuels.

This high priority area index can also be used by OHCS to help target areas with the most need for future funding of projects.

Gaps in existing resources

The second goal of the assessment was to identify gaps in existing resources to inform future efforts to reduce energy burden. Unfortunately, the current information on existing resources

Case Study: Malheur County

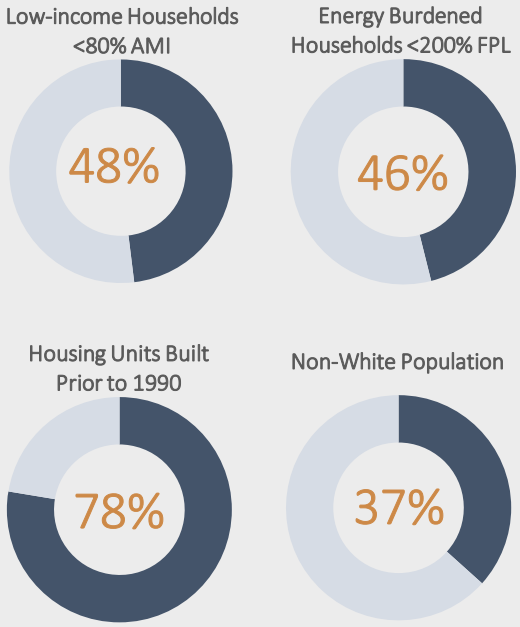


Malheur County

Malheur County scored the highest on the high priority area index, 4 out of 4. The following table provides summary statistics for Malheur County that are accessible through the assessment.

- Malheur's percent of occupied households that are low-income (<80% AMI) is **48%,** one of the highest in the state.
- Malheur's percent of energy burdened households <200% FPL is **46%**, meaning that almost half of all households are energy burdened.
- **78%** of housing units in Malheur are pre-1990, which means they were built to less rigorous energy efficiency standards.
- Malheur's non-white population represents **37%** of the county, one of the highest in the State.
- Malheur's total energy gap for households <200% FPL is **$4,700,341**. This gap could be reduced significantly via energy efficiency improvements, by **$1,031,913.**

High Priority Area Index



Energy Affordability Gap

$993
Average gap for energy burdened households < 200% FPL

$4,700,341
Total gap for energy burdened households < 200% FPL

Energy Savings Potential

$1,031,913
Total dollar savings potential from energy efficiency improvements in low-income housing

7,882,790 kWh
Total electric energy savings in low -income housing

123,160 therms
Total gas energy savings in low - income housing

has some significant known gaps and, therefore, the current version of the assessment is not able to yet provide a complete picture. However, the assessment can assist in understanding the scale of the issue for many regions of the State.

For example, for Malheur County, one can evaluate the rough magnitude of existing energy assistance and weatherization programs using the current assessment and get a reasonable understanding of how those funds can contribute to reducing the known energy affordability gap in the county, which per the assessment is approximately **$4,700,000.**

Malheur is served by the Community in Action (CINA), the community action agency that distributes Federal weatherization and bill assistance dollars to not only Malheur, but also Harney county. Unfortunately, there is no precise information on the split of funding between the two counties at this moment. Additional funding comes from the utilities that serve Malheur county, which include Idaho Power and Harney Electric Cooperative for electricity and Cascade Natural for natural gas. The utility funding is also divided between several counties based on where each utility operates, and again, no county-specific splits are available. The funding administered through CINA (for both Malheur and Harney) and through the utilities (for their entire service territories) equals about **$1,386,000.**

So, assuming that all Federal and utility energy assistance and weatherization funding listed above went to only Malheur County to reduce the energy affordability gap, Malheur would still fall short by **$3,314,000**. In addition, energy assistance programs include both bill assistance and weatherization assistance. While bill assistance can be directly applied to reduce energy affordability gap, weatherization makes an indirect contribution to reducing energy bill via improving energy efficiency of a home, and so the actual reduction of energy bills to the household is unknown based on funding amounts only.

While this data is incomplete, it does provide a very high-level overview of the available funding compared to the known energy affordability gap. And, based on that information, it seems clear that much more assistance is needed to reduce the energy burden for Malheur's low-income population.

Achieving maximum energy efficiency

The last part of the goal of this assessment was to understand the scale of maximum energy efficiency available to this population. The statewide potential savings calculated by the potential savings assessment performed by Energy Trust of Oregon was divided up into county-level savings in the affordable housing assessment. This provides information on the savings opportunities available for each county in Oregon and helps inform the best path to achieving

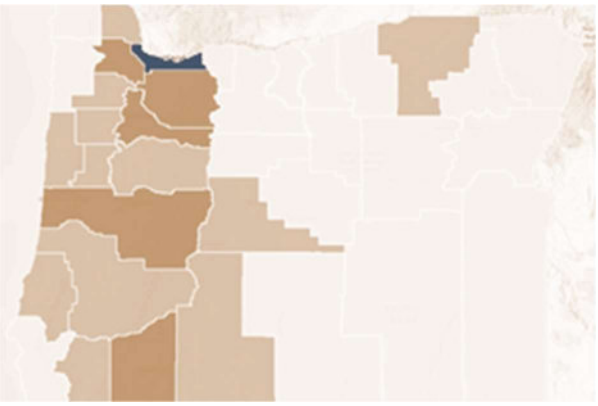
maximum energy efficiency statewide. While the greatest need is found in rural counties across the State, the greatest opportunities for cost effective large-scale savings are found in the urban areas of the State.

An example case study for Multnomah County is presented on the next page. The information in this case study can be used to help justify energy efficiency program funding in Multnomah County. There is huge potential savings in this county, where more than one in five low-income Oregon households live. More than three-quarters of the units in Multnomah were built prior to 1990, before any meaningful residential building code existed, meaning that there is a great opportunity for improvements not only for reducing energy burden, but also improving the habitability of the housing stock as well.

Portland's Clean Energy Bill

The citizens of the City of Portland recently approved ballot measure 26-201, which will place a tax on large retail corporations operating in Portland to help fund clean energy projects. This bill is focused on addressing the need to reduce greenhouse gases and increase energy efficiency in Portland, to help the city meet its Climate Action Plan. Eligible projects will promote energy efficiency, renewable energy, job training, food production and green infrastructure. There is priority given to any project that supports the low-income population or communities of color. This new bill is a huge opportunity to help fund the type of work discussed in this plan.

County Case Study: Multnomah County

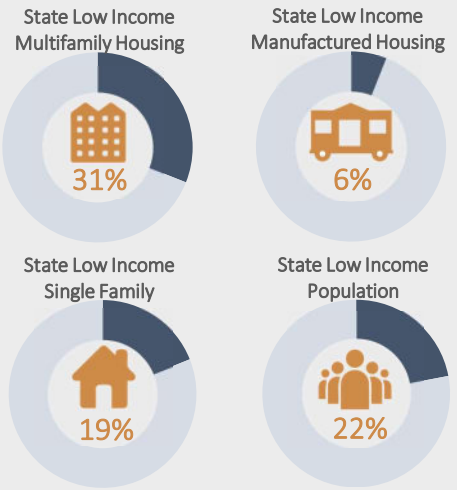


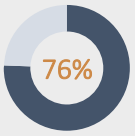
Multnomah County

Multnomah County has the highest savings potential of the State, with over $21 million of cost-effective energy efficiency savings achievable in low-income housing.

- Multnomah County houses **22%** of the total low-income population in Oregon.
- Almost **1/3** of all multifamily low-income households live in Multnomah.
- **76%** of housing units in Multnomah were built before 1990, which means they were built to less rigorous energy efficiency standards than a home built today.
- Multnomah's total energy gap for households <200% FPL is **$57,927,455**. This gap could be reduced significantly via energy efficiency improvements, by **$21,813,688.**
- Energy efficiency in residential low-income households in Multnomah could result in cost-effectively reducing the State's greenhouse gas emissions by **75,873 metric tons of CO_2e.**

Savings Potential





Housing units built prior to 1990

Energy Affordability Gap

$718
Average gap for energy burdened households < 200% FPL

$57,927,455
Total gap for energy burdened households < 200% FPL

Energy Savings Potential

$21,813,688
Total dollar savings from energy efficiency in low-income housing

164,388,687 kWh
Total electric energy savings in low -income housing

2,757,634 therms
Total gas energy savings in low - income housing

75,873 metric tons CO_2e
Total GHG savings in low income housing

Section 3: The Ten-Year Plan

Based on the information produced in the Affordable Housing Assessment, the BEEWG 5(B) subcommittee established the following goal for this ten-year plan: *Reduce the energy burden on the low-income population in Oregon, while prioritizing energy efficiency to achieve that reduction.*

The working group has identified three main objectives to assist in achieving this goal.

- *Objective 1.* Increase our understanding of the current low-income housing market, including market demographics and market size, as well as our understanding of the opportunities and barriers for reducing energy burden in this market.
- *Objective 2.* Provide resources and best practices to low-income housing stakeholders to support their ability to reduce the energy burden on the low-income population in Oregon.
- *Objective 3.* Make recommendations for new programs, or updates to current programs, that would have a large impact on reducing the energy burden on low-income households.

This section presents the recommended strategies and initial tasks associated with each of these three objectives. As stated previously, it is anticipated that this plan will evolve and adapt over the next ten years. These objectives, strategies and tasks serve as a starting point for the conversations and actions that need to occur to successfully achieve significant reductions in energy burden for low-income households. The success of this plan entirely depends on persistent attention and follow-through from stakeholders involved at all levels.

Objective 1: Understand the market

The first objective to enabling our ability to decrease the energy burden on the low-income population is to increase our understanding of the current low-income housing market, including market demographics and market size, as well as our understanding of the opportunities and barriers for reducing energy burden in this market.

Strategy 1: Create a Task Force.

At this time, most of this plan has been based on the work of a limited group of experts from state agencies and program implementers. To truly understand the needs of low-income Oregonian households and the barriers and opportunities for reducing energy burden in these households, additional stakeholders need to be involved.

Task 1: **Convene a Task Force comprised of key stakeholders to oversee the future development of this plan.** The BEEWG recommends the creation of a Task Force to ensure the implementation of this ten-year plan. It is recommended that a list of key stakeholders be created, that should include, but not be limited to, the original BEEWG 5(B) subcommittee members, affordable housing advocates, local and state elected officials, Community Action Partnership of Oregon (CAPO), Oregon Citizens' Utility Board (CUB), Oregon Housing Alliance, utility representatives, and diversity, equity and inclusion (DEI) representatives such as the Coalition for Communities of Color (CCC).

Task 2: **Once the Task Force is formed, hold a kick-off meeting to establish realistic goals and expectations for the Task Force.** It is intended that one of the main goals of the Task Force be the creation of policy recommendations to inform the continued development and implementation of this plan in its entirety. As the Task Force meetings develop, establish clear roles and responsibility for individual members, and follow best practices for successful working groups.

The remainder of this plan includes recommendations of next steps for this Task Force to investigate and potentially implement once formalized.

Strategy 2: Upkeep of the affordable housing assessment.

The intent of the affordable housing assessment is to inform efforts in reducing the energy burden on the low-income population in Oregon. As such, it is vital to understand the limitations of this data, to improve the quality of the data, and to update this data as the market changes.

Task 1: **Address known gaps and limitations in data.** The affordable housing assessment in its current form includes the best data available to the team at the time of publication. However, as described in Section 2, there are known limitations and gaps in that data. The first step is to identify and address these limitations and gaps, as funding allows, to ensure that accurate information is being leveraged to properly inform the implementation of this plan. Examples of gaps and limitations that could be revisited are listed in Section 2, such as investigating the funding levels of all existing programs to increase our understanding of current statewide funding. Once better data is available, the data in the assessment should be updated.

It is highly recommended that the demographic data for low-income households be one of the first data quality issues addressed. The data currently used in the assessment is based on census-level county data, not specific to the low-income population. This data is vital to

understand how to equitably serve the yet-to-be-reached demographic groups such as communities of color.

Task 2. **Revise potential savings assessments and affordable housing assessment when significant shifts in the market occur.** Market changes that should trigger revision of these assessments include significant changes to fuel prices, improved cost-effectiveness of emerging technologies, introduction of new incentive programs, or successful implementation of other parts of the Executive Order 17-20, such as improvements to code.

Strategy 3: Identify and track key performance indicators (KPIs) to measure success of this plan.

Task 1. **It is recommended that the Task Force select a list of key performance indicators (KPIs) to enable tracking progress toward the goal of this plan.** Once the appropriate KPIs are selected, the group should then establish targets for those KPIs. Some KPIs worth considering include statewide energy affordability gap, percent of low-income households in affordable housing, savings achieved through energy efficiency programs, and percent of total savings achieved in communities of color.

Task 2. **Establish a process and schedule for updating the identified KPIs and track progress towards their targets.**

Objective 2: Support the market

The second objective is to provide resources and best practices to low-income housing stakeholders to support their ability to reduce the energy burden in the low-income populations that they serve.

Strategy 1: Create tools, including new resources and best practices, that address known barriers to reducing energy burden in low-income populations.

Task 1. **Identify tools that can help low-income housing stakeholders overcome barriers and/or take advantage of opportunities in the market.** As a first step in reducing the energy burden of the low-income population of Oregon, it is suggested that new tools be identified and created to help the entities that already exist and are already supporting the low-income market. Examples of these market actors include the community action agencies and organizations such as the members of the Affordable Housing Alliance. Anticipating this potential need, the BEEWG 5(B) subcommittee released a request for information questionnaire during the development of this initial plan, which in part sought feedback from the market on the usefulness of six concepts for tools that could be developed. The feedback was overwhelmingly positive for all six. They are listed below, with the concept that was

identified as potentially most useful listed first. This list serves only as an example of the types of tools that could be developed and should not be considered an exhaustive list of options.

- Updated utility allowance calculations that better recognize savings from efficiency projects
- Online tool that identifies incentive programs available by geographic area
- Document that outlines financing options for efficiency projects in low-income housing
- Toolkit (e.g. checklists, resource guides) that highlights best practices for implementing efficiency projects in low-income housing
- Assistance with benchmarking portfolios of buildings to identify priority projects to fund first
- Case studies of projects that have successfully reduced energy burden in low-income housing

Task 2. **Create and make available the tools identified in Task 1 above.**

Objective 3: Fund programs

The third objective is to make recommendations on new programs and updates to current programs that would have a large impact on reducing the energy burden on low-income households.

Strategy 1. OHCS to expand its existing Multifamily Energy Program and Green Energy Path requirements, including a manufactured home replacement program through pilot programs and initiatives, while considering multiple values from energy efficiency improvement, such as health and habitability.

This strategy is taken directly from the Executive Order and OHCS has already started work to address this directive.

Task 1. **Expand the Multifamily Energy Program.** The OHCS Low-income Weatherization Program (LIWP) has offered incentives for energy efficiency measures to eligible new construction and existing building projects since 2003. In 2016, OHCS solicited proposals from third parties to redesign and implement the program. The redesigned and renamed Oregon Multifamily Energy Program (OR-MEP), launched in January 2018 by the chosen third-party implementor, TRC. The main goals for the redesign of the program were to create an intuitive and efficient program model, promote financing and utility allowance options, and expand program reach and savings. As of November 2018, less than one year after the launch, OR-MEP has reserved incentives for over 1,800 units and has a pipeline of over 1,500 units in application or undergoing technical assistance. In the two years prior to the redesign, OHCS only completed

1,310 units. This doubling of units in 2018 is a result of new program offerings and services, including three flexible program participation pathways with scaling incentives, dedicated technical assistance, expansion of incentivized measures, trainings, and targeted marketing and outreach by program staff. Additionally, the program is set to deliver a workforce development strategy in 2019 to continue to support the needs of low-income multifamily projects in Oregon.

Task 2. **Create a fuel-blind Multifamily Energy Program.** Currently, Public Purpose Charges from Pacific Power and Portland General Electric fund the Oregon Multifamily Energy Program. Therefore, the program is only able to serve multifamily projects that are electrically heated within those utility service territories and is restricted to incentivize electric savings measures only. Additionally, no fuel switching measures can be incentivized through the program. With these restrictions the program is not able to serve the entire multifamily project, only energy efficiency measures associated with electric savings. Creating a fuel-blind source would allow the program to support more properties serving low-income Oregonians throughout the state and incentivize upgrades more holistically (including gas measures).

Task 3. **Expand Green Energy Path options.** OHCS offers funding for multifamily affordable housing projects in a competitive process called the Notice of Funding Availability (NOFA). One of the criteria to be eligible for most NOFAs is that the project must meet one of the Green Energy Path required pathways. Currently, there are four options to meet this requirement: Enterprise Green Communities compliance, Earth Advantage certification, LEED certification or the OHCS Green Building Path. Currently, there are two types of NOFAs, the 4% low-income housing tax credit (LIHTC) program and the Local Innovation and Fast Track (LIFT) Rental Housing Program, that do not require compliance with these Green Energy Paths.

With the most recent release of NOFAs, OHCS has updated these rules. Now all types of NOFAs, including the 4% LIHTC and the LIFT programs, must meet these Green Energy Path requirements. Additionally, the OHCS Green Building Path has been replaced with a self-directed path, that requires hiring a green consultant to help develop a green path appropriate for the individual project, potentially leveraging the energy audit within the project's Capital Needs Analysis (CNA). The green consultant must verify after construction completion that the scope of work was completed as promised.

OHCS has also added two new green modules to their NOFAs. In addition to the Green Energy Path, new construction and substantial rehabilitation projects must ensure the buildings are

solar-ready and electric vehicle (EV)-ready. These new requirements align with additional directives from Executive Order 17-20.

Task 4**. Include a manufactured home replacement program through pilot programs and initiatives.** Over the past several years, the percentage of weatherization dollars administered by OHCS directed toward retrofits of manufactured homes have been increasing – up to 80 percent of funds in one county alone. Many of the manufactured homes receiving weatherization upgrades were built before 1980, prior to any mandated construction code or energy standard, and typically use 70 percent more energy per square foot than a site-built home. These pre-1980 manufactured homes are past their useful life; energy efficiency work in these units is ineffective and expensive.

Acting on this information, OHCS recently launched an initiative that authorizes community action agencies that deliver weatherization services the ability to redirect weatherization funding using dollars for Pacific Power and Portland General Electric service territories to purchase replacements for pre-1980 manufactured homes in lieu of retrofit work. Community action agencies can invest up to $20,000 per unit with this funding source, though other funding partners need to be secured and leveraged to afford the full cost of decommission and replacement of the units. These replacement manufactured homes are above-code, energy-efficient units. BPA has a similar offering when using weatherization dollars from consumer-owned utilities, allowing investment of up to $7,500 per unit with this funding source.

Additionally, OHCS has partnered with Energy Trust of Oregon, as well as CASA of Oregon, NeighborWorks Umpqua, St. Vincent de Paul of Lane County, and regional Community Action Agencies, to design a pilot offering of up to $15,000 per replacement of pre-1980 manufactured homes. This program has a goal of serving 20-40 units by the end of 2019. For more information on this please refer to Appendix C, Energy Trust's marketing piece on this pilot.

OHCS has also proposed a collaborative program that seeks to develop a co-investment strategy, braiding together the funding sources discussed above, resulting in the commitment of $5 million in funding to be used to replace 100 pre-1976 HUD Manufactured Homes across Oregon. The pilot will focus on OHCS's existing portfolio of manufactured home communities, containing over 900 manufactured homes financed and preserved through state multifamily finance resources and weatherization programs. In addition to improving housing stability, the pilot may also improve health outcomes for the Oregonians trading in their old units for new manufactured homes. OHCS will partner with a local university to assess the impact of the

program on resident health. This pilot already has two locations participating: Oak Leaf Mobile Home Park in Portland and Umpqua Ranch Cooperative, Inc. in Roseburg.

Task 5. **Account for multiple values from energy efficiency improvement, such as health and habitability.** It is recommended that options on incorporating health and habitability benefits into OHCS's program be explored. Recent legislative concepts include a proposal the creation of a Healthy Homes Program to research housing health hazards and to provide funds for organizations addressing health hazards. This proposal also suggests the establishment of the Homeownership Repair and Rehabilitation Program to provide grants to nonprofits providing financial assistance to low-income households to increase the habitability of their homes. Both programs are suggested to be implemented through OHCS.

Strategy 2. Consider reviewing the current barriers to integrating various funding sources and pursue program design modifications, where appropriate, to enable combining program efforts to achieve additional savings benefits. Currently, Energy Trust is limited in its ability to serve low-income households in various ways, which results in limiting the State's ability to fund energy efficiency for low-income households. There are several options to consider to expand Energy Trust's ability to assist in reducing the energy burden on low-income households.

Task 1. **Address attribution, program requirements, and data sharing issues that may prevent Energy Trust and OHCS/CAA weatherization funding from being combined efficiently and effectively to fund measures in low-income households.** Addressing these barriers to providing combined funding in these projects would allow existing funds to go further.

Strategy 3. Address gaps in available incentive programs.

Based on the information provided by the affordable housing assessment, the Task Force should identify the most cost-effective, impactful opportunities to significantly reduce the energy burden on low-income households. These opportunities could focus on a specific end use (e.g., hot water heating), measure type (e.g., heat pump retrofits), geography, utility service area or building type. Once identified, these program suggestions should be proposed to utilities, local governments, state agencies and other funding sources, as appropriate. Some examples of potential programs are presented here.

Task 1. **Design a statewide smart thermostat program.** As discussed in the results section of the Potential Savings Assessment, the measure with the most potential savings statewide is installation of smart thermostats. This measure was shown to be the largest natural gas savings measure when installed in units currently heated by standard, non-modulating natural gas

furnaces, and the second largest electric savings measure when installed in units currently heated by electric resistance forced air furnaces and standard, non-inverter heat pumps. (Note: smart thermostats may not pair well with inverter driven heat pumps, as the algorithms for the heat pump control and those in the thermostat may not be compatible.)

Smart thermostats allow you to program a heating and cooling schedule, like a programmable thermostat. But, smart thermostats have additional functionalities including monitoring how the heating and cooling systems are functioning in the unit and reporting back when problems are detected (e.g., the filter needs to be changed, or you need to contact a heating contractor to service your equipment). They also can be controlled by smartphones, they can sense when the house in unoccupied and set-back the temperature set points, and some smart thermostats can learn the occupant's schedule and fine-tune the schedule to optimize energy efficiency. Compared to programmable thermostats, smart thermostats allow maximizing the use of "away time" setbacks, resulting in more reliable savings. In addition, better control of electric strip backup heat in traditional heat pumps can be found when smart thermostats are combined with proper setting of lockout controls. It is recommended that if this program be pursued, that the household receive a best practices document with the new thermostat that explains how to use it to maximize energy savings for their type of heating system.

Smart thermostats have significant statewide potential savings on their own, but they can also provide information that could be used to perform additional, targeted weatherization services in the homes that would benefit most. Smart thermostat-driven weatherization can ensure that traditional electric weatherization measures are only applied to homes with either high use, fast cool down periods, long heating cycles, or that show near real time impact of windy weather. While no specific savings numbers yet exist, several manufacturers and energy efficiency experts are working on the algorithms and projections for how to maximize this data.

The potential savings number below is based on the smart thermostat installation alone. They do not include potential future savings from additional targeted work.

- Potential energy savings from program: 3 million therms and 98 million kWh annually[*]

[*] *As smart thermostats are assumed to be delivered as a retrofit in the Potential Savings Assessment, these annual savings technically can be achieved in year one, or any year after. The feasibility of performing the required number of retrofits to achieve that total savings in one year, however, is improbable.*

- Potential dollar savings from program: $14.7 million annually, or $161 million over the life of the thermostats
- Potential greenhouse gas (GHG) emissions avoided from program: 52,600 metric tons CO_2e annually
- Estimated cost of program: $82 million*

Task 2. **Design a statewide water heating program.** Per the Potential Savings Assessment, the biggest cost-effective opportunity for multifamily units is electric water heating savings. Specifically, the measures identified in the assessment were retrofitting existing electric resistance water heaters with Tier 3 heat pump water heaters, low-flow showerheads (1.5 gpm), kitchen faucet aerators (1.0 gpm) and bathroom faucet aerators (0.5 gpm).

Heat pump water heaters use electricity to move heat from one place to another instead of generating heat directly. Therefore, they can be two to three times more energy efficient than conventional electric resistance water heaters. To move the heat, heat pumps work like a refrigerator in reverse. In the past, there have been concerns about the true efficiency of heat pump water heaters as they use heat from the air around them to heat the water. But, studies over the past few years have shown that even in scenarios with negative space-heat interaction, the heat pump can still provide almost twice the net efficiency when applied to the whole house.

Note: A program such as this seems like an excellent option in Portland, given the recent approval of Portland's Clean Energy bill, which seeks to fund projects that "benefit low income individuals and that broaden access to energy efficiency and clean renewable energy infrastructure to low income communities and communities of color."

- Potential energy savings from program: 204 million kWh annually†‡
- Potential dollar savings from program: $23 million annually, or $311 million over the life of the measures
- Potential GHG emissions avoided from program: 76,000 metric tons CO_2e annually

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* *Cost of the program were calculated assuming that non-measure costs (e.g., administrative, implementation, marketing) would equal approximately 20% of the measure cost.*
† *As water heaters are assumed to be delivered as a replace on burnout in the Potential Savings Assessment, these total savings represent the annual savings that can be obtained by the end of the ten-year plan. The average savings achievable each year would be approximately 1/10 of the values shown here.*
‡ *The low-flow fixtures carry no measure cost, as the Potential Savings Assessment model captures water savings, and that water savings alone more than offsets the upfront costs of the fixtures.*

- Estimated cost of program: $146 million*

Task 3. **Design a new construction program for Southeastern Oregon**. Comparing the low-income population to affordable housing units for each county across the State, it appears that there is a need for more affordable housing in Southeastern Oregon. One of the priorities of the 2018 Oregon's Statewide Housing Plan is to "unlock opportunities for housing development" in rural communities. This potential program could help ensure that the housing developments in these rural communities are energy efficient and leverage cost-effective existing standards.

For single family homes, the potential savings assessment identified EPS™ Path 3 standards[11] as the most cost-effective opportunity for new construction. Through a combination of improved envelopes, measures such as inverter heat pumps, heat pump water heaters, and smart controls, this EPS standard can cost-effectively deliver homes that are 40 percent more efficient than current codes. It can also deliver homes that are future code ready or convertible to Net Zero Energy with the addition of renewables. In addition, these same technologies often make these homes more grid flexible and provide non-wire alternatives to grid modernization through future demand response and distributed energy programs, which could provide additional savings to the occupants in the future as utility rate structures evolve.

For manufactured homes, the assessment identified the NEEM 2.0 standard, also known as ENERGY STAR with NEEM+ certification, as the most cost-effective opportunity for new construction. Traditional manufactured homes do not follow standard state or international energy codes, but instead use an antiquated system designed to allow for inexpensive design and construction. The NEEM program has found cost-effective ways to achieve large savings by requiring more efficient envelopes and high-performance systems in these homes.

- Potential energy savings from program: 1.4 million kWh annually*
- Potential dollar savings from program: $0.2 million annually, or $6.7 million over the life of the housing units
- Potential GHG emissions avoided from program: 537 metric tons CO_2e annually
- Estimated cost of program: $1.9 million†

** As these are new construction measures, these total savings represent the annual savings that can be obtained by the end of the ten-year plan. The average savings achievable each year would equal approximately 1/10 of the values shown here.*

† Cost of the program were calculated assuming that non-measure costs (e.g., administrative, implementation, marketing) would equal approximately 20% of the measure cost.

Appendix A: Potential Savings Methodology

Energy Trust's ten-year forecast for energy efficiency savings follows six overarching steps from initial calculations to deployed energy savings, as shown in Figure 2. The first five steps in the varying shades of blue nodes - Data Collection and Measure Characterization to Cost-Effective Achievable Potential - are calculated within Energy Trust's RA Model. This results in the total cost-effective potential that is achievable over the ten-year forecast.

The actual deployment of these savings (the acquisition percentage of the total potential each year, represented in the green node of the flow chart) is done exogenously of the RA model. The remainder of this section provides further detail on each of the steps shown below.

Step 1 - Data Collection and Measure Characterization

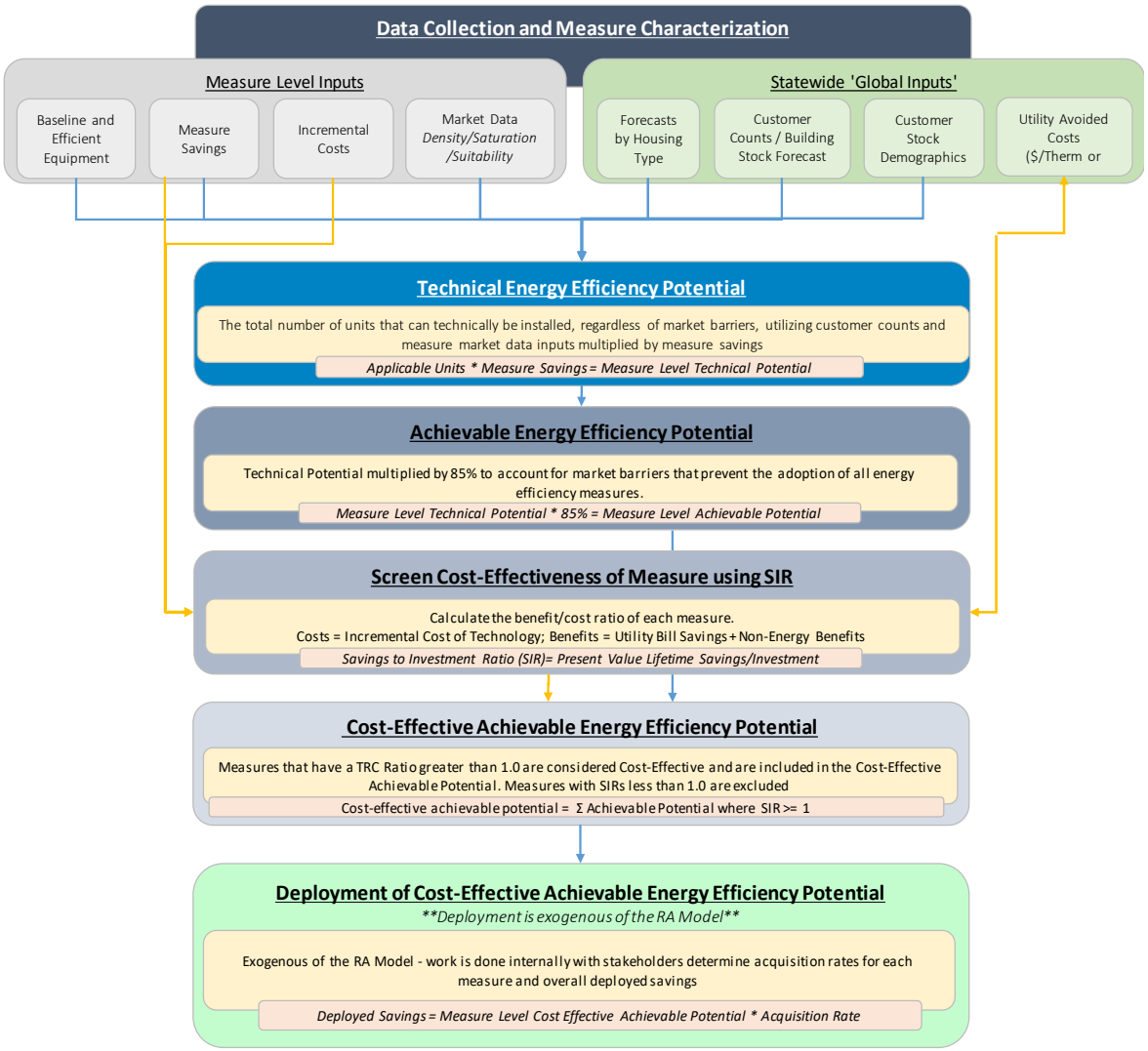
The first step of the modeling process is to identify and characterize a list of measures to include in the model, as well as receive and format statewide "global" inputs for use in the model. Energy Trust compiles a list of commercially available and emerging technology measures for residential applications installed in new or existing structures. The list of measures is meant to reflect the full suite of measures offered by Energy Trust and others, plus a spectrum of emerging technologies.[*] Simultaneous to this effort, Energy Trust collects necessary data from OHCS and governmental agencies to run the model and scale the measure-level savings to a given service territory (known as "global inputs").

- **Measure-Level Inputs:**

  Once the measures to include in the model have been identified, they must be characterized to determine their savings potential and cost-effectiveness. The characterization inputs are determined through a combination of Energy Trust primary data

[*] *An emerging technology is defined as technology that is not yet commercially available but is in some stage of development with a reasonable chance of becoming commercially available within a ten-year timeframe. The model is capable of quantifying costs, potential, and risks associated with uncertain, but high-saving emerging technology measures. The savings from emerging technology measures are reduced by a risk-adjustment factor based on what stage of development the technology is in. The working concept is that the incremental risk-adjusted savings from emerging technology measures will result in a reasonable amount of savings over standard measures for those few technologies that eventually come to market without having to try and pick winners and losers.*

Figure 2 - Energy Trust's Ten-Year DSM Forecast Determination Flow Chart



analysis, regional secondary sources*, and engineering analysis. There are over 30 measure-level inputs that feed into the model, but on a high level, the inputs are put into the following categories:

1. ***Measure Definition and Equipment Identification***: This is the definition of the efficient equipment and the baseline equipment it is replacing (e.g., a ductless mini-split heat pump replacing residential electric resistance space heat). A measure's replacement type is also determined in this step – retrofit, replace on burnout, or new construction.
2. ***Measure Savings****:* The kWh or therms savings associated with an efficient measure calculated by comparing the baseline and efficient measure consumptions.
3. ***Incremental Costs****:* The incremental cost of an efficient measure over the baseline. The definition of incremental cost depends upon the replacement type of the measure. If a measure is a retrofit measure, the incremental cost of a measure is the full cost of the equipment and installation. If the measure is a replace on burnout or new construction measure, the incremental cost of the measure is the difference between the cost of the efficient measure and the cost of the baseline measure.
4. ***Market Data:*** Market data of a measure includes the density, saturation, and suitability of a measure. Density is the number of measure units that can be installed per scaling basis (e.g., the average number of showers per home for showerhead measures). The saturation is the average saturation of the density that is already efficient (e.g., 50 percent of the showers already have a low flow showerhead). Suitability of a measure is a percentage input to represent the percent of the density that the efficient measure is actually suitable to be installed in. These data inputs are all generally derived from regional market data sources such as NEEA's Residential Building Stock Assessment (RBSA).

- **Statewide 'Global' Inputs**:

The RA Model requires several statewide agency level inputs to create the DSM forecast. These inputs include:

1. ***Customer Forecasts****:* These inputs are essential to scale the measure-level savings to a statewide level. For example, residential measures are characterized on a scaling basis

* *Secondary Regional Data sources include: The Northwest Power Planning Council (NWPPC), the Regional Technical Forum (the technical arm of the NWPPC), and market reports such as NEEA's Residential Building Stock Assessment (RBSA)*

per home, so the measure densities are calculated as the number of measures per home. The model then takes the number of homes that identified as "affordable housing" by OHCS and the forecasted number of new homes to scale the measure-level potential to the entire state.

2. ***Customer Stock Demographics****:* These data points are specific to Oregon and identify the percentage of stock that utilize different heating fuels for both space heating and water heating. The RA Model uses these inputs to segment the total stocks to the stocks that are applicable to a measure (e.g., gas storage water heaters are only applicable to customers that have gas water heat). Energy Trust relied on NEEA's latest residential building stock assessment to provide these values.
3. ***Utility Rates****:* Statewide average residential utility rates derived from the Energy Information Administration are applied to savings and present valued. These values are used to screen measures in cost effectiveness and serve as the primary benefits from adopting energy efficiency for participants.

Step 2 - Calculate Technical Potential

Once measures have been characterized and statewide data loaded into the model, the next step is to determine the technical potential of energy that could be saved. Technical potential is defined as the total potential of a measure in the service territory that could be achieved regardless of market barriers, representing the maximum potential energy savings available. The model calculates technical potential by multiplying the number of applicable units for a measure in the service territory by the measure's savings. The model determines the total number of applicable units for a measure utilizing several of the measure-level and utility inputs referenced above.

Total Applicable Units =

Measure Density x Baseline Saturation x Suitability Factor x
Heat Fuel Multipliers (if applicable) x Total Stock (e.g., number of homes)

Technical Potential =

Total Applicable Units x Measure Savings

The measure-level technical potential is then summed up to show the total technical potential across all building types. This savings potential does not consider the various market barriers that will limit a 100 percent adoption rate.

Step 3 - Calculate Technical Achievable Potential

Technical achievable potential is simply a reduction to the technical potential by 15 percent to account for market barriers that prevent total adoption of all cost-effective measures. Defining the technical achievable potential as 85 percent of the technical potential is the generally accepted method employed by many industry experts, including the NWPCC and National Renewable Energy Lab (NREL).

Technical Achievable Potential = Technical Potential x 85%

Step 4 - Determine Cost-effectiveness of Measures using SIR Screen

The RA Model screens all measures in every year of the forecast horizon using the Savings to Investment Ratio (SIR) that measures the cost-effectiveness of the investment being made in an efficiency measure. This test evaluates the total present value of benefits attributable to the measure divided by the total present value of all costs. An SIR value equal to or greater than 1.0 means the value of benefits is equal to or exceeds the costs of the measure and is therefore cost-effective and contributes to the total amount of cost-effective achievable potential. The SIR is expressed formulaically as follows:

SIR = Present Value of Lifetime Benefits / Investment

Where the *Present Value of Lifetime Benefits* includes the sum of the following two components:

- Utility bill savings: The present value of electricity or natural gas saved over the life of the measure, as determined by the total kWh or therms saved multiplied by the average electric or natural gas utility rate per kWh or therm. The net present-value of these benefits is calculated based on the measure's expected lifespan using Energy Trust's discount rate.
- Non-energy benefits are also included when present and quantifiable by a reasonable and practical method (e.g., water savings from low-flow fixtures, operations and maintenance cost reductions from reduced replacements or longer equipment lifetimes).

Where the Investment includes:

- Total measure incremental cost

The cost-effectiveness screen is a critical component for modeling and planning because most programs are limited to incentivize only measures that are cost-effective.

Step 5 - Quantify the Cost-Effective Achievable Potential

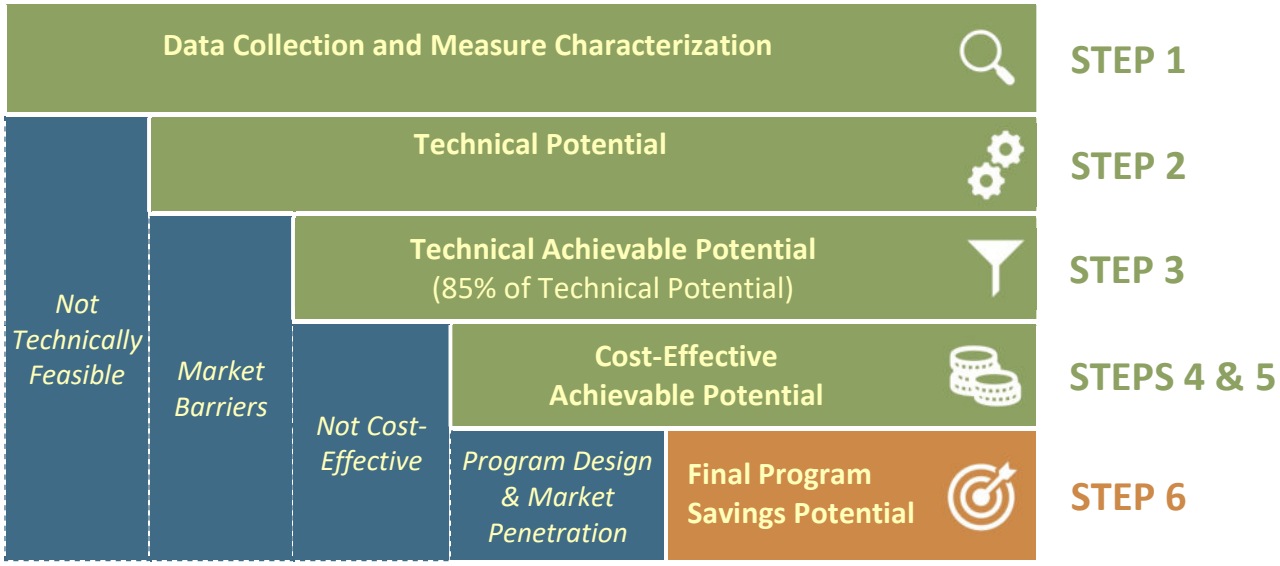
The RA Model's final output of potential is the quantified cost-effective achievable potential. If a measure passes the SIR test described above, then the *achievable savings* (85 percent of technical potential) from this measure is included in the cost-effective achievable potential. If the measure does not pass the SIR test above, the measure is not included in the cost-effective achievable potential.

Step 6 - Deployment of Cost-Effective Achievable Potential

This portion of the model was not completed for the development of this plan, as the analysis was of the savings potential of the market, not specific to any particular program design. When and if programs are designed to deploy these measure installations, this section should be revisited to account for market barriers experienced in similar existing programs, knowledge of current and developing markets, and future codes and standards.

Figure 3 illustrates the types of potential shown in Figure 1 and the corresponding steps above.

Figure 3 - The Progression to Program Savings Projections



Appendix B: Affordable Housing Assessment Index by County

County	High Priority Area Index	Energy Burdened Households <200% FPL (%)	Households <80% AMI (%)	Housing Units Built Prior to 1990 (%)	Non-White Population (%)	Average Energy Affordability Gap* ($)	Total Energy Affordability Gap* ($)	Total Potential Energy Cost Savings† ($)	Total Potential Electric Energy Savings (kWh)	Total Potential Gas Energy Savings (therms)
Baker	3	37%	41%	74%	7%	$763	$2,001,841	$625,849	4,688,555	82,955
Benton	3	31%	47%	66%	16%	$929	$9,687,705	$2,792,409	21,160,454	344,351
Clackamas	2	15%	35%	63%	14%	$764	$17,641,720	$10,017,423	75,250,996	1,302,017
Clatsop	2	26%	38%	70%	11%	$683	$2,822,252	$1,114,793	8,305,993	150,671

* *For energy burdened households <200% FPL.*
† *As a result of energy efficiency improvements in low-income housing.*

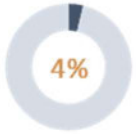
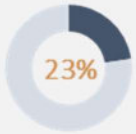
County	High Priority Area Index	Energy Burdened Households <200% FPL (%)	Households <80% AMI (%)	Housing Units Built Prior to 1990 (%)	Non-White Population (%)	Average Energy Affordability Gap* ($)	Total Energy Affordability Gap* ($)	Total Potential Energy Cost Savings† ($)	Total Potential Electric Energy Savings (kWh)	Total Potential Gas Energy Savings (therms)
Columbia	2	23%	44%	64%	8%	$891	$3,949,676	$1,816,961	13,603,974	241,857
Coos	3	40%	43%	77%	11%	$773	$8,002,847	$2,427,727	18,159,032	324,646
Crook	3	45%	44%	52%	9%	$844	$3,499,777	$887,009	6,634,094	118,828
Curry	2	37%	41%	65%	10%	$592	$2,298,555	$997,218	7,779,255	105,449
Deschutes	2	29%	37%	43%	10%	$933	$18,535,712	$5,049,634	37,344,602	710,869

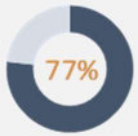
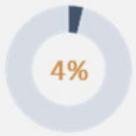
County	High Priority Area Index	Energy Burdened Households <200% FPL (%)	Households <80% AMI (%)	Housing Units Built Prior to 1990 (%)	Non-White Population (%)	Average Energy Affordability Gap* ($)	Total Energy Affordability Gap* ($)	Total Potential Energy Cost Savings† ($)	Total Potential Electric Energy Savings (kWh)	Total Potential Gas Energy Savings (therms)
Douglas	2	29%	40%	71%	8%	$836	$10,679,736	$3,928,921	30,064,515	466,458
Gilliam	3	43%	45%	74%	13%	$906	$308,790	$82,528	599,440	12,628
Grant	3	41%	46%	74%	5%	$976	$1,249,806	$346,577	2,621,131	44,011
Harney	3	44%	44%	77%	10%	$1,207	$1,636,762	$320,495	2,449,081	38,470
Hood River	3	31%	38%	67%	34%	$832	$2,138,964	$625,425	4,640,442	86,606

County	High Priority Area Index	Energy Burdened Households <200% FPL (%)	Households <80% AMI (%)	Housing Units Built Prior to 1990 (%)	Non-White Population (%)	Average Energy Affordability Gap* ($)	Total Energy Affordability Gap* ($)	Total Potential Energy Cost Savings† ($)	Total Potential Electric Energy Savings (kWh)	Total Potential Gas Energy Savings (therms)
Jackson	2	30%	40%	61%	15%	$819	$20,301,970	$6,917,193	52,749,173	833,473
Jefferson	3	44%	35%	53%	39%	$1,090	$3,624,514	$612,568	4,657,055	75,419
Josephine	3	44%	44%	66%	10%	$700	$10,647,781	$3,371,487	25,364,137	438,554
Klamath	3	40%	40%	72%	17%	$804	$8,706,988	$2,450,391	18,540,156	309,413
Lake	3	50%	52%	72%	11%	$888	$1,513,934	$452,325	3,489,616	51,475

County	High Priority Area Index	Energy Burdened Households <200% FPL (%)	Households <80% AMI (%)	Housing Units Built Prior to 1990 (%)	Non-White Population (%)	Average Energy Affordability Gap* ($)	Total Energy Affordability Gap* ($)	Total Potential Energy Cost Savings† ($)	Total Potential Electric Energy Savings (kWh)	Total Potential Gas Energy Savings (therms)
Lane	3	38%	39%	70%	13%	$767	$42,816,244	$10,732,150	81,418,633	1,322,131
Lincoln	3	38%	43%	68%	14%	$679	$5,251,634	$1,933,265	14,794,665	228,983
Linn	3	37%	40%	69%	12%	$726	$12,352,711	$3,666,915	27,818,148	454,227
Malheur	4	46%	48%	78%	37%	$993	$4,700,341	$1,031,913	7,882,791	123,160
Marion	2	30%	37%	67%	31%	$818	$27,881,457	$7,829,111	59,437,203	959,749

County	High Priority Area Index	Energy Burdened Households <200% FPL (%)	Households <80% AMI (%)	Housing Units Built Prior to 1990 (%)	Non-White Population (%)	Average Energy Affordability Gap* ($)	Total Energy Affordability Gap* ($)	Total Potential Energy Cost Savings† ($)	Total Potential Electric Energy Savings (kWh)	Total Potential Gas Energy Savings (therms)
Morrow	3	40%	37%	62%	37%	$1,017	$1,565,892	$333,208	2,589,387	36,195
Multnomah	3	26%	43%	76%	26%	$718	$57,927,455	$21,813,688	164,388,687	2,757,634
Polk	2	24%	35%	55%	18%	$972	$6,792,944	$1,853,764	13,982,495	235,355
Sherman	3	40%	48%	84%	8%	$824	$263,711	$93,882	711,111	11,840
Tillamook	2	36%	40%	64%	13%	$860	$3,154,453	$887,401	6,632,609	119,229

County	High Priority Area Index	Energy Burdened Households <200% FPL (%)	Households <80% AMI (%)	Housing Units Built Prior to 1990 (%)	Non-White Population (%)	Average Energy Affordability Gap* ($)	Total Energy Affordability Gap* ($)	Total Potential Energy Cost Savings† ($)	Total Potential Electric Energy Savings (kWh)	Total Potential Gas Energy Savings (therms)
Umatilla	3					$842	$8,585,223	$2,264,393	17,177,140	280,722
Union	3					$781	$3,105,815	$849,485	6,428,377	106,681
Wallowa	3					$1,120	$1,220,363	$297,386	2,258,008	36,870
Wasco	3					$793	$2,727,221	$802,950	6,074,018	101,076
Washington	2					$739	$28,661,999	$11,546,555	87,248,463	1,440,815

County	High Priority Area Index	Energy Burdened Households <200% FPL (%)	Households <80% AMI (%)	Housing Units Built Prior to 1990 (%)	Non-White Population (%)	Average Energy Affordability Gap* ($)	Total Energy Affordability Gap* ($)	Total Potential Energy Cost Savings† ($)	Total Potential Electric Energy Savings (kWh)	Total Potential Gas Energy Savings (therms)
Wheeler	3					$966	$265,616	$78,867	586,251	10,936
Yamhill	2					$808	$9,210,835	$3,054,370	22,933,334	399,254

Appendix C: Energy Trust of Oregon Manufactured Home Replacement Pilot

ENERGY TRUST OF OREGON MANUFACTURED HOME REPLACEMENT PILOT

Background

Oregon has over 170,000 manufactured homes, representing about 10 percent of total residential building stock. More than 110,000 of these homes were built before 1995, when federal standards for energy efficiency were minimal or non-existent. These older manufactured homes have less insulation in the ceiling, walls and floor than manufactured homes built in 1995 or after; have significant air leakage; and have inefficient windows and heating systems. As a result, residents of these homes spend about 70 percent more on energy per square foot than residents of site-built homes according to the U.S. Energy Information Administration. These higher energy costs disproportionately affect those with lower incomes.

Retrofitting older manufactured homes with efficiency measures can be ineffective and expensive. Attics and walls are usually narrow and/or inaccessible, making it difficult to increase insulation levels. Some older manufactured homes are deteriorating to the point that they cannot be made more efficient. The cost of improvements frequently exceed the home's value and remaining useful life.

Objective

To deliver durable savings to a segment of the rural housing stock where few practical, lasting options exist, **Energy Trust launched a pilot program to retire aging manufactured homes and replace them with code-exceeding energy-efficient new manufactured homes.** In addition to refining the costs and benefits, the pilot aims to build partnerships to establish a replicable model that integrates energy, poverty alleviation and affordable housing investments.

Pilot design

Energy Trust, in partnership with Oregon Housing and Community Services, CASA of Oregon, NeighborWorks Umqua, St. Vincent de Paul of Lane County, and regional Community Action Agencies, will identify qualified homes/parks, seek additional funding opportunities and monitor the impact of retiring and replacing older (pre-1995) manufactured homes with new, energy-efficient models. This innovative approach will benefit manufactured home occupants and communities for decades. It can also provide non-energy benefits such as healthier living conditions and greater economic security.

The new manufactured homes in this pilot will meet the standards of the Northwest Energy Efficient Manufactured Home Program, NEEM, delivering the maximum cost-effective efficiency benefit. Incentives available to the customer for qualified products are based on the NEEM 1.1 specification; additional incentives are available for homes reaching NEEM 2.0 specification. The estimated energy-savings benefits and incentives are as follows, based on replacement of an existing home with a like-sized home:

Energy Trust of Oregon

Energy savings and incentives for replacing older manufactured homes

Home config.	Year built	Climate zone	Energy savings in kWh	Maximum Energy Trust Incentive*
Single-wide	Pre-1976	West of Cascades	7,937	$10,000
		East of Cascades	14,935	$15,000
	1976-1994	West of Cascades	4,723	$7,500
		East of Cascades	9,695	$9,000
Double-wide	Pre-1976	West of Cascades	15,148	$15,000
		East of Cascades	27,656	$17,500
	1976-1994	West of Cascades	9,653	$12,500
		East of Cascades	18,696	$15,000

**Incentive levels reflect conversion to like-sized home. Adjusted incentives are available for single to double-wide conversions.*

Savings estimates for the manufactured home retirement pilot were established by Energy Trust utilizing NEEA's Regional Building Stock Assessment, Northwest Energy Works and NEEA's technical specifications for NEEM credentialed homes, county-level property tax enrollment and Energy Trust data.

Over a two-year period from 2017 to 2019, Energy Trust intends to retire and replace 20 to 40 manufactured homes.

Evaluation efforts will examine pre- and post-pilot home characteristics. The evaluation efforts will:

- Analyze pre- and post-replacement energy bills
- Collect basic home characteristics during program recruitment to continually update and refine assumptions pertaining to existing home stock
- Conduct pre- and post-replacement participant interviews to capture the qualitative benefits and/or challenges to replacing homes

Evaluation activities will help Energy Trust understand energy and non-energy benefits achieved from the replacement homes. The evaluation and anonymized participant interview results will be made publically available to assist program administrators nationally.

Pilot funding structure

Energy Trust is seeking affordable housing solutions that cost no more than 30 percent of a household's income after grants, incentives and other funding. Within manufactured home parks, housing costs include both debt service on a home purchase along with lot space rental or cooperative dues.

The financing package will likely include third-party loans to qualified consumers to purchase homes and/or loans to park owners to purchase homes for use as affordable housing. Energy Trust is engaged with public, nonprofit and private sector lenders to explore accessible and affordable loan options for manufactured home replacements.

Get involved

This pilot's success depends on the collaboration and engagement of many organizations and individuals, including participants, funding partners and lenders. To date, recruitment efforts have targeted parks owned and operated by nonprofits or member-owned cooperatives. Energy Trust seeks to work in parks with stable ownership, a demonstrated record of prioritizing resident needs and critical capital improvement needs.

If you know of interested homeowners, property managers or manufactured home parks within Energy Trust service territory that have potential to benefit for participation in this pilot, we want to hear from you. Email Mark Wyman at **mark.wyman@energytrust.org** or call **503.445.2950**.

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UE 435 – CERTIFICATE OF SERVICE

I hereby certify that, on this 10th day of September 2024, I served the foregoing **CUB REBUTTAL TESTIMONY & EXHIBTS** in **UE 435** upon the Commission and each party designated to receive confidential information pursuant to Order 23-132 by secure 7-zip file.

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