

ORDER NO. 25-004

ENTERED Jan 08 2025

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1696

In the Matter of

PUBLIC UTILITY COMMISSION OF
OREGON,

Energy Trust of Oregon Request for
Exceptions to Cost-effectiveness for
Multiple Heat Pump Measures.

ORDER

DISPOSITION: STAFF'S RECOMMENDATION ADOPTED

At its public meeting on January 7, 2025, the Public Utility Commission of Oregon adopted Staff's recommendation in this matter. The Staff Report with the recommendation is attached as Appendix A.

BY THE COMMISSION:



Alison Lackey

Chief Administrative Law Judge



A party may request rehearing or reconsideration of this order under ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements in OAR 860-001-0720. A copy of the request must also be served on each party to the proceedings as provided in OAR 860-001-0180(2). A party may appeal this order by filing a petition for review with the Circuit Court for Marion County in compliance with ORS 183.484.

ITEM NO. CA1

**PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: January 7, 2025**

REGULAR _____ CONSENT X EFFECTIVE DATE _____ N/A _____

DATE: December 30, 2024

TO: Public Utility Commission

FROM: Peter Kernan

THROUGH: Caroline Moore, JP Batmale, and Sarah Hall **SIGNED**

SUBJECT: OREGON PUBLIC UTILITY COMMISSION STAFF:
(Docket No. UM 1696)
Energy Trust request for exceptions to cost-effectiveness for multiple heat pump measures.

STAFF RECOMMENDATION:

Adopt Staff's proposed schedule for submission of public comments and of Staff's final recommendation to approve major cost-effectiveness exceptions for multiple heat pump measures, as requested by Energy Trust of Oregon (Energy Trust).

DISCUSSION:

Issue

Whether the Commission should adopt the schedule for public comment and for Staff's presentation of its final recommendation on cost-effectiveness exceptions for multiple heat pump measures.

Applicable Law

ORS 469.760(2) sets a state goal of installing and using 500,000 new heat pumps by 2030. To meet that goal, the Legislature in ORS 469.760(2)(c) established a goal that programs and support for accelerating heat pump adoption should prioritize environmental justice communities and individuals who reside in houses and structures that do not have a functioning, adequate or affordable heating or cooling system.

In addition, under ORS 757.695(1), the Commission may address the mitigation of energy burdens on customers as described in ORS 757.230(1) through various

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measures, including demand response and weatherization programs.

On August 19, 2024, the Commission and Energy Trust of Oregon (Energy Trust) entered into an Agreement to Direct Funding to Nongovernmental Entity (Agreement). Exhibit A of the Agreement provides that energy efficiency programs “generally must use measures and incentive levels that are cost-effective. Energy Trust may apply the Total Resource Cost (TRC) test, Utility Cost Test (UCT) or another test approved by the PUC to demonstrate cost-effectiveness. . .”¹ Exhibit A also authorizes Energy Trust to request and receive an exception from the Commission from the use of a cost-effectiveness test of energy efficiency measures. Exhibit A of the Agreement states that an exception from the use of a cost-effectiveness test may be granted for a measure, building or program, as applicable (collectively referred to here as “measure”), when:

- A. The measure produces significant non-quantifiable non-energy benefits;
- B. Inclusion of the measure will increase market acceptance and is expected to lead to reduced cost of the measure;
- C. The measure is included for consistency with other demand side management (DSM) programs in the region;
- D. Inclusion of the measure helps to increase participation in a cost-effective program;
- E. The package of measures cannot be changed frequently, and the measure will be cost-effective during the period the program is offered;
- F. The measure or package of measures is included in a pilot or research project intended to be offered to a limited number of customers;
- G. The measure is required by law or is consistent with Commission policy and/or direction; and

¹ The cost-effectiveness test required under Order No. 94-590 is the Total Resource Cost Test (TRC). In The Matter Of An Investigation Into The Calculation And Use Of Conservation Cost-effectiveness Levels, Docket No. UM 551, Order No. 94-590 (April 6, 1994). Energy Trust has used the TRC test with the approval of the Commission since its inception to guide what measures can be offered by Energy Trust programs. Energy Trust has used the Utility Cost Test (UCT) to set the maximum allowable incentive amount that can be offered to participants. The TRC measures cost-effectiveness from the total utility system perspective and includes costs and benefits incurred by both participants and non-participants. The UCT measures costs and benefits from the perspective of the utility only and does not consider the non-energy benefits or incremental measure costs experienced by program participants.

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H. Inclusion of the measure mitigates energy burden.

Under the August 19, 2024, Agreement, Energy Trust may request an exception pursuant to processes directed by the Commission or as otherwise required by law alternative guidelines set by the Commission. The process to consider cost-effectiveness exceptions was last discussed in Docket No. UM 1622 and is as follows:²

- For minor exception requests, where the size and scope are limited, Energy Trust provides details to OPUC Staff who review and if appropriate, provide approval through an email. A copy of the email is kept on file by OPUC Staff.
- For major exception requests, Energy Trust provides an official filing and requests an exception. OPUC Staff makes formal recommendations to the Commission at a public meeting. Commissioners then decide on the exception request at the public meeting. For more significant requests, the recommendation presentation and the decision may occur on different meetings to allow more time for comments.

Analysis

Background

Energy Trust seeks major exceptions to cost-effectiveness tests for two groups of heat pump measures. Exception Request 1 seeks a Total Resource Cost (TRC) exception for market-rate, moderate income, and community partner funded measure applications of ductless heat pumps (DHPs). Exception Request 2 seeks both TRC and Utility Cost Test (UCT) exceptions for no-cost measure applications of DHPs, ducted heat pumps, and heat pump water heaters (HPWH). Both requests include measure applications in single family, multifamily, and manufactured housing.

Heat pumps are an increasingly common and highly efficient form of water heating and space heating and cooling. With House Bill (HB) 3409 (2023), the Oregon Legislature found that electric heat pumps are the most energy efficient space heating option available in the market, and an essential technology for minimizing energy burdens and reducing customer bills.³ Heat pumps are increasingly an essential technology in

² Order No. 14-332, In the Matter of Energy Trust of Oregon, Request for Approval of Exceptions to Cost-effectiveness Guidelines, Docket No. UM 1622, (October 1, 2014).

³ ORS 469.760(1). Note that 469.760 to 469.772 were enacted into law by the Legislative Assembly but were not added to or made a part of ORS chapter 469 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

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providing efficient cooling, as Oregon's adoption of cooling in single family housing increased from 51 percent in 2011 to 68 percent by 2022.⁴

Energy Trust offers a wide array of heat pump measures in both its Residential and Existing Building Programs. To increase heat pump accessibility via both programs, Energy Trust uses multiple delivery channels, including:

- Market rate offers available to the public,
- Increased incentives for moderate income households,
- Even higher incentives for Energy Trust's community partners to deliver measures, and
- No-cost offers for qualifying low-income customers.

In addition to Energy Trust's on-the-ground deployment efforts, heat pumps are a complementary and strategic market transformation opportunity for the Northwest Energy Efficiency Alliance (NEEA). NEEA runs active initiatives covering all the product types in Energy Trust's proposal: HPWH, DHP, and ducted heat pumps via NEEA's Advanced Heat Pump initiative.

The Commission granted Energy Trust cost-effectiveness exceptions for heat pump measures dating back to 2014, with Order No. 14-226 providing a major TRC exception for DHP measures.⁵ In the decade since, the Commission consistently granted additional DHP exceptions for measures in single family, multifamily, and manufactured housing.⁶ The most-recent exception, covering heat pump products is Order No. 22-024, included three requests:

1. First, the Commission approved a UCT and TRC exception for DHPs in single family and manufactured housing.
2. Second, the Commission approved a TRC exception for DHPs in multifamily.
3. Finally, the Commission approved a three-year, no-cost DHP pilot with an incentive cap of \$5 million.

Due to high demand for the no-cost pilot, in 2024 the Commission raised the incentive cap to \$7M.⁷ No-cost ducted heat pump and no-cost HPWH pilots are currently

⁴ NEEA 2022 Regional Building Stock Assessment, p. 21, (April 2024),

<https://neea.org/img/documents/2022-Residential-Building-Stock-Assessment.pdf>.

⁵ Order No. 14-226, (July 22, 2014), <https://apps.puc.state.or.us/orders/2014ords/14-266.pdf>.

⁶ See generally Docket No. UM 1696, Order Nos. 17-457, 19-301, 20-105, 22-024, 24-142.

⁷ See Docket No. UM 1696, Order No. 24-142, (May 20, 2024),

<https://apps.puc.state.or.us/orders/2024ords/24-142.pdf>.

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operated without cost-effectiveness exception due to their smaller budgets and coverage as Program Delivery Pilots (PDP).

Energy Trust and NEEA continue to collaborate in a dynamic heat pump market and remain relevant and impactful in their respective roles. Staff highlights a few of the major market drivers to provide context for Energy Trust's request:

- In 2022, the Biden administration invoked the Defense Production Act to invest \$250 million in domestic manufacturing and deployment of heat pumps.
- The Inflation Reduction Act (IRA) (2022) established tax credits of up to \$2,000 for households that purchase heat pumps and heat pump water heaters.
- Significant co-funding will be available via Federal Home Energy Rebates programs (U.S. Department of Energy's HOMES/HEAR programs), the Portland Clean Energy Fund (PCEF), and Oregon Department of Energy's (ODOE) heat pump programs, all of which prioritize deployment in low- and moderate-income households.
- New Federal standards under the Energy Policy and Conservation Act (EPCA) (2005) increase the efficiency of heat pump products and a Final Rule on electric water heaters will make HPWH the standard by May 6, 2029.⁸
- In the Northwest, Bonneville Power Administration's market research found that heat pumps had a 61 percent market share of 2022 residential HVAC sales, outselling gas furnaces for the first year.⁹
- In Oregon, HB 3409 set a goal of 500,000 new heat pumps installed and used by 2030.

Requests

Energy Trust seeks major exceptions to cost-effectiveness tests for two groups of heat pump measures. Energy Trust's full proposal with tables outlining savings and cost-effectiveness can be found in Appendix A of this Staff memo.

Exception Request 1

Exception Request 1 is a continuation of existing offers in the market for DHPs in single family, multifamily, and manufactured housing. It includes measures offered via distinct delivery channels for market rate customers, customers experiencing moderate incomes, and customers experiencing low incomes. Existing measure exceptions are

⁸ 89 FR 37778, <https://www.federalregister.gov/documents/2024/05/06/2024-09209/energy-conservation-program-energy-conservation-standards-for-consumer-water-heaters>.

⁹ *Northwest HVAC Market Snapshot 2022*, Bonneville Power Administration, January 2024, p. 7, <https://www.bpa.gov/-/media/Aep/energy-efficiency/momentum-savings/2022-hvac-market-snapshot.pdf>.

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set to expire March 31, 2025. Energy Trust requests TRC exceptions through March 31, 2028.

To deliver measures covered by Exception Request 1, Energy Trust proposes to spend \$5.8M in incentives in 2025 and acquire 4,587,588 kWh of savings. Energy Trust's residential heat pump measure exceptions represent 5.7 percent of Residential program incentives and 4.3 percent of Residential Program savings. Heat pump measure exceptions are expected to represent 7.6 percent of Existing Building program incentives and 3.1 percent of program savings. In absolute terms, 2025 expenditures and savings are a slight decline from 2024 levels.

TRC scores range from 0.3 to 0.9. All incentives are capped at a maximum level to achieve a UCT benefit-cost ratio of 1.0. High incremental costs are the primary driver for low TRC scores compared to the UCT. Heat pump benefit-cost ratios reflect counterbalancing drivers in 2024. Higher electric avoided costs are offset by a recent impact evaluation showing lower-than-expected savings for DHP measures.¹⁰

Benefit-cost ratios do not reflect any co-funding because using co-funding is not a requirement of participation. However, Staff notes that there is a reasonable expectation that, particularly in 2026 and beyond, many customers will also receive incentives from other sources (e.g., HOMES/HEAR, PCEF, and ODOE). Energy Trust will include these incentives in cost-effectiveness reporting, and Staff will request annual reports of the in-market cost-effectiveness of each year's program.

Energy Trust is seeking exception under the following criteria:

- C. Measure is included for consistency with other demand side management programs in the region.
- G. The measure is required by law or is consistent with Commission policy.

Exception Request 2

Exception Request 2 represents a continuation of no-cost pilot activities and a transition from treatment as Program Delivery Pilots to measures offered under cost-effectiveness exceptions. Energy Trust seeks UCT and TRC exceptions for three no-cost products: DHPs, ducted heat pumps, and HPWHs. Each product includes measures in the Residential program (single family and manufactured housing) and the Existing Building program (multifamily). The existing pilot programs are set to expire on March 31, 2025. Energy Trust requests exceptions through at least March 31, 2030.

¹⁰ Energy Trust, *Billing Analysis of Residential Ductless Heat Pump Installations*, (Aug. 5, 2024), <https://www.energytrust.org/wp-content/uploads/2024/08/FINAL-REBA-DHP-Report-Memo-with-Output-Summaries.pdf>.

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To deliver measures covered by Exception Request 2, Energy Trust proposes to spend \$5.9M to acquire 2,090,046 kWh of savings in 2025. Energy Trust's no-cost Residential measures represent 8.5 percent of Residential program incentives and 2.7 percent of program savings. No-cost heat pump measures in Exception Request 2 represent 5.1 percent of Existing Building incentives and 0.8 percent of Existing Building program savings. Compared to the 2024 budget, Energy Trust proposes an increase in absolute spending and savings on no-cost offers.

TRC scores range from 0.3 to 1.2, and UCT scores range from 0.2 to 0.7. No-cost measures score particularly low on the UCT, because incentive levels are set to cover the entire installation cost, not simply the incremental cost. UCT scores reflect measures installed at the maximum incentive, which includes some buffer to cover full costs for a subset of projects with additional ancillary costs. Most projects are expected to use less than the maximum incentive.

As with Exception Request 1, many projects will qualify for co-funding. However, since co-funding is not a condition of participation, the benefit-cost ratios do not reflect application of those funds. Once those funds enter the market, Energy Trust will collect those amounts and apply them to program-level cost-effectiveness reporting. Staff will request annual reports of the in-market cost-effectiveness of each year's program

Energy Trust seeks exception under the following criteria:

- E. The package of measures cannot be changed frequently, and the measure will be cost-effective during the period the program is offered.
- G. The measure is required by law or is consistent with Commission policy.

Current Exceptions

As of November 25, 2024, Energy Trust offered 16 measures covered by exceptions.¹¹ Year-to-date in 2024, Energy Trust invested \$7.28M in incentives for all measures under every exception, totaling 8 percent of its total incentive spend. Savings from measures under exception are 1.8 percent of electric savings and 0.6 percent of gas savings.

In 2025, Energy Trust proposes \$10.7M in heat pump incentives under exception out of a 2025 incentive budget of \$122.3M in electric incentives. Thus, heat pump exceptions alone are expected to be 8.7 percent of incentive spend. Energy Trust included the

¹¹ See Energy Trust 2025 Budget, *Measure Cost-Effectiveness Exceptions Status as of November 25, 2024*, pp. 26-28, https://www.energytrust.org/wp-content/uploads/2024/12/200_FP-memos.pdf.

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expectation of the measures in prospective benefit-cost ratios, and Table 1 shows forecasted 2025 cost-effectiveness.

Table 1: Energy Trust's Forecasted 2025 Benefit-Cost Ratios¹²

Program	TRC	UCT
Electric Residential	1.0	1.1
Electric Existing Building	1.4	1.6
Cumulative Electric Portfolio	1.5	2.0

Energy Trust's 2025 budget remains cost-effective with these exceptions. In Staff's memo discussing Energy Trust's 2025 budget, Staff encouraged Energy Trust to consider investments that yield additional savings despite higher costs, while maintaining portfolio level cost-effectiveness.¹³ These exceptions reflect an investment aligned with Staff's recommendation. Staff notes that a somewhat natural cap to these exception requests is the current expectation that Energy Trust's programs and overall portfolio pass the TRC and UCT, with the portfolio-level perspective having considerably more headroom than program-level benefit-cost ratios.

Staff Discussion

Staff supports the requested three-year window for Exception Request 1 and the five-year window for Exception Request 2. Staff finds that the measure exceptions will help accelerate heat pump adoption to aid in meeting the state's goal of 500,000 heat pumps by 2030. The five-year request for no-cost measures also aligns with the anticipated in-market duration of HOMES/HEAR and PCEF. In total, the three-year and five-year stability will support in achieving exception criteria E by minimizing changes in support of developing cost-effective measures.

Energy Trust's request also meets criteria C, by offering heat pump measures which are consistent with regional offerings. With these measure exceptions, Energy Trust will gain valuable flexibility in partnering with and delivering consistent programs alongside external entities. HOMES/HEAR, PCEF, ODOE, and future programmatic offerings can all help reduce Energy Trust's costs per install or increase the volume of installs, or both. In any scenario, external programs promise more cumulative cost-effective savings. To be concrete, co-funding which covers repair costs enables weatherization. Thus, co-funding for enabling repairs shifts a measure from the technical potential category to cost-effective, achievable potential, and can be thought of as an expansion

¹² Energy Trust 2025 Budget, *Benefit Cost Ratios for Final Proposed 2025 Budget*, p. 7, https://www.energytrust.org/wp-content/uploads/2024/12/200_FP-memos.pdf.

¹³ See *Presentation of 2025 Draft Budget and Action Plan*, (November 5, 2024), https://oregonpuc.granicus.com/MetaViewer.php?view_id=2&clip_id=1409&meta_id=40384.

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of energy efficiency potential. When co-funding reduces ratepayer contributions, it improves cost-effectiveness.

Staff notes that these heat pump exceptions meet criteria G and are consistent with state law and Commission policy. However, Staff finds that these exceptions alone are not enough to meet the HB 3409 heat pump deployment goal. The state, and partners such as Energy Trust, must also consider lower-cost and broader market interventions such as midstream interventions and subsidized, consumer-friendly lending options.

Staff finds that Energy Trust's requests also meet criteria H: Inclusion of the measure mitigates energy burden. This is consistent with the Legislature's finding in HB 3409 that heat pumps represent the most efficient form of space heating and can reduce customer costs. Energy Trust's analysis indicates that approximately 67 percent of households with electric resistance heat are also considered moderate or low-income, which represents a significant opportunity for energy and cost savings.¹⁴ Improved targeting methods using customer data can enhance individual customer experiences and improve cost-effectiveness.

The heat pump measures covered by these exception requests can achieve even greater individual and collective benefit by serving energy burdened households. Staff expects Energy Trust to work with Community Based Organizations (CBOs) and utilities to use utility data and target customers experiencing energy burden. Exception Request 2, the no-cost measure exceptions, are expensive. The benefit of those exceptions can be maximized by serving customers on bill discount programs, especially customers with high energy consumption and those enrolled in higher bill discount tiers. Consistent with its 2025 budget memo recommendation 1, Staff will track Energy Trust's progress in using utility data to target customers for maximum energy burden reduction and ratepayer benefit, including impacts on cost-effectiveness.¹⁵

Customer Fuel Choice

Staff anticipates that a challenge in serving homes may be the presence of gas as the primary heating fuel. In Energy Trust's evaluation of its no-cost DHP pilot, CBOs reported that the restriction against serving gas-heated homes constrained their ability to serve certain households.¹⁶ Staff understands that these measure exceptions are specifically intended to replace electric resistance heat, but may also serve households using wood, propane, and oil. Consistent with Staff's budget recommendation 2, Energy Trust should collect and report relevant existing conditions data to the best of its ability.

¹⁴ Appendix A, p. 1.

¹⁵ 2025 Budget Memo, p. 24.

¹⁶ Apex Analytics, *No Cost Pilots Interim Evaluation Findings Memo*, (Dec. 2, 2024), pp.18-19.

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In future updates, Energy Trust may need to work with both electric and gas utilities to explore serving homes that wish to participate and currently have gas heat.

HOMES/HEAR, PCEF, and ODOE programs all either allow or encourage heat pumps for space and water heating, independent of existing fuel. Staff recommends Energy Trust continue to target and prioritize energy burden reduction with the delivery of no-cost measures. This inherently should target the most expensive forms of heating and water heating—electric resistance and oil. Staff supports flexibility for Energy Trust to serve edge cases such as homes with bulk fuels or non-functioning equipment.

Additionally, to successfully support CBOs delivering complementary programs, Energy Trust may need to consider additional heat pump offerings that are agnostic to existing fuel type. Staff believes that this is consistent with Energy Trust's policy that fuel source is a customer choice.¹⁷ Staff acknowledges that co-delivery of heat pump measure exceptions with external programs will be complex, and prioritization frameworks are an additional challenge within those external program constraints.

Stakeholder Engagement

With heat pump exception requests dating back to 2014, Energy Trust has frequently and regularly engaged stakeholders on heat pump measures. The Conservation Advisory Council (CAC) remains a valuable channel for communicating program design, evaluation results, and exception requests. Energy Trust's prior heat pump exception, granted with Order No. 22-024, was supported with written comments from Community Energy Project, Clackamas County Department of Transportation & Development, and Representative Pam Marsh. Additionally, Energy Trust works with 21 different CBOs to deploy no-cost measures, and thereby its program design reflects the collective views of many entities. Staff looks forward to reviewing additional stakeholder feedback prior to presenting a final Staff position.

Staff's Recommendation

Staff preliminarily proposes approving both Energy Trust exception requests. If approved, Staff expects Energy Trust to work with CBOs and utilities to use utility data and target customers experiencing energy burden. The no-cost measure exceptions are expensive, and their benefit can be maximized by serving customers on bill discount programs, especially customers with high energy consumption and enrolled in higher bill discount tiers.

¹⁷ Energy Trust, *4.03.000-P Aligning with Oregon's Decarbonization Policies*, (Oct. 11, 2023), <https://www.energytrust.org/wp-content/uploads/2016/11/4.03.000.pdf>.

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Staff invites stakeholders to comment on the proposed changes and Staff's assessment. Staff proposes that the Commission adopt a schedule to allow the filing of public comment through January 21, 2025. This provides stakeholders with two weeks after the January 7, 2025, public meeting to review and respond to Energy Trust's request. If the Commission adopts the proposed schedule, Staff will receive and compile comments, and return at the February 18, 2025, public meeting with a final recommendation.

Proposed Schedule

Event	Date
Deadline to file written public comments in Docket No. UM 1696 or contact Staff on Staff's recommendation discussed herein	January 21, 2025
Staff's final recommendation at Commission Public Meeting	February 18, 2025

Conclusion

Staff's preliminary conclusion is the Commission should approve the exceptions outlined in this memo. Staff proposes that stakeholders have until January 21, 2025, to file comments or contact Staff regarding the recommended changes. Staff will present stakeholder comments and its final recommendations at the February 18, 2025, Public Meeting.

PROPOSED COMMISSION MOTION:

Adopt Staff's proposed schedule for submission of public comments and of Staff's final recommendation to approve major cost-effectiveness exceptions for multiple heat pump measures, as requested by Energy Trust of Oregon (Energy Trust).

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Measure Exception Requests: Ductless Heat Pumps in Single Family, Manufactured and Multifamily Homes; and No-Cost Offers for Ductless Heat Pumps, Ducted Heat Pumps, & Heat Pump Water Heaters

Energy Trust is submitting two major exception requests for consideration:

1. **Exception Request I:** A major TRC exception related to our market-rate, moderate income, and community partner funded measure applications for ductless heat pumps (DHP). The measures outlined in this request are DHP in single-family and Manufactured Housing & DHP in Multifamily.
 - a. Energy Trust proposes that Exception Request I be in place through at least March 31, 2028.
2. **Exception Request II:** A major UCT and TRC exception for no-cost measure applications for ductless heat pumps (DHP), ducted heat pumps (HP), and heat pump water heaters (HPWH) in single family, multifamily and manufactured homes.
 - a. Energy Trust proposes that Exception Request II be in place through at least March 31, 2030.

The measures included in both Exception Request I and II include several current exceptions set to expire on March 31st, 2025. In order to continue delivering these measures to customers, Energy Trust humbly requests a decision by the end of February 2025. If approved, Energy Trust aims to continue to offer these measures beginning on April 1, 2025.

Overview

Heat pumps provide heating and cooling in homes and are a highly efficient technology to replace electric resistance heating. Heat pump configurations include ductless heat pumps (DHPs), which provide zonal heating and cooling and ducted heat pumps, which provide central heating and cooling. In the Northwest region, NEEA estimates that 82% of multifamily housing has electric resistance heating and 17% of single-family (including manufactured homes)¹ has electric resistance heating. Many rural areas in the state do not have gas service and are more likely to have resistance heating and/or rely on supplemental fuel, such as propane, heating oil, or wood. According to a recent analysis synthesizing American Community Survey 5-year Public Use Microdata Sample (2018-2022)² and NEEA's Residential Building Stock Assessment (2022), approximately 67% of households with electric resistance heat are also considered moderate or low income.³

Heat Pump Water Heaters (HPWH) are a highly efficient alternative for homes with electric resistance storage water heating. Electric resistance storage water heating uses more energy and has higher operating costs than HPWHs. In the Northwest region, NEEA estimates that only

¹ NEEA 2022 RBSA: <https://neea.org/img/documents/2022-Residential-Building-Stock-Assessment.pdf>

² <https://www.census.gov/programs-surveys/acs/microdata.html>

³ Analysis available upon request

3% of single-family homes have heat pump water heaters and that none of the multifamily buildings in the Residential Building Stock Assessment sample had heat pump water heaters⁴. These results indicate the significant market potential for this technology.

These technologies are essential for Energy Trust's long-term strategy to serve customers in single-family, manufactured, and multifamily homes. This includes developing and expanding market channels for delivering these offers, including via trades (e.g., trade allies and contractors), via community partners (e.g., community-based organization and housing organization) and via program staff. These are key offers and delivery channels in helping us reach customers historically underserved by Energy Trust programs. Energy Trust has supported the market development for these technologies in partnership with NEEA and regional partners. Energy Trust is currently running three no-cost pilots that are crucial for building resources and expertise within our community partners to support technology installations for priority residential customers. The pilots will be wrapping up in 2025 and the exception will allow us to continue these no-cost offers. These exception requests will enable Energy Trust to further advance the adoption of heat pumps in Oregon, strengthen delivery channels, and deliver more direct benefit to customers.

Exception Request I – TRC for Ductless Heat Pumps (DHPs) in Various Home Types

The measures included in Exception I include the DHP in Single-Family, Manufactured Housing and Multifamily. This section excludes no-cost offerings, which are addressed later in this document in Exception II.

Energy Trust's DHP offerings are delivered via two major programs: Residential Program includes single-family and manufactured homes and multifamily homes through the Existing Buildings Program. These offers focus on providing efficiency upgrades for homes that are primarily electric resistance-heated where new centrally ducted HVAC systems are not the best solution for these customers.

Programs provide incentives and support for DHP installations in these housing categories, helping to improve heating efficiency, comfort, and energy savings. The program reduces upfront costs, making DHPs more accessible to a range of customers across income tiers. The incentive offerings vary by household income level to meet specific customer needs. Energy Trust's 2023 Fast Feedback survey of past participants indicated that 43% of DHP installations occurred in households that have incomes of less than \$70,000. A high-level summary of delivery channels by household income ties is as follows:

1. Customers experiencing incomes above moderate income (market rate)
 - a. Standard incentives via contractors and trade allies
2. Customers experiencing moderate incomes
 - a. Enhanced incentives delivered via contractors and trade allies (Savings Within Reach, rental initiatives, regional promotions)
 - b. Enhanced incentives delivered via community partners (Community Partner Funding)
 - c. Enhanced incentives (not full cost) delivered via program representatives (In-Home Energy Services)

⁴ NEEA RSBA 2022: <https://neea.org/img/documents/2022-Residential-Building-Stock-Assessment.pdf>

3. Customers experiencing low incomes
 - a. Enhanced incentives (not full cost) and no-cost incentives delivered via community partners (Community Partner Funding)
 - b. Enhanced incentives (not full cost) and no-cost incentives delivered via program representatives (In-Home Energy Services)

Within these incentive tiers and delivery mechanisms, Energy Trust runs promotions in select regions with a high participation of customers experiencing low and moderate incomes and low program participation rates.

Reason for exception

This measure falls under the following exception criteria:

C. Measure is included for consistency with other DSM programs in the region.

Energy Trust provides support and coordinates with Northwest Energy Efficiency Alliance (NEEA) on the development of the DHP market which is paramount to support the regional efforts to promote this technology. Also, in partnership with NEEA, there are several DSM programs in the region similar to ours. Bonneville Power Administration (BPA) offers incentives for various heat pump technologies through public utility programs.

In 2022, Oregon Legislature's passing of SB 1536 resulted in the Oregon Department of Energy (ODOE) creating two distinct heat pump offerings: Community Heat Pump Deployment Program for owner-occupied single-family, manufactured homes, and multifamily, along with the Oregon Rental Home Heat Pump program to support rentals across multiple dwelling unit types, including owner-occupied recreational vehicles and manufactured dwelling spaces on rental spaces. Each program provides rebates and grants, ranging from \$5,000 to \$7,000, for the installation of eligible heat pumps as well as mechanical and electrical upgrades that facilitate the installation of heat pumps. Energy Trust coordinated qualifying heat pump efficiency requirements with ODOE to allow for combination with our existing programs in Residential and Existing Buildings.

ODOE is developing a program for their Home Energy Rebates (HOMES/HEAR) which will incentivize the installation of efficient heat pump technology.

Portland Clean Energy Fund (PCEF) is also developing a program for residential and multifamily customers which will incentive the installation of heap pump technology.

Energy Trust provides support and coordinates with Northwest Energy Efficiency Alliance (NEEA) on the development of the DHP market which is paramount to support the regional efforts to promote this technology.

G. The measure is required by law or is consistent with Commission policy.

Executive Order 20-04⁵ emphasizes reducing greenhouse gas emissions and this exception allows for efficient electric heating and cooling technology that reduces greenhouse gases. The no-cost offerings discussed later in the document will reach only a portion of customers experiencing low and moderate incomes. This exception also allows Energy Trust to reduce

⁵ Executive Order No. 20-04: https://www.oregon.gov/gov/eo/eo_20-04.pdf

the energy burden of other customers experiencing low incomes, particularly in homes where electric resistance heating is common.

Prevalence

In 2024, the DHP in Single-Family and Manufactured Housing made up 11% of Residential program electric incentives and 6% of electric savings. Annual savings are expected to be about 3,833,787 kwh. Its incentives are forecasted to be \$3,547,438 in 2024 and make up 11% (same as mentioned above) of Residential program and 23% of Home Retrofit and Existing Manufactured Homes Program track budget. These numbers include residential DHP measure applications, with the exception of no-cost offers, some of which were cost effective at the time of their approval or are cost effective because of co-funding. Forecasts for 2025 are included in Table 1.

In 2024, DHPs in Multifamily, excluding no-cost offerings, made up 4% of Existing Buildings Program and 16% of prescriptive track savings. Annual savings are expected to be about 2,813,115 kwh. Its incentives are forecasted to be \$2,865,423 in 2024, which makes up approximately 11% of Existing Buildings program and 40% of the prescriptive track budget. Forecasts for 2025 are shown in Table 1.

Table 1: Forecasted Incentives and Savings from Exception Request I: Market Rate, Moderate Income, and Community Partner Funded for Ductless Heat Pumps

Program	Offer	2025 Incentives (\$)	Percent of 2025 Program Incentives	2025 Savings (kWh)	Percent of 2025 Program Savings
Residential	Ductless Heat Pumps	\$3,102,788	5.7%	2,352,672	4.3%
Existing Buildings	Ductless Heat Pumps in Multifamily	\$2,704,033	7.6%	2,558,755	3.1%
Total		\$5,806,821		4,587,588	

Cost Effectiveness details

Table 2 shows our updated savings and cost estimates which Energy Trust plans to begin using in 2025. These represent four distinct measure applications based on the intended program designs.

Table 2 – Cost-Effectiveness of Measure Applications

Measure	Savings (kWh)	Incremental Costs (\$)	Maximum Incentive (\$)	UCT BCR at Max Incentive	TRC BCR
Ductless Heat Pump - Single Family	918.00	\$8,231	\$1,888.02	1.0	0.3
Ductless Heat Pump - Manufactured Home	2,084.00	\$5,350	\$4,286.12	1.0	0.9
Ductless Heat Pump Heating Zone 1 - Multifamily	1,295.34	\$5,262	\$2,664.09	1.0	0.6
Ductless Heat Pump Heating Zone 2 - Multifamily	1,415.54	\$7,337	\$2,911.31	1.0	0.5

The measures shown in Table 2 do not include any co-funding. Many, but not all, projects would qualify for co-funding of some kind. This will be variable from project to project. Energy Trust is not proposing to make co-funding a participation requirement, so Energy Trust is not including any in our analysis. When Energy Trust is aware of co-funding for particular projects, co-funding amounts will be collected and included in program-level cost effectiveness reporting.

Savings from ductless heat pump measures in single-family and manufactured homes are lower than in previous iterations of the measures due to a recent billing analysis that indicated that realized savings at sites where DHP projects were installed were lower than previously expected due to range of potential factors which may include: indoor units going into unconditioned spaces, presence of secondary/supplemental fuel equipment, customer ability to operate equipment and changes in use and thermal comfort. This outcome of fewer savings than expected is not unique to Energy Trust and more data is needed to understand the factors that are influencing this outcome. Multifamily savings are lower than in our prior estimates due to changes in expected cooling in the baseline.

Exception Request II – UCT & TRC Exceptions for No-Cost DHPs, Ducted HPs, and HPWH

The measures included in this section include the no-cost measures to be delivered in partnership with community-based organizations, affordable housing providers, and other eligible partners. These are DHP in single-family, manufactured housing and multifamily, ducted heat pumps in single family, manufactured homes and small multifamily, and residential-sized heat pump water heaters single family, manufactured homes and multifamily.

Energy Trust has been providing no-cost energy efficiency measures to qualified households experiencing low income through a series of pilots PDP since 2022. These pilots are set to end on March 31, 2025, with results, evaluations and recommendations expected in late 2025 or early 2026. The Residential and Existing Buildings programs have developed and evolved community partner-level offerings to work with community-based organizations, affordable housing providers, and other eligible community partners to identify and qualify households and properties for no-cost offerings. Following the development of the 2025 Draft Budget, OPUC staff advised Energy Trust to reassess the budget to ensure that no-cost offers available in 2024 will continue to be available for all of 2025, allowing for similar services to low-income customers and environmental justice communities.

A key priority is the continuation of no-cost measures through 2025, which will serve as a bridge until complementary funding (e.g., HOMES/HEAR, PCEF, ODOE Heat Pump programs) becomes available on a larger scale in the market. This funding will supplement Energy Trust incentives and is expected to improve the cost-effectiveness of these measures.

Reason for exception

This measure falls under the following exception criteria:

E. The package of measures cannot be changed frequently, and the measure will be cost effective during the period the program is offered.

Many of these offers are expected to become cost effective when other cofunding channels become developed and available in the market. These funding sources include the Home

Energy Rebates (HOMES/HEAR), Portland Clean Energy Fund (PCEF), and ODOE heat pump programs. Energy Trust is coordinating with these entities to couple these sources of funding with Energy Trust offerings when these sources of funding become available in the market. In addition, Energy Trust has been cultivating relationships with community based organizations who have been identifying and working with eligible customers to get these measures installed. Continuing to offer these measures in 2025 will provide ongoing support to the business models and infrastructure for these CBOs and allow them to continue to engage priority customers.

G. The measure is required by law or is consistent with Commission policy.

HB 3141⁶ requires the Oregon Public Utility Commission (OPUC) to establish equity metrics to assess and ensure accountability for environmental justice in the allocation of energy conservation funds. The Commission has approved these equity metrics, which guide the allocation of resources to support environmental justice communities, including offering no- or low-cost options for customers facing energy burden. This exception allows us to maintain our no-cost offers while other co-funding channels are being developed.

Executive Order 20-04⁷ emphasizes reducing greenhouse gas emissions while addressing the energy burden of low-income customers, particularly in homes where electric resistance heating is common. This exception allows us to continue offering no-cost solutions that replace inefficient electric resistance units with more energy-efficient alternatives.

The State of Oregon's 10-Year Plan to Reduced Energy Burden in Affordable Housing⁸ identifies Heat Pump Water Heaters (HPWHs) as a high-potential measure for achieving electric savings, with Heat Pumps (HPs) ranked third. This exception allows us to continue offering these technologies at no cost.

Finally, OPUC staff provided direction Energy Trust to provide no-cost offers in the 2025 budget (Recommendation #1).⁹

Prevalence

In 2024, No-Cost DHP Pilot made up 0.6% of Residential program savings and 1.4% of Home Retrofit and Existing Manufactured Homes program track savings. Annual savings are expected to be about 327,954 kwh. Its incentives in 2024 are forecasted to be \$709,935 and make up 2.2 % of Residential program or and 4.5% Home Retrofit and Existing Manufactured Homes track incentive budget.

In 2024, No-Cost HPWH Pilot is forecasted to make up 0.3% of Residential program and 0.7% of Home Retrofit and Existing Manufactured Homes program track savings. Annual savings are expected to be about 166,492 kwh. Its incentives in 2024 are forecasted to be \$321,000 and make up 1% of program or and 2% of Home Retrofit and Existing Manufactured Homes program track budget.

⁶ HB 3141 Summary Memo: <https://www.oregon.gov/puc/Documents/HB3141-Summary.pdf>

⁷ Executive Order No. 20-04: https://www.oregon.gov/gov/eo/eo_20-04.pdf

⁸ State of Oregon's 10-Year Plan to Reduced Energy Burden in Affordable Housing: <https://www.oregon.gov/energy/Get-Involved/Documents/2018-BEEWG-Ten-Year-Plan-Energy-/Burden.pdf>

⁹ [2025 ETO Budget Memo \(granicus.com\)](https://www.granicus.com/docView?id=-620222-2025-ETO-Budget-Memo)

In 2024, No-Cost DHP pilot is forecasted to make up less than 1% of total Existing Building program savings and 97% of our total No-cost/Low-cost program savings. Annual savings are expected to be about 620,625 kwh. Its incentives in 2024 are forecasted to be \$1,507,898 and make up 6% of overall Existing Buildings program and 97% of No-cost/Low-cost program savings.

Table 3: Forecasted Incentives and Savings from Exception Request II: No-Cost Offers

Program	Offer	2025 Incentives	<i>Percent of 2025 Program Incentives</i>	2025 kWh Savings	<i>Percent of 2025 Program Savings</i>
Residential	No-Cost DHPs (SF and XMH)	\$1,479,300	3.1%	332,567	0.6%
Residential	No-Cost Ducted HPs (SF and XMH)	\$1,815,000	3.8%	769,149	1.4%
Residential	No-Cost HPWH (SF and XMH)	\$755,878	1.6%	357,553	0.7%
Existing Buildings	No-Cost DHPs (MF)	\$1,450,000	4%	515,000	0.6%
Existing Buildings	No-Cost Ducted HPs (Small MF)	\$250,000	0.7%	61,962	0.1%
Existing Buildings	No-Cost HPWH (MF)	\$150,000	0.4%	53,815	0.1%
Totals		\$5,900,178		2,090,046	

Cost Effectiveness details

The savings estimates for no-cost measures and resulting BCRs are shown in Table 4. These are aligned with the savings estimates for the corresponding measures in other delivery channels. The measures for ducted heat pumps and heat pump water heaters are due to be updated in 2025 for use in 2026-2028. Energy Trust anticipates using updated savings, costs and BCRs starting in 2026. Energy Trust hopes this exception can continue without the need to re-request at that time if the no-cost versions continue to not pass the UCT.

Table 4 – Cost-Effectiveness of Measure Applications

Measure	Savings (kWh)	Incremental Costs (\$)	Maximum Incentive (\$)	UCT BCR at Max Incentive	TRC BCR
Ductless Heat Pump 1:1 - Single Family - No Cost	918	\$4,800	\$7,500	0.3	0.5
Ductless Heat Pump 1:2 -Single Family - No Cost	918	\$7,200	\$12,000	0.2	0.3
Ductless Heat Pump 1:1 - Manufactured Homes No Cost	2,084	\$4,800	\$6,500	0.7	1.0
Ductless Heat Pump 1:2 Manufactured Home - No Cost	2,084	\$7,200	\$10,000	0.4	0.7
Ducted Heat Pump – Single Family, and Small MF - No Cost	4,428.85	\$9,860	\$17,500	0.5	1.2
Ducted Heat Pump - Manufactured Home - No Cost	4,031.20	\$9,500	\$14,000	0.6	1.1
Heat Pump Water Heater – all residential building types – No Cost	1,454.46	\$4,260	\$6,000	0.3	1.0
Ductless Heat Pump 1:1- Heating Zone 1- Multifamily - No Cost -	1,295.34	\$5,156	\$8,400	0.3	0.6
Ductless Heat Pump 1:1 - Heating Zone 2 - Multifamily - No Cost	1,415.54	\$5,156	\$8,400	0.3	0.7
Ductless Heat Pump 1:2 - Heating Zone 1 - Multifamily - No Cost	1,295.34	\$7,829	\$9,200	0.3	0.4
Ductless Heat Pump 1:2 - Heating Zone 2 - Multifamily - No Cost	1,415.54	\$7,829	\$9,200	0.3	0.5

Incremental costs for these no-cost measures in the pilots have been less than similar measures delivered through other program designs, as can be seen by comparing the costs for DHPs in Tables 2 and 4. Energy Trust attributes this to the community based organizations coordinating negotiating pricing better than a typical consumer could. They have agreements and relationships with trade allies who offer them competitive prices.

The maximum incentive proposed for these no cost measures include a buffer to allow us to cover the full cost of projects which might be more expensive than normally expected. This creates flexibility to mitigate potential equipment and labor cost increases over the period of these exceptions and/or address ancillary costs anticipated in a limited set of projects. Program staff set and publish lower allowable installation costs for use by community based organizations.

Many, but not all projects would qualify for co-funding of some kind. This will be variable from project to project and Energy Trust is not proposing to make co-funding a participation requirement. When Energy Trust is aware of co-funding for particular projects, co-funding amounts will be collected and included in program-level cost effectiveness reporting.

Discussion

Does granting or denying an exception significantly impact specific groups? Particularly DEI.

Yes, continuing our no-cost offers (Exception II) is intended to extend equitable access to energy-saving technologies for underserved communities through community partner offerings, including customers experiencing lower incomes, rural residents, and communities of color. This approach helps address systemic disparities in accessing efficient heating and cooling solutions, expand program access through community partnership, reduces energy costs and energy burden, and supports our broader DEI goals by prioritizing those who typically face barriers to participation.

Is there a potential for additional value through complementary funds in the future?

Yes, there is potential for additional value through complementary funding sources such as Home Energy Rebate (HOMES/HEAR), Portland Clean Energy Fund (PCEF), and ODOE heat pump programs. Many of these programs may provide funding that supports equipment installations, electrical panel upgrades, and reduce home heating loads through weatherization upgrades. Complementary funding that covers enabling measures allows us to expand our offerings, reduce out-of-pocket costs for participants, and increase the overall reach and impact of energy-saving measures for underserved communities. In many cases, complementary funding sources could be paired with an Energy Trust incentive which has a cost effective UCT ratio to provide installations at no cost to customers.

Would approving or denying an exception be of particular interest to utilities?

Yes, approving this exception would likely be of interest to utilities, as it aligns with their goals of reducing overall energy demand and improving efficiency in underserved segments, such as customers experiencing lower incomes and energy burdens, rural customers, and multifamily households. Energy Trust has discussed with PGE and PacifiCorp the budget needed to provide these measures to customers as part of the 2025 Energy Trust budget process.

What opportunities have stakeholders had to share their thoughts and concerns? This is of particular interest if it is likely stakeholders will have an opinion.

At Energy Trust's September 11, 2024, Conservation Advisory Committee (CAC) meeting, Energy Trust discussed plans to pursue a measure exception for DHP in Single-Family and Manufactured Housing, DHP in Multifamily, and HP in Stacked Multifamily.

At Energy Trust's November 13, 2024, Conservation Advisory Committee (CAC) meeting, Energy Trust discussed plans to pursue a measure exception detailing the information outlined in this request. One question was raised by PGE asking about the total investment of these exceptions. The total investment is approximately \$12 million, with approximately \$6 million for no-cost offers and approximately \$6 million for DHPs beyond the no-cost measure applications. There were no other questions asked, and no members expressed opposition to this anticipated exception request.

In our previous DHP exception request, detailed in Order No. 22-024, three stakeholders submitted comments and expressed support for the exception. These stakeholders were the following: Community Energy Project, Rep. Pam Marsh, And Clackamas County Department of Transportation & Development.

Do we want to monitor activities in some way during the exception time period?

Energy Trust will report to the OPUC when Energy Trust updates the measures associated with Measure Exception II and will continue to report on savings and incentives of measures associated with measure-level cost effectiveness exceptions.

History:

Energy Trust has received exception requests for various heat pump measures since 2014. The following provides brief summaries of each request.

Energy Trust was granted a major exception from the Oregon Public Utility Commission on July 22, 2014, per Order No. 14-226¹⁰. OPUC staff granted a TRC exception based on Criteria D for our DHP measures. This exception was approved through 2015.

Energy Trust received an email from the Oregon Public Utility Commission on September 2, 2015, granting a minor exception for DHP measures. OPUC staff granted a TRC exception based on Criteria B & C.

Energy Trust received an email from the Oregon Public Utility Commission on October 19, 2016, granting a minor exception for DHP in Multifamily measure. OPUC staff granted a TRC exception based on Criteria D. This exception was approved until September 2017.

Energy Trust was granted a major exception from the Oregon Public Utility Commission on November 8, 2017, per Order No. 17-457¹¹. OPUC staff granted a TRC exception based on Criteria B & C for our DHP in Single-Family and Manufactured Homes and DHP in Multifamily measures. This exception was granted approval for a two-year exception.

Energy Trust was granted a major exception from the Oregon Public Utility Commission on September 12, 2019, per Order No. 19-301¹². OPUC staff granted a TRC exception based on Criteria B, C, & G for our DHP in Single-Family and Manufactured Homes and DHP in Multifamily measures. This exception was granted through March 31, 2022.

Energy Trust was granted a major exception from the Oregon Public Utility Commission on April 2, 2020, per Order No. 20-105¹³. This exception request included two measures packaged together in one request. The first exception was associated with our DHP in Single-Family and Manufactured Homes. OPUC staff granted an UCT exception based on Criteria A, C, & G. The second exception was associated with our DHP in Multifamily. OPUC staff granted a UCT & TRC exception based on Criteria A, C, & G. This exception was granted through March 31, 2022. OPUC staff also recommended that Energy Trust alert OPUC staff if the measures under exception exceed 50 installs in a calendar year or if cost effectiveness is expected to decline.

Energy Trust was granted a major exception on its DHP measures from the Oregon Public Utility Commission on January 26, 2022, per Order No. 22-024¹⁴. This exception request included three measures packaged together in one request. The first exception was associated with our DHP in Single-Family and Manufactured Homes. OPUC staff granted a UCT & TRC

¹⁰ [UM 1696 Order No. 14-226](#)

¹¹ [UM 1696 Order No. 17-457](#)

¹² [UM 1696 Order No. 19-301](#)

¹³ [UM 1696 Order No. 20-105](#)

¹⁴ [UM 1696 Order No. 22-024](#)

exception. The TRC exception was based on Criteria C & G, and the UCT exception was based on Criteria A, B, D, & G. The second exception was associated with our DHP in Multifamily Housing. OPUC staff granted a TRC exception based on Criteria C & G. The third exception was associated with our No-Cost DHP Pilot. OPUC staff granted a UCT and TRC exception based on Criteria C, F, and G. This exception request was granted for three years (ending 3/31/2025) and placed a total incentive cap of \$5 million for the pilot. Due to high market demand, OPUC granted Energy Trust a \$2 million increase in the pilot cap (from \$5m \$7m) during this same period, ending in 3/31/2-25.¹⁵

No exception was requested for no-cost heat pump water heaters and no-cost ducted heat pumps for use in the no-cost pilots. Over 15-029 granted in 2015 give Energy Trust has a standing exception for pilots.

¹⁵ UM 1696 [Order 24-142](#)