



Eugene City Council

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EUGENE CITY COUNCIL AGENDA

September 27, 2021

**5:30 p.m. JOINT WORK SESSION OF THE EUGENE CITY COUNCIL AND THE
EUGENE WATER AND ELECTRIC BOARD OF COMMISSIONERS**

As the state and community recover from the COVID-19 pandemic, most City Council meetings will continue to be held remotely using virtual meeting technology. Information about online or other options for access and participation will be available at <https://www.eugene-or.gov/3360/Webcasts-and-Meeting-Materials>

**Meeting of September 27, 2021;
Her Honor Mayor Lucy Vinis Presiding**

Councilors

Jennifer Yeh, President
Mike Clark
Randy Groves
Emily Semple

Claire Syrett, Vice President
Greg Evans
Matt Keating
Alan Zelenka

**5:30 p.m. JOINT WORK SESSION OF THE EUGENE CITY COUNCIL AND THE
EUGENE WATER AND ELECTRIC BOARD OF COMMISSIONERS**

1. JOINT WORK SESSION: Electrification, Climate, and Drinking Water Discussions

For the hearing impaired, an interpreter can be provided with 48 hours' notice prior to the meeting. Spanish-language interpretation will also be provided with 48 hours' notice. To arrange for these services, contact the receptionist at 541-682-5010. City Council meetings are telecast live on Metro Television, Comcast channel 21, and rebroadcast later in the week.

El consejo de la Ciudad de Eugene agradece su interés en estos asuntos de la agenda. El lugar de la reunión tiene acceso para sillas de ruedas. Se puede proveer a un intérprete para las personas con discapacidad auditiva si avisa con 48 horas de anticipación. También se puede proveer interpretación para español si avisa con 48 horas de anticipación. Para reservar estos servicios llame al 541-682-5010. Las reuniones del consejo de la ciudad se transmiten en vivo por Metro Television, Canal 21 de Comcast y son retransmitidas durante la semana.

For more information, contact the Council Coordinator at 541-682-5010
or visit us online at www.eugene-or.gov.



AGENDA ITEM SUMMARY

Joint Work Session: Electrification, Climate, and Drinking Water Discussions

Meeting Date: September 27, 2021
Department: Central Services
www.eugene-or.gov

Agenda Item Number: 1
Staff Contact: Ethan Nelson
Contact Telephone Number: 541-682-5245

ISSUE STATEMENT

The City Council and EWEB Board of Commissioners meet periodically to share information and discuss issues of mutual interest. The purpose of this work session is to update City of Eugene and Eugene Water & Electric Board (EWEB) elected officials on the preliminary results of EWEB's electrification study, updates on the City's Climate Action Plan implementation, and EWEB's drinking water resiliency efforts.

BACKGROUND

Joint Work Session Agenda

The Agenda will include short presentations and opportunities for discussion, related to:

1. EWEB Electrification Study: Key takeaways on Phase One and Two learnings; role of energy efficiency programs with focus on offerings for limited income customers (for more information see Attachment B; Energy Efficiency & Limited Income Programs Summary).
2. City of Eugene CAP 2.0 Update: Overview of CRO, CAP2.0, and emission sources, EV Strategy Overview and Updates, Building Energy Overview, Upcoming climate work sessions this fall, including climate and homelessness funding, and Ongoing staff partnerships.
3. EWEB Drinking Water Resiliency: Water Infrastructure Investments, Water Source Resiliency needs, Watershed protection and fire restoration efforts.

EWEB Electrification Study

In March 2020, EWEB management and the Board of Commissioners determined that understanding the impacts of electrification will be the focus of the utility's near-term power supply planning work. This targeted analysis is intended to address the growing interest in our community to transition from fossil-based fuels to electricity to address climate change. It will help the utility quantify the potential impacts of electrification at scale and inform integrated resource planning for the future. Phase 1, presented at the November 2020 Board meeting, focused on the potential impacts of electrification without analyzing the costs to society, utilities, or the customers choosing to electrify (full study can be accessed at:

<http://www.eweb.org/Documents/about-us/electrification-study-phase1-for-publication.pdf>).

Phase 2 of the electrification impact study seeks to build on the analysis and context presented in Phase 1 by considering the economics of electrification from multiple perspectives. Like Phase 1, analysis of the transportation sector focuses on light-duty vehicle electrification. The building

sector analysis includes the electrification of space and water heating technologies for existing buildings. EWEB staff presented to the EWEB Board of Commissioners the preliminary findings of the Phase 2 study at the August 3, 2021 meeting, background materials can be found here: <http://www.eweb.org/Documents/board-meetings/2021/08-03-21/m10-preliminary-results-from-phase-2-of-the-electrification-impact-analysis-report.pdf>.

For more information, please see Attachment A: EWEB Electrification Impact Study Backgrounder

City of Eugene Climate Action Plan

The City's Climate Recovery Ordinance ([Ordinance No: 20567](#)) includes the following goals: 1) the City organization to be carbon neutral by 2020, 2) the City organization to reduce fossil fuel use by 50 percent by 2030 compared to 2010 levels, 3) community-wide reduction of fossil fuel use by 50 percent by 2030 compared to 2010 levels, and 4) reduce community-wide greenhouse gas emissions by 7.6 percent annually through 2100. The City's Internal Climate Action Plan and the CAP2.0 are the roadmaps to the reaching the CRO goals.

The City formally began the CAP2.0 planning process in 2018. An initial draft plan was released in November 2018. This revised draft follows a similar format and includes significant revisions guided by the 12 themes that emerged from the [Mayor's CRO Ad Hoc Work Group](#) which met in the winter and spring of 2020. The final CAP2.0 was approved by the City Council on July 29, 2020 and can be found here: <https://www.eugene-or.gov/4284/Climate-Action-Plan-20> .

EWEB Drinking Water Resiliency

EWEB is responsible for ensuring that our entire community has access to the clean and reliable drinking water that is essential for public health and safety, fire protection and economic vitality. These needs are more crucial than ever, as we continue to experience challenges stemming from climate change and aging infrastructure.

At the Joint Work Session, EWEB staff will share on the investment in upgrading and expanding the Hayden Bridge Water Filtration Plant, replacing water mains, improving pump stations, new water storage facilities, and planning for a second filtration plant on the Willamette River.

In 2018, EWEB's Board of Commissioners approved a 10-year strategic plan to protect the McKenzie Watershed as Eugene's sole source of drinking water. The programs and partnerships formed to implement this strategic plan are now fundamental to the timely response to the Holiday Farm Fire (HFF) and the building blocks of watershed restoration efforts over the longer term. The Holiday Farm Fire burned 173,000 acres and destroyed over 430 structures in the middle McKenzie Watershed inflicting significant damage and threatening the long-term viability of Eugene's sole source of drinking water. EWEB currently leads the Watershed Recovery Task Force in response to the fire and is using the Pure Water Partners (PWP) program to leverage resources and funding to mitigate fire impacts and conduct watershed restoration activities that protect water quality.

For more information see Attachment C: EWEB Water Resiliency

ATTACHMENTS

- A. EWEB Electrification Impact Study Backgrounder
- B. Energy Efficiency & Limited Income Programs Summary
- C. EWEB Water Resiliency

FOR MORE INFORMATION

Staff Contact: Jeannine Parisi, EWEB Customer Relationship Manager
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Staff E-Mail: jeannine.parisi@eweb.org

Staff Contact: Ethan Nelson, City of Eugene, Intergovernmental Relations Manager
Telephone: 541-682-5245
Staff E-Mail: enelson@eugene-or.gov

**MEMORANDUM**

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: EWEB Board of Commissioners, Mayor, and City Council

FROM: Megan Capper, Energy Resources Manager; Frank Lawson, EWEB CEO & General Manager

DATE: September 22, 2021

SUBJECT: EWEB Electrification Impact Study Backgrounder

OBJECTIVE: Information

Background

In March 2020, EWEB began devoting power resource planning efforts to studying the impacts of electrification, which will eventually become planning conditions considered in EWEB's Integrated Resource Plan (IRP), where EWEB will determine the optimal 2023-2050 electricity supply mix(es) and needed investments to reliably, affordably, and environmentally meet the evolving consumption needs of our customer-owners.

DiscussionHigh-Level Impact Assessment (Phase 1) – November 2020

In November 2020, an initial high-level Electrification Impact Study (Phase 1), assuming low, medium, and high levels of electrification in light-duty vehicles, residential and commercial space and water heating, found that high levels of transportation and building electrification could increase EWEB's average annual energy consumption by 20% and peak energy demand by 70% during colder weather events. The study also found that this transition would likely be slow, providing time to develop mitigation strategies including enhanced conservation and efficiency, peak load shifting, storage, and/or rate design changes. The analysis showed electrification could help reduce carbon emissions by 50% by 2050 in specific sectors (transportation, residential/commercial water and space heating) except industrial, assuming no improvements in carbon content (intensity) in either the electricity or natural gas supply.

Economic Analysis Enhancement (Phase 2) – In Process

While the initial study relied on assumed low, medium, or high levels of electrification, the adoption rate of electrification was uncertain the analysis was done without considering costs. The present edition/enhancement of EWEB's electrification analysis (Phase 2) seeks to build on the analysis and context established by the initial findings by considering the economics of electrification from multiple perspectives, and therefore providing a better understanding of the likelihood of electrification and EWEB's opportunities to engage with customers and develop programs.

The value of electrifying, as captured by comparing benefits to costs, can differ depending on the point of view. The consumer, or "participant", is the EWEB customer who chooses to electrify, and they ultimately determine which transportation, space, and/or water heating technology will be adopted. Those participant choices have impacts on EWEB ratepayers and society in general. Thus, the benefit-cost analysis is presented from three perspectives:

- **EWEB Participant:** Do benefits of electrifying outweigh costs for an EWEB customer?
- **EWEB Ratepayer:** Do marginal benefits outweigh costs for a nonparticipant EWEB ratepayer?
- **Society:** Do benefits outweigh costs for a resident of the community? Environmental benefits are captured by placing a value on the social cost-of-carbon.

Smart Electrification

Using this analysis, EWEB hopes to gain insight into the anticipated rate of electrification and “smart” electrification opportunities, and thus prioritize investments, actions, and positions. Smart electrification is a concept that attempts to maximize the benefits of participants, ratepayers, and society while also being mindful of potential peak impacts adversely impacting the utility and/or the regional grid in the future.

To better understand how future scenarios may impact electrification, the analysis includes a “Base Case” (i.e., expected likely future) scenario, and a scenario that leads to a future with Aggressive Carbon Reduction (ACR). The ACR scenario considers a future where both electric and fossil fuel energy sources are influenced by policies which prioritize carbon emission reductions and is largely based on trends and technology that exists today. The following table outlines major variables (sensitivities) and scenarios (groups of sensitivities) analyzed.

	Tested Sensitivity			Scenarios	
	Sensitivity 1	Sensitivity 2	Sensitivity 3	Base	Aggressive Carbon Reduction
All Measures					
Annual Electric Rate Increase	1.00%	3.00%	6.00%	3.00%	6.00%
Electric Supply Cost	Low	High		Low	Low
Rate Structure	Existing Flat	TOU		Existing Flat	TOU
Generation Capacity Cost	Low	High		Low	High
Panel Upgrade	No	Yes		No	No
Space and Water Heating					
Natural Gas Commodity Price	Low	Med	High	Med	High
RNG Percent Blend	Low	High		Low	High
RNG Commodity Price	Average	Marginal		Average	Marginal
Heat Pump Cost Reduction*	Low	High		Low	High
Electric Vehicles					
Gasoline Price	Low	Med	High	Med	High
Managed EV Charging	No	Yes		No	Yes

*Reductions in cold climate heat pump manufacturing cost, given increased production maturity

Based on the draft economic analysis/electrification analysis, the following high-level tables summarize the preliminary key findings. Much of the society benefit is created by assigning a “social cost of carbon” to the anticipated carbon reduction compared to the forecasted alternative. Details and context regarding these findings will be in the full report to be presented to the EWEB Commissioners in November 2021.

Smart Electrification Scorecard	Carbon Reduced	Base Case 2030			1-in-10 Peak Adder	Peak Management Potential	EWEB Engagement Opportunities
		EWEB Participant	EWEB Ratepayer	Society			
Electric Vehicle							Encourage managed charging to avoid peak, increase public and workplace charging opportunities
Heat Pump Water Heater							Consider existing energy efficiency incentive program's influence on electrification of water heating
SFD - Standard Heat Pump							Participant benefits are neutral, making electrification unlikely. Possible incentive opportunity.
SFD - Cold Climate Heat Pump							Participant benefits are lacking, making electrification unlikely. Possible incentive opportunity.
SFD - Dual Fuel Heat Pump							Participant benefits are neutral, making electrification unlikely. Possible incentive opportunity.
Multi-Family Dwelling Space Heat							Participant benefits are lacking, making electrification unlikely. Possible incentive opportunity.
Small Office Space Heat							Participant benefits are lacking, making electrification unlikely. Consider rate design changes for commercial electrification.

Smart Electrification Scorecard	Carbon Reduced	Aggressive Carbon Reduction 2030			1-in-10 Peak Adder	Peak Management Potential	EWEB Engagement Opportunities
		EWEB Participant	EWEB Ratepayer	Society			
Electric Vehicle							Encourage managed charging to avoid peak, increase public and workplace charging opportunities
Heat Pump Water Heater							Consider existing energy efficiency incentive program's influence on electrification of water heating
SFD - Standard Heat Pump							Influence customer space heating technology choices to mitigate peak impacts.
SFD - Cold Climate Heat Pump							Influence customer space heating technology choices to mitigate peak impacts.
SFD - Dual Fuel Heat Pump							Influence customer space heating technology choices to mitigate peak impacts.
Multi-Family Dwelling Space Heat							Participant benefits are lacking, making electrification unlikely. Possible incentive opportunity.
Small Office Space Heat							Participant benefits are lacking, making electrification unlikely. Consider rate design changes for commercial electrification.

Preliminary Conclusions

Electrification of light-duty vehicles and water heating creates value (marginal benefit/marginal cost) from all perspectives (participant, EWEB ratepayer, society) in both the anticipated likely base-case and aggressive carbon reduction scenarios, indicating electrification is “smart”, likely, and beneficial. In the case of light-duty vehicles, carbon reduction is substantial and the electric peak impact, while significant, can be effectively and affordably mitigated with a diversified charging infrastructure and time-of-use pricing, as has been demonstrated in other areas of the country. In the case of water heating, the carbon reduction is lower, but so is the electric system peak impact. With continued incentives for participants, electrification of water heating qualifies as “smart”.

The electrification of space heating is more complex, and dependent on sensitivities and technologies. Removing other variables (mandates, incentives, economic impacts, equity, personal choice), substantial single-family dwelling electrification of space heating is unlikely under the forecasted anticipated base-case scenario given lack of value created for the decision-making participant. From a financial/value perspective, electrifying with standard heat pump or dual-fuel heat pump technology creates the most value for both the participant and society, but the standard heat pump has the most adverse electric system peak impact which will be difficult and expensive to mitigate. Therefore, dual-fuel technology should be explored further as an opportunity for carbon savings, value from all perspectives (participant, ratepayer, society), and lowest peak electricity impact.

Substantial multifamily space heating electrification is also not likely, barring other variables, due to comparably lower energy needs, and less opportunity to recover upfront costs with monthly savings. Small commercial/office electrification is also a net cost to the participant due to increased demand charges to the commercial customer, indicating that the demand charge component of the electric rate structure may be acting as a deterrent to commercial electrification.



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: EWEB Board of Commissioners, Mayor and City Council
 FROM: Greg Kelleher, Customer Operations Manager
 DATE: September 16, 2021
 SUBJECT: Energy Efficiency & Limited Income Programs Summary
 OBJECTIVE: For Information Only

Issue

This is an update on energy efficiency programs currently available to EWEB customers.

Background

For decades, EWEB has made energy efficiency programs available to customers in all sectors, including limited income. This practice aligns with EWEB's core value of Responsibility: *We value the prudent and sustainable stewardship of our customers' financial and natural resources, including our impact on affordability and role in reducing the greenhouse gases (GHGs) contributing to Climate Change.* Energy efficiency programs help customers manage energy costs, meet utility load growth, reduce carbon emissions, and contribute to regional savings in helping assure the Pacific Northwest an adequate, efficient, economical, and reliable electric power supply. EWEB's target for first year energy savings in 2021 is 10,000 MWH, within an incentive budget of \$2.6 million. Historically, the annual energy savings target has been based on the goal to offset forecasted annual load growth.

Discussion

EWEB customers in all sectors contribute to the cost of energy efficiency in their retail rates and are eligible to participate in a variety of energy efficiency programs. This includes limited income programs that are designed to cover most of the cost of energy efficiency upgrades in owner occupied and nonprofit agency-owned homes as well as premium limited income incentives for privately owned rentals and qualifying nonprofit new construction multifamily housing.

For existing single-family homes¹, EWEB offers rebates, or zero interest loans, for ducted and ductless heat pumps, heat pump water heaters, insulation and air sealing, and efficient windows. Rebates are typically higher for income-qualified customers in both owner-occupied and rental dwellings. For new construction homes, EWEB offers rebates for ducted and ductless heat pumps and heat pump water heaters. Rebates for new Northwest Energy-Efficient Manufactured (NEEM) Housing Program certified manufactured homes are also available.

¹ Single family includes houses, townhomes, manufactured homes, buildings with up to 4 units, and condominiums and townhomes with five or more units per building provided they are not vertically stacked.

For existing multifamily housing², EWEB offers rebates for insulation, windows, and packaged terminal heat pumps. For new multifamily housing, EWEB offers either simple rebates on a per-unit basis, or custom rebates, for housing built to energy efficient new construction or zero energy ready standards. A premium level of incentives is available for energy efficient nonprofit affordable housing.

Year to date, EWEB has partnered with residential customers and contractors to complete 1,037 projects in single family homes, including 666 efficient heating systems, 203 heat pump water heaters, and 168 insulation and windows projects. 122 of these projects were completed in limited income homes. In addition, EWEB provided grant funding for energy efficiency in 105 units of new multifamily affordable housing. Total annual residential savings year to date are 1,778 MWH, 341 of which is in limited income dwellings. Total EWEB residential energy efficiency investments year to date are \$1.04 million in rebates and grants and \$1.05 million in zero interest loans. Of these funds, \$470,000 in grants and \$129,000 in loans were for limited income projects.

In the commercial sector, EWEB offers rebates for upgrading lighting to LED fixtures and/or adding lighting controls, converting electric resistance or non-electric heat to heat pump technology, and/or adding advanced controls, and heat pump water heaters. These measures are available for either new or existing buildings. Prescriptive rebates for upgrading insulation or windows are also available for existing buildings. EWEB will also work with commercial customers to provide custom incentives for building retro-commissioning and efficient new construction.

For foodservice, grocery, and cold storage customers, EWEB offers rebates for efficient electric ovens, holding cabinets, steam cookers and demand-controlled kitchen ventilation, as well as refrigeration measures such as strip curtains, anti-sweat heater controls, efficient fan motors, fast acting doors, and custom incentives for refrigeration equipment.

Finally, for institutional, process and manufacturing customers, EWEB offers rebates for efficient air compressors, inverter-based battery chargers and welders, and efficient generator block heaters, as well as custom incentives for energy savings in new or existing equipment or manufacturing processes. Fixed rate loans are available for most programs to help cover project costs after incentives.

Year to date, EWEB has provided energy efficiency funding for 91 non-residential projects, including 71 lighting projects, 10 Heating, Ventilation and Air Conditioning (HVAC) projects, 7 refrigeration, 2 foodservice, and 1 custom manufacturing project. Year to date non-residential energy savings and EWEB investments are 5,897 MWH and \$687,000 respectively.

Summaries of residential programs and limited income and standard rebates, as well as loan limits, and a summary of non-residential programs and rebates are attached for reference.

Requested Board Action

Information only. No action required.

Attachment 1 – 2021 EWEB Residential Program Summary

Attachment 2 – 2021 Business Customer Programs, Rebates and Loans

2 Multifamily is defined as five or more units per building, and vertically stacked.



2021 EWEB Residential Program Summary

Program	Rebates Available	Loan Limit (0% interest)	Program Requirements
Ducted Heat Pump	\$1,000	\$12,000 for site-built homes, \$7,000 for manufactured	<ul style="list-style-type: none"> Air-source heat pumps only. For income eligible amount, home must have electric heat. Learn more at bit.ly/EWEBductedhp
	Income eligible: \$3,800 for owner occupied or \$1,000 for rentals		
Ductless Heat Pump	\$800	\$4,000, plus \$1,500 per additional head, up to \$10,000	<ul style="list-style-type: none"> For buildings with more than 4 units (side-by-side condos/townhouses, or apartments) check with EWEB for eligibility. Homes with existing operable ducted heat pumps are not eligible to participate. If there is a pre-existing ductless heat pump, it must be removed. For income eligible amount, home must have existing electric heat. Learn more at bit.ly/EWEBdhp
	Income eligible: \$3,800 for owner occupied or \$1,000 for rentals		
Insulation & Air Sealing	\$0.80/sf of insulation, up to 50% of eligible cost, plus \$0.10/sf for air sealing	\$4,000 plus \$1,000 for air sealing	<ul style="list-style-type: none"> Home must have electric heat and be poorly insulated. For income eligible, a minimum of 2 bids are required. Air sealing limited to being an additional component of an attic and/or underfloor crawlspace insulation project in single-family homes. Learn more at eweb.org/weatherize
	Income eligible: 100% of eligible insulation cost, plus \$0.10/sf for air sealing		
Windows	\$4.00/sf of glass	\$4,000 for U-factor \leq 0.25 or \$6,000 for U-factor \leq 0.22	<ul style="list-style-type: none"> Home must have electric heat and existing single pane or double pane metal windows. Unless otherwise specified, must have U-factor \leq 0.22. For income eligible, the home must have electric heat and existing single pane windows. Windows with U-factor \leq 0.30 are allowed for owner-occupied. Learn more at eweb.org/weatherize
	Income eligible: \$20/sf for owner occupied or \$10/sf of glass for rentals	Multifamily: \$3,500 + \$500/unit up to \$20,000	
New Construction	\$1,000 heat pump, ducted or ductless	N/A	<ul style="list-style-type: none"> EWEB encourages homes to be built with efficient low-carbon electric heating and water heating systems. Rebates for multifamily, affordable housing and custom projects are available but not listed here, contact us for details. Learn more at bit.ly/EWEBnewconst
	\$800 heat pump water heater		
	NEEM-certified manufactured homes: \$1,200 for v1.1 or \$1,400 for v2.0		
Solar Electric Net Metering	\$0.40/AC output watt up to \$2,500	N/A	<ul style="list-style-type: none"> Site must have at least an 85% total solar resource fraction to receive rebate. 25 kW max. Direct generation option available in lieu of net meter. Learn more at eweb.org/solar
Level 2 EV Charger	\$500	N/A	<ul style="list-style-type: none"> Charger must be Level 2 (240V, 30 Amp minimum power output capacity), equipped with the SAE J1772 standard or Tesla connector plug, installed in compliance with applicable codes. Learn more at eweb.org/ev
Heat Pump Water Heater	\$800	\$2500	<ul style="list-style-type: none"> Must be Tier 3 and on a qualified products list, with at least a 40-gallon tank. For income eligible amount, home must have electric water heat. Learn more at bit.ly/EWEBhpwh
	Income eligible: \$1,700 for owner occupied, \$1,000 for rental		



2021 EWEB Residential Program Summary

Program	Rebates Available	Loan Limit (0% interest)	Program Requirements
Toilets	\$50 for 1.28 gpf toilets, or \$100 for 1.0 gpf toilets	N/A	<ul style="list-style-type: none"> New toilet must be WaterSense and use either 1.28 gallons per flush or 1.0 gallons per flush or less. New toilets must replace an existing toilet using 1.6 gallons per flush or more. Rebate is paid via bill credit. Learn more at eweb.org/waterconservation
Hand Valve	Free valve (or \$75 bill credit) and \$75 bill credit for installation	N/A	<ul style="list-style-type: none"> Shut-off valve to be installed on customer side of water meter by a plumber. Valves may be provided by plumber or EWEB. Learn more at eweb.org/waterconservation
Water Service Line Replacement	N/A	\$5,000	<ul style="list-style-type: none"> Replacement of a leaking water service line between the meter and the house only. Must be done by a qualifying plumber. Learn more at eweb.org/leakassistance
Leak Repair Assistance	100% of eligible costs, income eligible only	N/A	<ul style="list-style-type: none"> Applies to minor plumbing repair and/or service line replacement.
Septic	\$250 to inspect and pump out septic system	\$10,000 for repair or replacement of septic system	<ul style="list-style-type: none"> Property must be within the McKenzie River Pure Water Partners Boundary. Learn more at eweb.org/septic
EWEB Greenpower	N/A	N/A	<ul style="list-style-type: none"> Support clean energy & encourage renewable energy projects in our community by assigning 100% of your electricity to Greenpower or choosing blocks of Greenpower for as little as \$1.50 per month. Learn more at eweb.org/greenpower
Efficiency Education Program	FREE	N/A	<ul style="list-style-type: none"> Income qualified customers receive a free kit with energy and water-saving products and basic emergency preparedness supplies. We visit your home and evaluate it, looking for opportunities to reduce your monthly bill, improve your home comfort and lower your carbon footprint. Contact us for details.
Home Energy Score	FREE	N/A	<ul style="list-style-type: none"> Focused on rental properties, either tenants or rental owners can apply and receive an energy report with recommendations. Tenants can choose to have recommendations sent to landlord. Learn more at eweb.org/rentals
Electric Service Upgrade	N/A	\$20,000	<ul style="list-style-type: none"> Property must be in EWEB electric service territory. Examples include electric panel or meter base replacement, underground service work, or new services. Learn more at eweb.org/service-upgrade
Backup Generator	N/A	\$2,000	<ul style="list-style-type: none"> Installation must include a transfer switch and be permitted. Applicant must be an EWEB electric customer and be the owner of the property. Learn more at eweb.org/generatorloan
		\$4,000 with well for domestic water	

1. Unless otherwise noted, customer is eligible for a loan OR rebate, not both, unless income eligible. Loans and rebates are capped at project cost, including installation.
2. An application submitted by the homeowner is required. Apply online for most programs at <https://secure.eweb.org/ProgramApp.aspx>.
3. Program restrictions may apply. Rebate and loan amounts are subject to change at any time, please contact EWEB at 541-685-7088, or visit our web site, for the most current program information.
4. Loan funding may be used to cover costs of labor from participating contractors. See lists of contractors online at eweb.org/contractorlist.
5. Information about all of EWEB's rebate and loan offerings can be found at <http://www.eweb.org/saveenergy>.
6. To qualify for the limited-income funding, households must meet income guidelines, which can be found at bit.ly/EWEBLI.
7. Aggregate loan limit is \$20,000 per customer. The term for an EWEB loan is 48 months when borrowing under \$5,000, or 60 months when borrowing \$5,000 or more.
8. Homes with gas, oil, wood, or propane heat can qualify for non-income eligible rebates for Ducted of Ductless Heat Pump programs.



2021 Business Customer Programs, Rebates and Loans

Commercial Lighting	Rebates Available	EWEB Code	Program Requirements
Lighting Rebates	\$2 per LED tube	N/A	<ul style="list-style-type: none"> Actual rebate is determined by EWEB's lighting calculator. *See EWEB Lighting Rebates for complete list of rebates* An increase or decrease in the number of fixtures may be allowed. Installed LED products must be listed by DLC or ENERGY STAR. Rebates not to exceed 50% of the project cost. For new construction projects, rebates not to exceed 50% of the incremental cost for the LED package. Rebates over \$2,500 need EWEB pre-approval. Additional rebates available for networked lighting controls. All lamps, ballasts, and fixtures must be disposed of according to law Learn more at http://bit.ly/EWEBclt
	\$2-5 per small screw-in LED		
	\$20-200 per General Indoor/Outdoor LED fixture		
	\$30-500 per LED fixture replacing HID's or High Bay		
	\$30 – 500 LED Exterior		
	\$20 per LED exit sign		
	\$10-40 per lighting controls such as occupancy sensors		
Commercial HVAC	Rebates Available	EWEB Code	Program Requirements
Ductless Heat Pumps	**\$1,300 per ton – existing electric heat	DHP-30	<ul style="list-style-type: none"> System must replace an existing zonal or forced-air electric resistance or gas system. Systems with no ductwork must have a minimum HSPF of 11. Systems with any mix of ductwork must have a minimum HSPF of 10. Learn more at http://bit.ly/EWEBchvac
	\$350 per ton – existing non-electric heat	DHP-40	
	\$300 per ton – existing DHP upgrade or new construction	DHP-50	
Variable Refrigerant Flow (VRF)	**\$1,300 per ton of cooling capacity, retrofit	VRF-110	<ul style="list-style-type: none"> Replacing existing electric resistance heat for retrofit. If replacing existing gas heat, see Custom Projects. Installed system must have an AHRI certificate showing it meets minimum efficiency requirements. Requirements vary with system capacity, see website for details.
Packaged Heat Pumps	\$1,000 per ton – existing resistance heat	HP-100	<ul style="list-style-type: none"> Air-source heat pumps only. Ground-source heat pumps do not qualify. Split systems have an indoor air handler and a separate outdoor compressor. A packaged system has the heating and cooling equipment in a single package, often located on the roof. Installed system must have an AHRI certificate showing it meets minimum efficiency requirements. Requirements vary with system capacity, see website for details. Learn more at http://bit.ly/EWEBchvac
	\$350 per ton – existing non-electric heat	HP-110	
	\$150 per ton – existing heat pump upgrade or new construction	HP-140	
Split System Heat Pumps	\$1,000 per ton – existing resistance heat	HP-120	<ul style="list-style-type: none"> Installed system must have an AHRI certificate showing it meets minimum efficiency requirements. Requirements vary with system capacity, see website for details. Learn more at http://bit.ly/EWEBchvac
	\$350 per ton – existing non-electric heat	HP-130	
	\$150 per ton – existing heat pump upgrade or new construction	HP-150	

Commercial HVAC (Cont.)	Rebates Available	EWEB Code	Program Requirements
Packaged Terminal Heat Pump (PTHP)	\$600 per unit – replacing PTAC or zonal electric resistance heat	PTHP-100	<ul style="list-style-type: none"> Retrofit of existing installations and new equipment are both eligible. Only lodging facilities (hotel, motel, B&B, dormitory, or shelter) or residential care buildings (nursing homes, retirement homes, and assisted living facilities) are allowed.
	\$100 per unit – new construction	PTHP-110	
Variable Frequency Drives (VFD)	\$300 per fan motor horsepower – electric or gas heat	VFD-100	<ul style="list-style-type: none"> Retrofits only. Must be installed on a single-speed air handling unit fan. Any existing AHU throttling or bypass devices must be removed or permanently disabled.
Connected Thermostats	\$350 per thermostat – electric heat	CT-100	<ul style="list-style-type: none"> For retrofits only. Heating system can be electric or gas. Not available for lodging, 24/7 occupancy, or semi-conditioned spaces. A building is eligible to receive payment for more than one thermostat. Product must be on qualified list. Learn more at http://bit.ly/EWEBchvac
	\$350 per thermostat – gas heat	CT-110	
Advanced Rooftop Unit Controls (ARC)	**\$200 per ton – Lite: VFD or controller for multispeed fan operation	ARCL-1	<ul style="list-style-type: none"> Existing rooftop units must be unitary systems (split-systems are not eligible), have a cooling capacity of at least 5 tons, and use constant speed supply fans (RTUs with variable speed fans are not eligible). RTU heating fuel type may be electric or gas. Installed controls must be on a qualified products list. Learn more at http://bit.ly/EWEBchvac
	**\$300 per ton – Full: VFD or controller for multispeed fan operation, plus digital economizer control and demand control ventilation with CO2 sensor	ARCF-11	
Commercial Weatherization	Rebates Available	EWEB Code	Program Requirements
Windows	\$4 per square foot of glass – electric air source heat pump	WIN-100	<ul style="list-style-type: none"> Retrofits only. Pre-existing windows must be single pane, single pane with storms, or double pane metal. Installed windows must have a U-factor of 0.22 or less. Patio doors must have a U-factor of 0.25 or less.
	\$4 per square foot of glass – electric forced air furnace or zonal heat	WIN-110	
Insulation	\$0.80 per square foot, up to 50% of cost – electric heat – attic or roof insulation	INSA-100	<ul style="list-style-type: none"> Retrofits only. Pre-existing insulation must be between R-0 and R-5.
	\$0.80 per square foot, up to 50% of cost – electric heat – wall insulation	INSW-110	

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Please contact EWEB at 541-685-7088 for the most current program information.

Process and Manufacturing	Rebates Available	EWEB Code	Program Requirements
Small Compressed Air Systems	\$0.18 per annual kWh saved, up to a maximum of 70% of project cost	AIR-100	<ul style="list-style-type: none"> VFDs applied to a single air compressor or installation of cycling refrigerated air dryers of 75 horsepower or less. Incentives for air compressors over 75 hp, and for other compressed air savings measures, are available through EWEB's custom incentive program. Each VFD compressor must be submitted as an individual project (i.e. compressors may not be combined or divided).
High Frequency Battery Charger	\$0.18 per annual kWh saved, up to a maximum of 70% of project cost	HFBATT-100	<ul style="list-style-type: none"> New construction projects are not eligible. This measure applies to the replacement of existing ferroresonant or silicon-controlled rectifier (SCR) chargers ONLY. Installation of a new, high-frequency inverter-based battery charger, with rated input power of more than 2 kW and that uses 10W or less of standby power. Power conversion efficiency no less than 89%.
Welder Upgrade	\$0.18 per annual kWh saved, up to a maximum of 70% of project cost	WELD-100	<ul style="list-style-type: none"> New construction projects are not eligible. Installed inverter-based welder must be rated for a minimum of 200 amps.
Block heaters	\$200 – for generators under 3 kW	GBH-100	<ul style="list-style-type: none"> Retrofit of existing installations and new equipment are both eligible. The generator or engine must be stationary and fixed. Installed generator engine block heater must be forced-circulation heaters. A Project Information Form is required.
	\$1,500 – for generators 3 kW and greater	GBH-110	
New Construction & Custom	Rebates Available	EWEB Code	Program Requirements
Commissioning (RCx)	\$0.07 per kWh of first year savings \$0.03 per kWh of second year savings \$0.03 per kWh of third year savings	N/A	<ul style="list-style-type: none"> Savings are determined using billing data from year prior to commissioning work, and weather-adjusted billing data from subsequent years.
Custom Projects	\$0.18 per annual kWh of saved, or custom	N/A	<ul style="list-style-type: none"> Custom projects typically require a measurement and verification plan before project begins. Partial payment is generally processed upon project completion, with remaining payment being processed after measurement and verification plan is met.
New Construction Projects	\$0.18 per annual kWh of saved, or custom	N/A	<ul style="list-style-type: none"> For efficient electric HVAC systems. Additional rebates for qualifying affordable housing new construction are available. Contact EWEB for details.

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Commercial Food Services	Rebates Available	EWEB Code	Program Requirements
Commercial Food Services Rebates	\$500 per combination oven – 5 to 15 pans	FS-414	<ul style="list-style-type: none"> Installed product must be electric and meet ENERGY STAR v2.2 requirements. Learn more at http://bit.ly/EWEBcfs
	\$500 per combination oven – 16 to 20 pans	FS-415	
	\$400 per full size convection oven	FS-412	
	\$200 per half size convection oven	FS-413	
	\$250 per commercial fryer	FS-405	<ul style="list-style-type: none"> Installed product must be electric and meet ENERGY STAR v3.0 requirements. Learn more at http://bit.ly/EWEBcfs
	\$250 per insulated holding cabinets, half size	FS-406	<ul style="list-style-type: none"> Installed product must be electric and meet ENERGY STAR v2.0 requirements. Learn more at http://bit.ly/EWEBcfs
	\$500 per insulated holding cabinets, full size	FS-407	
	\$1,000 per insulated holding cabinets, double	FS-408	
	\$500 per steam cooker, 6-pan capacity	FS-603	<ul style="list-style-type: none"> Installed product must be electric and meet ENERGY STAR v1.2 Learn more at http://bit.ly/EWEBcfs
Demand-Controlled Kitchen Ventilation	\$200 per horsepower - single control sensor	FS-450	<ul style="list-style-type: none"> Controls must reduce fan speed during times of low demand and must be applied to both primary ventilation and make-up air units in a kitchen. Controls can be applied to either new or modified existing exhaust hoods. Learn more at http://bit.ly/EWEBcfs
	\$400 per horsepower - multiple control sensors	FS-455	
Commercial Refrigeration	Rebates Available	EWEB Code	Program Requirements
Reach-in Case Anti-Sweat Heater Controls	\$40 per linear foot - medium temp (1° F - 35° F)	RF-162	<ul style="list-style-type: none"> Controls must reduce run-time of the anti-sweat heaters in the door rail, glass and/or frame by at least 50%. This rebate does not apply to existing doors already equipped with low/no anti-sweat heat. Learn more at http://bit.ly/EWEBcref
	\$40 per linear foot - low temp (below 0° F)	RF-161	
Strip curtains	\$9 per square foot – Cooler, grocery	SC-100	<ul style="list-style-type: none"> Applies to retrofits only. Must install strip curtains or swinging doors at least 0.06 inches thick. Learn more at http://bit.ly/EWEBcref
	\$9 per square foot – Freezer, grocery	SC-110	
	\$9 per square foot – Freezer, convenience store	SC-120	
	\$9 per square foot – Freezer, restaurant	SC-130	
Efficient Fan Motors for Coolers	\$140 per motor – walk-in – 23 watts or less	RF-080	<ul style="list-style-type: none"> Existing equipment must be standard efficiency shaded pole fan motors in a refrigerated display case, walk-in cooler or freezer. Walk-in cooler or freezer fans must have a diameter of at least 10 inches. Installed motors must be electronically commutated motors (ECMs). Learn more at http://bit.ly/EWEBcref
	\$140 per motor – walk-in – greater than 23 watts	RF-081	
	\$55 per motor – display case	RF-172	

Water & Other	Rebates Available	EWEB Code	Program Requirements
Heat Pump Water Heaters (HPWH)	\$800 per system – unitary or split system	HPWH-1	<ul style="list-style-type: none"> Heat pump water heater must be installed in a commercial area. Tank size must be at least 50 gallons. Installed product must be Tier 3 and listed on BPA qualified products list. Learn more at http://bit.ly/EWEBchvac
Toilet and Urinal Rebates	\$100 rebate per ≤ 1.00 gallon per flush (gpf) toilet; \$50 rebate per ≤ 1.28 gpf toilet; \$100 rebate per ≤ 0.5 gpf urinal	N/A	<ul style="list-style-type: none"> Pre-existing toilet must use ≥ 1.6 gpf; existing urinals must use ≥ 1.0 gpf. Installed toilets must have the WaterSense label. New construction fixtures are not eligible. Learn more at http://bit.ly/EWEBcwat
Smart Sprinkler Control Rebate	\$25 per sprinkler zone up to a maximum of \$2,000 per site	N/A	<ul style="list-style-type: none"> Sprinkler controllers must be listed on the EPA WaterSense website to qualify. For replacing existing controllers only. New construction is not eligible.
Going Green	Rebates Available	EWEB Code	Program Requirements
Solar Photovoltaic	\$0.50 per AC output watt, up to \$12,500; available for nonprofits, government, or public projects only	N/A	<ul style="list-style-type: none"> Available on a first-come, first-served basis. Total solar resource fraction must be at least 85%. Maximum net meter system size is 25 kW AC output. An EWEB Power Purchase Agreement must be submitted and approved prior to system installation. Generation will be calculated at the current annual rate schedule (2021 Net Metered Rate is \$0.0360 per kWh; 2021 Annual Renewable Generation Rate is \$0.0369 per kWh) For businesses other than nonprofits and government, solar may be an option through either a net meter or generation meter.
Level 2 EV Charging Station	\$1,500 per electric vehicle charger port	N/A	<ul style="list-style-type: none"> For public use at commercial, workplace, fleet, or multifamily locations. Level 2 (208/240V, 30 Amp minimum), equipped with the SAE J1772 standard connector plug, adhere to the OpenADR 2.0 standard. Installation must be done in compliance with applicable codes.
Direct Current Fast Charging (DCFC) Station	\$10,000 for single-port DCFC \$15,000 for multi-port DCFC	N/A	<ul style="list-style-type: none"> For public use. DCFC with a power rating of at least 50kW, equipped with CCS or CHAdeMO standard connector plug, adhere to the OpenADR 2.0 standard. Installation must be done in compliance with applicable codes.
Greenpower	As little as \$10 per month	N/A	<ul style="list-style-type: none"> Sign up online to support local solar installations, grants to non-profits, renewable education in our local schools. Marketing benefits available.

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MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: EWEB Board of Commissioners, Mayor and City Council
 FROM: Karen Kelley, Chief Engineering & Operations Officer
 DATE: September 22, 2021
 SUBJECT: EWEB Water Resiliency

Resiliency at EWEB is a common theme in all our efforts from planning, through design, and into construction and is the key to achieving EWEB's reliability goals and successes.

For drinking water, EWEB takes a "source-to-tap" approach to resiliency starting with our McKenzie River source and ending with our service lines to customers. This is an integrated system of planning, procedures, processes, and tools that collectively prevent or reduce the contamination of drinking water from source to tap to ultimately reduce risks to public health.

Resiliency in Source

The McKenzie River is the sole source of drinking water for nearly 200,000 people in the Eugene metropolitan area. EWEB is a leader not just in Oregon, but nationally, in our utility and customer programs that protect this valuable resource. These programs include the Pure Water Partners (PWP), McKenzie Watershed Landowners, Watershed Monitoring, Watershed Emergency Response, and Watershed Restoration. The following are a few highlights on resiliency:

Watershed Restoration:

- Since the Holiday Farm Fire, EWEB has led the Watershed Recovery Task Force to respond to the immediate restoration needs of the watershed. We have utilized the PWP and several other watershed stakeholders, including the City of Eugene, to leverage resources to mitigate fire impacts and conduct restoration activities geared at protecting water quality.
- EWEB's Board of Commissioners (Board) originally authorized \$1 million for immediate watershed restoration activities following the fire. In March 2021, the Board authorized \$3.9 million, including a newly established "watershed recovery surcharge" to provide a reliable funding base for continued restoration activities, while staff seek outside funding opportunities including legislative allocations and various grants to supplement EWEB funding.
- Restoration work includes property assessments, erosion control, fire fuels reduction, invasive weed removal, revegetation, landowner rebuilding incentives, enhanced early warning water quality monitoring systems, floodplain restoration (including property acquisitions), and carbon sequestration research/pilot projects.

Watershed Emergency Response:

To be proactive in responding to a hazardous spill or other emergencies that could threaten the McKenzie River's water quality, EWEB worked with federal, state and local agencies to implement the McKenzie Watershed Emergency Response System (MWERS). Incident commanders use MWERS to quickly gain access to crucial information, equipment, and trained people, making the overall response

more effective. Watershed responders use geographic information system (GIS) technology to retrieve information on threats, critical resources, available equipment, and other information needed during a crisis. This information allows them to efficiently and effectively stabilize accidental or intentional chemical spills as soon as possible. The system is tested routinely, and a spill drill is conducted annually.

Secondary Water Supply – Willamette River:

In addition, realizing that EWEB has a single source of supply, EWEB has been actively working towards establishing a second source on the Willamette River. This work has included:

- Establishing and maintaining ‘water rights’ on the Willamette River.
- Completing preliminary design for a new treatment plant and intake.
- Acquiring property for the treatment plant and most recently working with the Springfield Utility Board on alternative locations for the facilities.

Resiliency in Treatment

Working on the systems that affect most of our customers first, EWEB spent the last ten years strengthening and rehabilitating our river intakes and water filtration plant on the McKenzie River, spending over \$30 Million on projects. These include:

- Seismic upgrades of the river intakes and treatment facilities
- Rehabilitation of all filters and mechanical systems
- Strategic improvements to ensure the facilities can continue providing water in the event of regional events or supply chain issues. These include the addition of standby power generation and an on-site chlorine generation system which was important during the recent west coast chlorine supply shortage.

Resiliency in Water Supply Network

For the next ten years we are moving downstream, with plans to replace our large reservoirs and strengthen our water transmission system. Planned projects include:

- Add or replace our large base-level reservoirs with new distributed seismically robust reservoirs to enhance both resiliency and operations, including E.40th, College Hill and Hawkins Hill.
- Construction of new water transmission mains in strategic locations to ensure redundancy and reliability in our water delivery system.
- Upgrades to our water transmission main river crossings.

Several of these projects are in construction and EWEB appreciates the collaboration offered by the City on these projects including the E. 40th Reservoir and the EWEB Headquarters Transmission Main across the City redevelopment area.

With respect to the smaller water distribution mains and facilities, EWEB has also been busy with resiliency efforts including:

- Rehabilitating and or replacing critical pump stations and reservoirs.
- Modifying construction practices on our distribution mains to include restrained pipe joints as a standard along with enhanced cathodic protection measures to better prevent material corrosion. In addition, EWEB has installed ‘earthquake’ pipe in strategic locations.

Resiliency in Water Quality Monitoring – *New Water Quality Laboratory*

Another resiliency project EWEB recently completed is related to water quality monitoring and ensuring

EWEB can continue delivering high quality water to its customers. This is our new water quality laboratory. Built to current seismic standards, with backup power, and equipped with the latest test equipment including that required to test for algal toxins, this facility helps ensure EWEB will be able to continue water quality monitoring during regional events that could affect supply chains and the use of other remote laboratories.

Resiliency in Emergency Preparedness

Despite all the above measures, EWEB still believes that emergency preparedness is critical as one cannot predict or prevent all possible hazards to the water system. As such, EWEB has taken numerous steps to enhance the emergency preparedness both within EWEB and the community. These include:

- Establishment of a permanent emergency water distribution system using groundwater wells and sites where customers can get water during system outages.
- The 2021 completion of a risk and resilience assessment for the water utility and the wholistic revision of our Emergency Response Plan as required by the America's Water Infrastructure Act of 2018.
- Ongoing partnership with the Springfield Utility Board and Rainbow Water District to maintain and exercise five emergency interties between our respective water systems via an Intergovernmental Agreement.

The above describes a few of the resiliency efforts undertaken by the EWEB Water Utility. These efforts are not just limited to the water utility. As an organization, resiliency is at the forefront of most efforts from rate setting to ensure we are financially sound, succession planning to ensure depth in critical areas, and the modernization of our technology systems.