

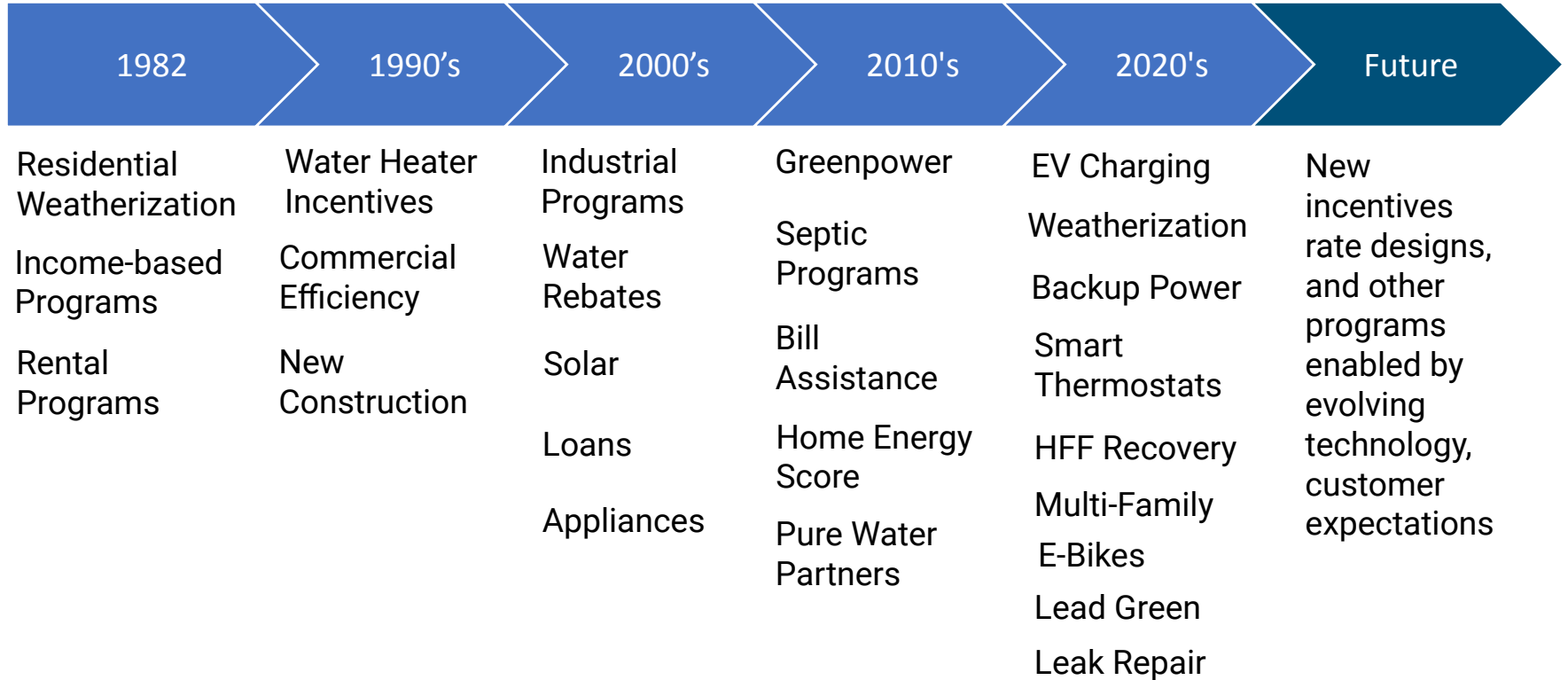
# Energy Education and EWEB Program Offerings

Electrification, Energy Efficiency and Photovoltaic

Juan J Serpa Muñoz  
Business Line Manager  
Eugene Water & Electric  
Board



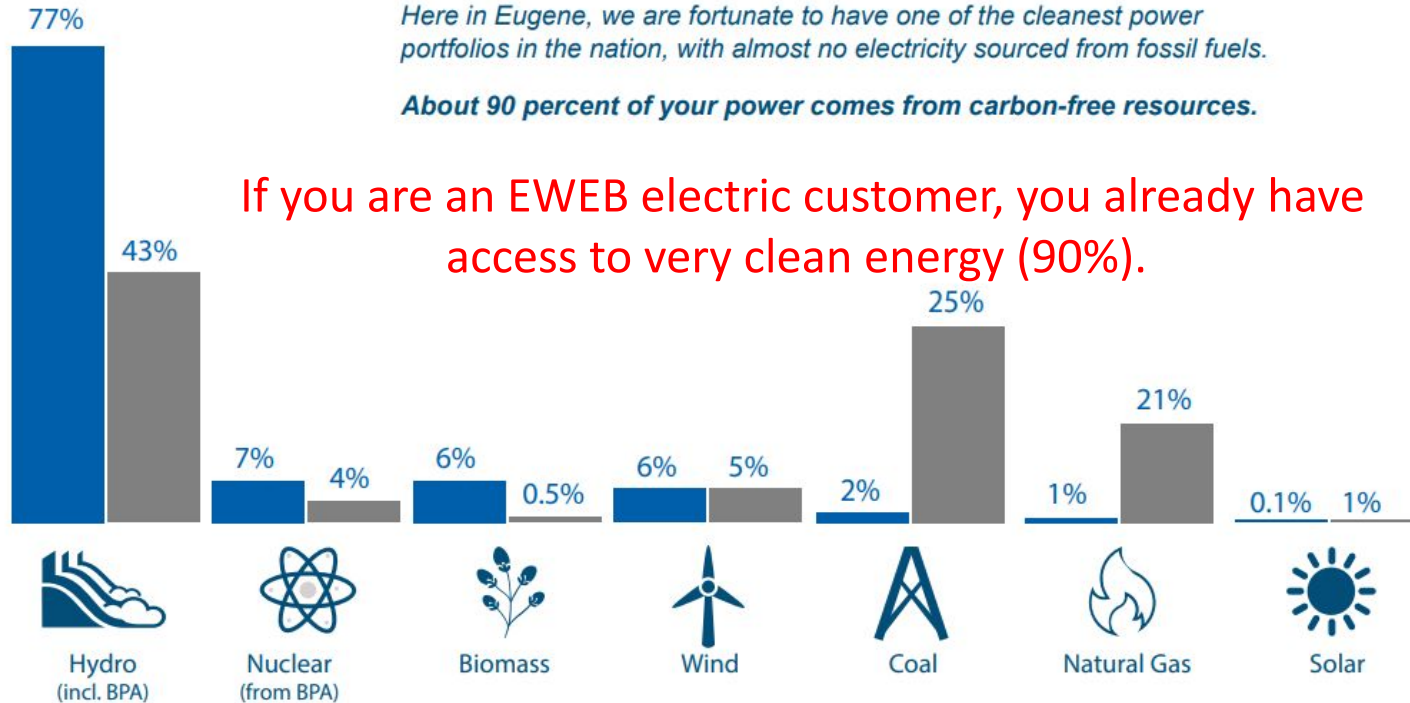
# 40+ Years of EWEB Customer Programs



*Here in Eugene, we are fortunate to have one of the cleanest power portfolios in the nation, with almost no electricity sourced from fossil fuels.*

*About 90 percent of your power comes from carbon-free resources.*

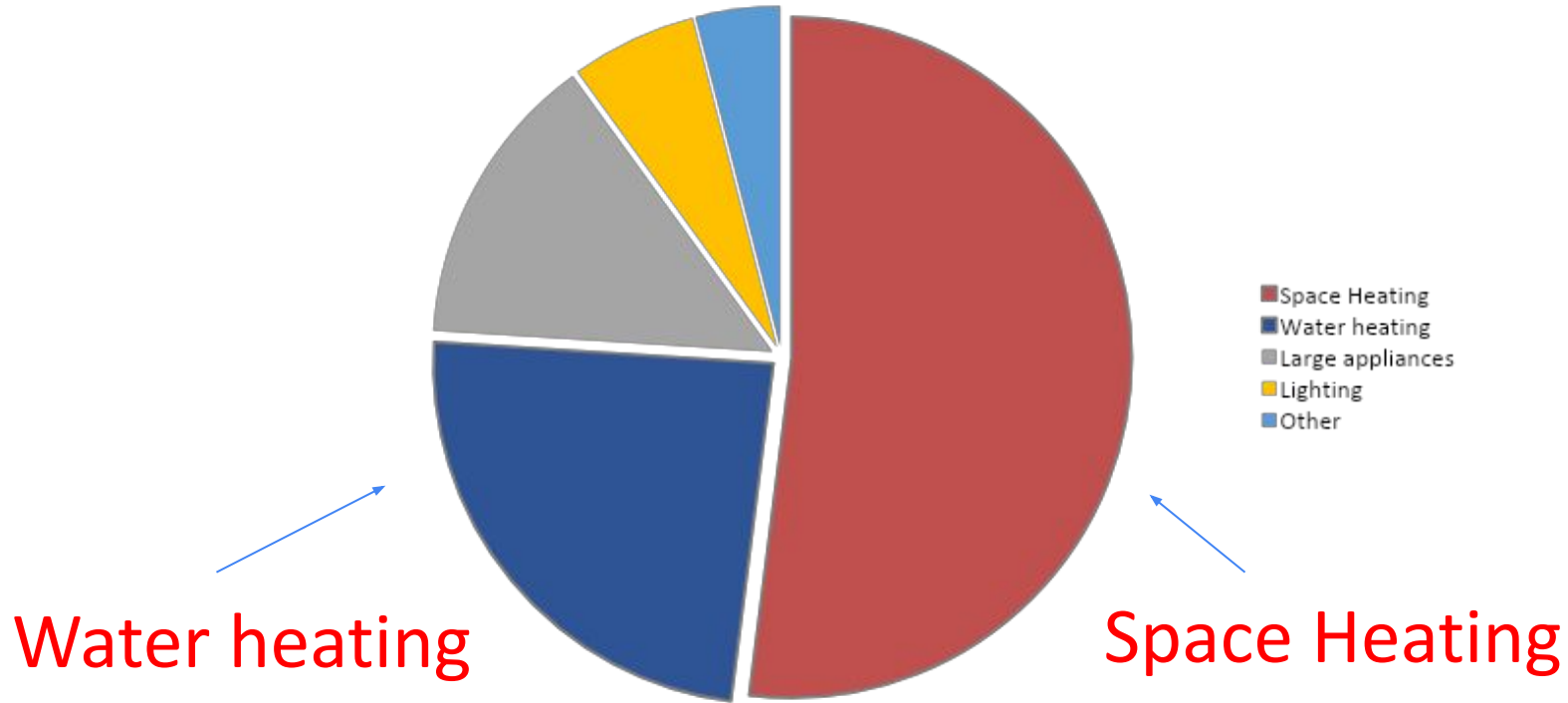
**If you are an EWEB electric customer, you already have access to very clean energy (90%).**



■ Eugene ■ Oregon

09/2021

# Heating uses the most energy



Energy = kWh = \$

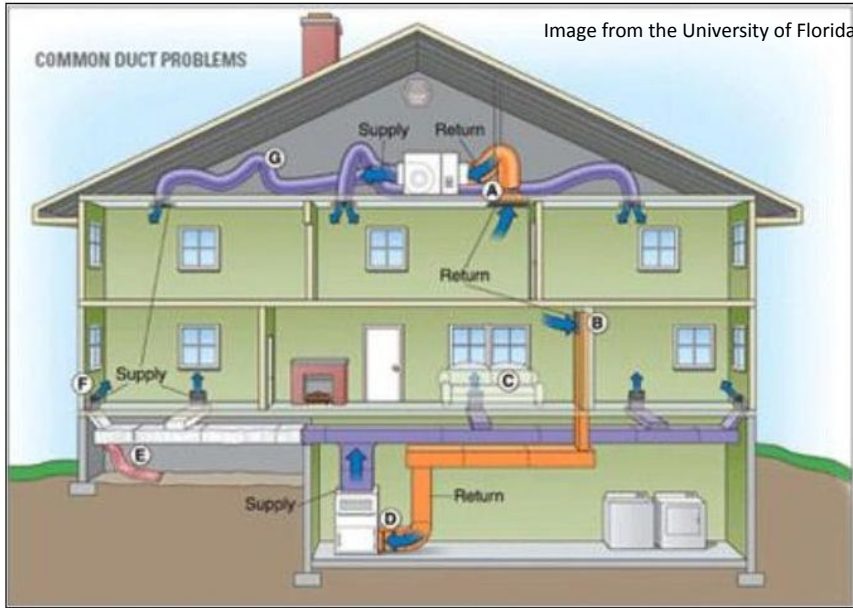
k = 1,000 , W = watts, h = hour

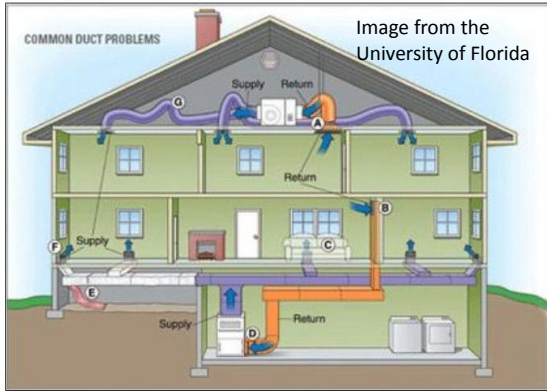
1,000W/hr = 1 kWh  $\approx$  10 cents

Electronic	Wattage	Hours Used
Incandescent Light Bulb	100	1
LED Light Bulb	13	1
Play Station 5	200	1
Laptop	60	1
Space Heater	1,500	1
Water Heater	4,500	1
Heat Pump Water Heater (HP Mode)	500	1

**1,000W/hr = 1 kWh  $\approx$  10 cents**

## Heating Efficiency and Delivery

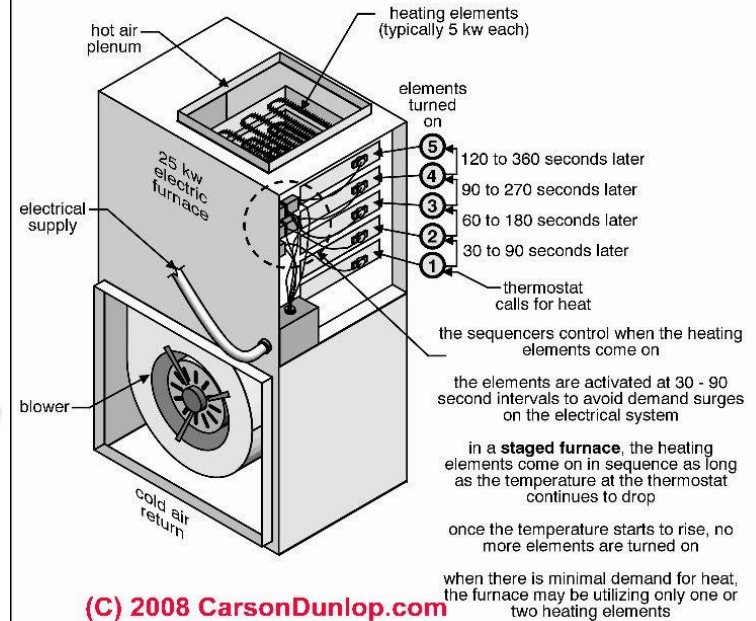




## Electric Furnace

5,000W/heating element,  $\approx 50\text{c/hr}$

### Sequencers

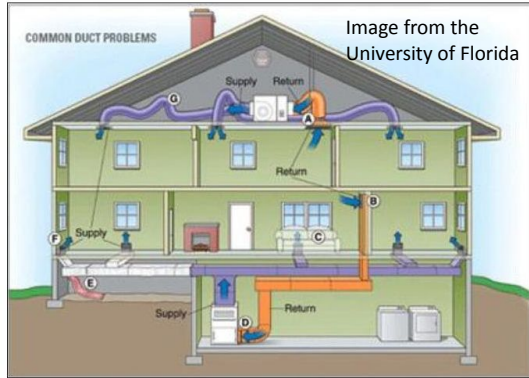




## Heat Pump (Air Source)

≈ 3,200W, 32c/hr

Don't forget about the back up furnace





## Ductless Heat Pump

≈ 3,200W, 32c/hr \*But it is variable speed



- Mounts high on a wall, so it's unobtrusive
- Small, sleek and neutral
- Small 3" opening allows connection of refrigerant and drain lines, plus power and control wiring



## Wall Heat

≈ 1,500W – 3,000W, 15c/hr – 30c/hr



## Ceiling Heat

≈ 2,000W/brm, 20c/hr

≈ 4,000W/lr-kt, 40c/hr



## Baseboard Heat

≈ 2,50W/ft, 2.5c/hr

## Portable Space Heaters

≈ 1,500W, 15c/hr



# Your insulation matters! Your heating system matters!



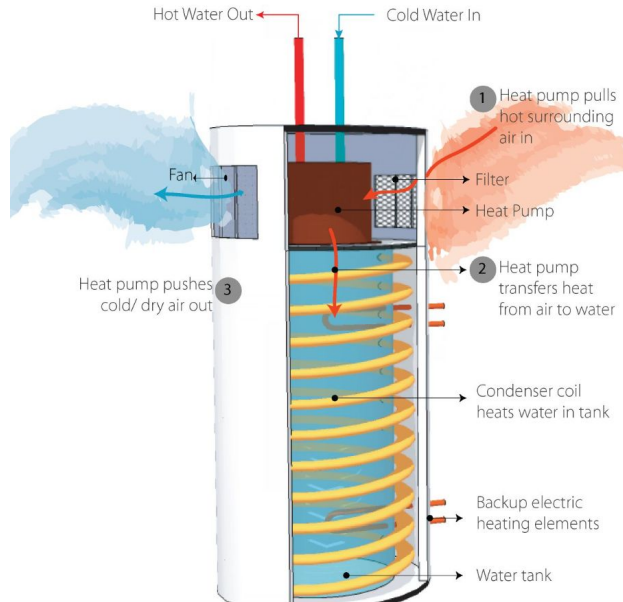
...your windows not so much.

- Average attic insulation – R38
- Average wall insulation – R11
- Newer windows – U-value 0.22 or R4.5

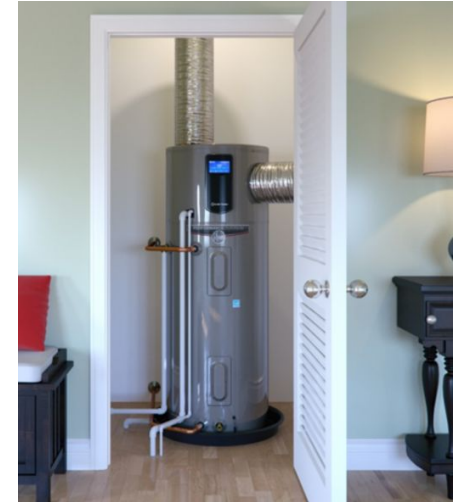


# Energy Education – Heat Pump Water Heater

- Standard water heater draws **4,500 W**
- Heat pump water heater draws **500 W** (HP mode)



Pacific Northwest National  
Laboratory




# EWEB's Energy Efficiency Income-Based Program Offerings



## Ducted heat pump program

High-efficiency heat pumps are ideal for our mild Pacific Northwest climate.




## Ductless heat pump program

An energy efficient ductless heat pump is cheaper to install and operate than any other heating system.



## Insulation, Air Sealing and Windows Program

We offer rebates to help you upgrade your home's existing shell with energy-efficient products. Improve your insulation and you can conserve heating and save money over time.



## Heat pump water heater program

We promote energy efficiency by offering you a streamlined and cost-effective way to replace your home's existing water heater with an energy-efficient heat pump water heater.

# EWEB's Energy Efficiency Income-Based Program Offerings

PRODUCT	REBATE	ZERO INTEREST LOAN
Ductless Heat Pump	Owner Occupied: \$3,800 Rental:\$1,000	Up to \$6,000, plus \$2,000 per additional head installed (maximum 5 total heads)
Insulation	100 percent of eligible program costs	NA
Windows	Owner Occupied: \$20/sq ft of glass Rental: \$10/sq ft of glass	Up to \$4,000
Heat Pump Water Heater	Owner Occupied: \$1,700 Rental: \$1,000	Up to \$2,500
Water Leak Repair Assistance	100 percent of eligible costs	NA

To learn about eligibility and other program requirements, follow links above to individual product pages, or contact us at [ems.answers@eweb.org](mailto:ems.answers@eweb.org) or 541-685-7088.

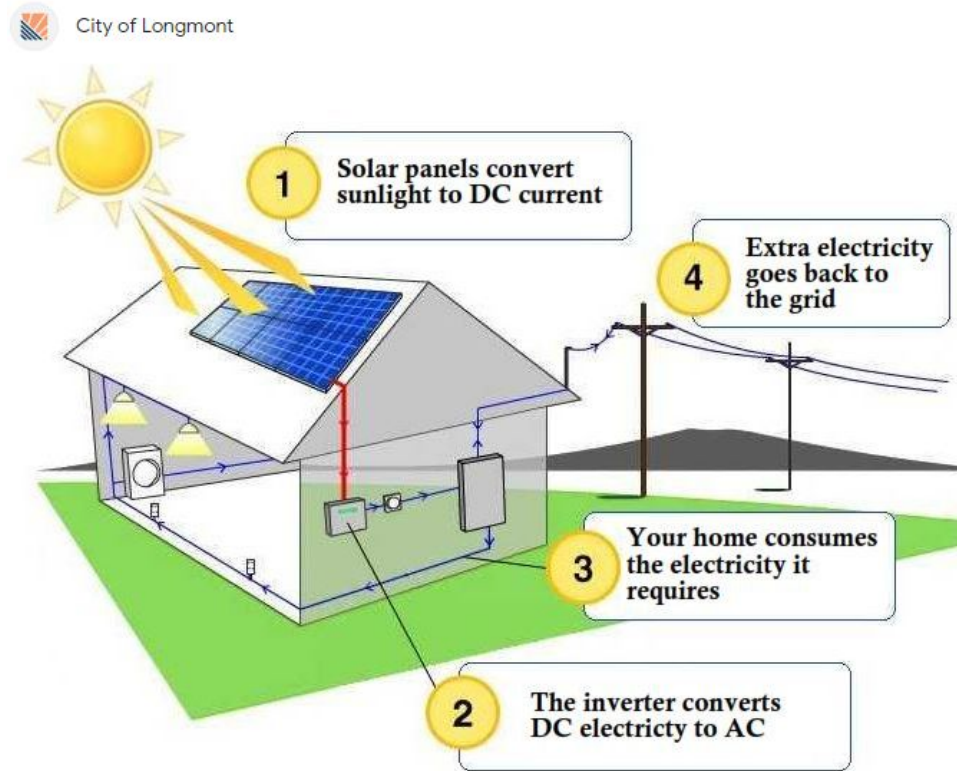
**Maximum of \$8,000 in total rebates for income-based programs per premises**



# EWEB's Energy Efficiency Income-Based Income Qualification

HOUSEHOLD SIZE	ANNUAL INCOME	MONTHLY INCOME
1	\$31,266	\$2,606
2	\$40,886	\$3,407
3	\$50,506	\$4,209
4	\$60,126	\$5,011
5	\$70,280	\$5,857
6	\$80,560	\$6,713
7	\$90,840	\$7,570
8	\$101,120	\$8,247
9	\$111,400	\$9,283
10	\$121,680	\$10,140
11	\$131,960	\$10,997
12	\$142,240	\$11,853
Each additional member	\$5,140	\$428

## How Net Metering Works



# EWEB's Solar Program Offerings and Considerations

A man with grey hair, wearing blue-tinted sunglasses and a light green polo shirt, is smiling and holding two solar panels. The panels are dark blue with silver grid lines. The background is a plain, light-colored wall.

## Residential Solar PV Program

Produce clean, renewable energy from the sun

### EWEB's Program

- \$0.40/AC output watt, with a maximum incentive of \$2,500

### Considerations

- Cost per AC watt can be  $\approx$  \$4.15
- A 1 kW (1,000 watts) system could cost  $\approx$  \$4,150, generating about 1,000 kWh per year
- You would pay  $\approx$  \$100 for that energy to EWEB
- With tax credits (if you have the tax liability) and state rebates (if available), a potential payback can be over 25 years

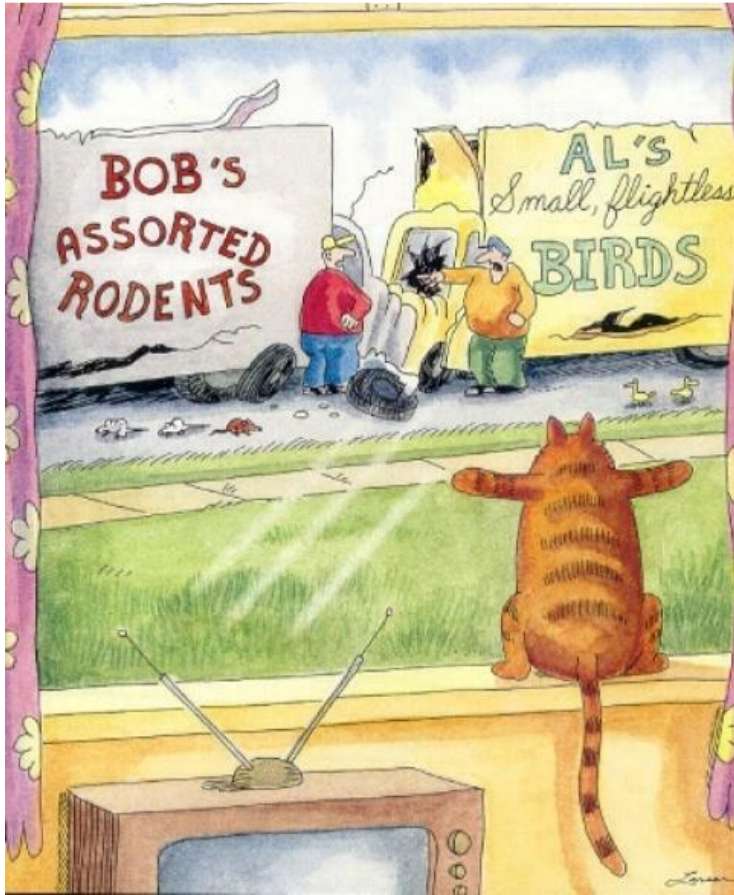


## Choosing Clean Energy

With EWEB's 90 percent renewable power, choosing clean energy over fossil fuels is a lot easier than you might realize.

[Learn more](#)

- **Income based incentives are not available**
- Ducted Heat Pump
  - \$1,000 rebate or \$15,000 loan
- Ductless Heat Pump
  - \$800 rebate or loan (\$6,000 plus \$2,000 per additional head, up to \$14,000)
- Heat Pump Water Heater
  - \$800 rebate or \$2,500 loan



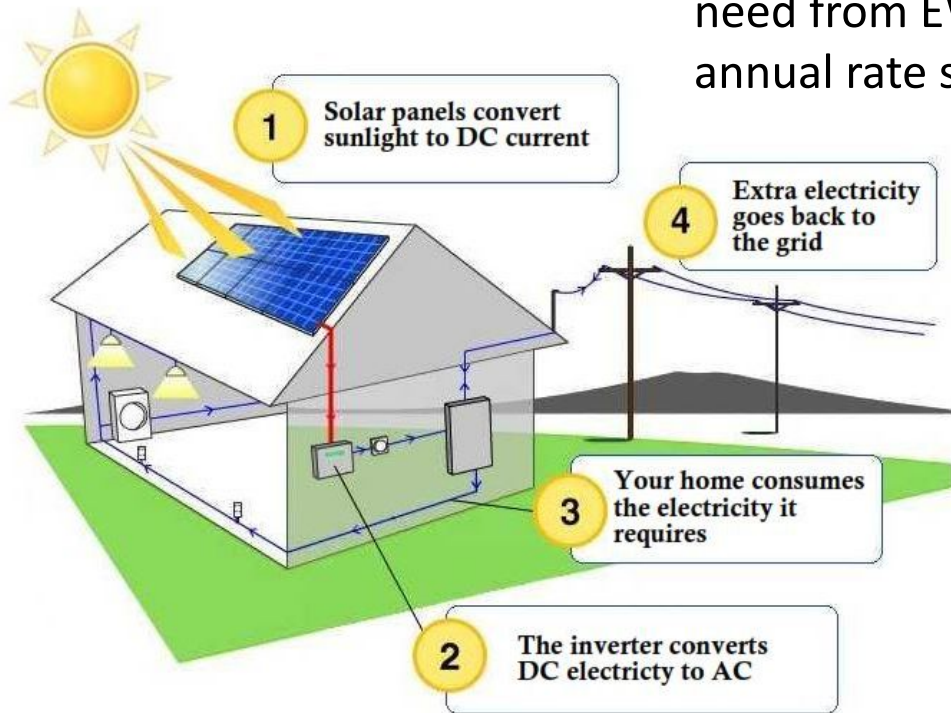
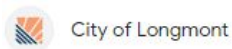
The Far Side – Gary Larson

Thank you!

- Get your energy efficiency veggies done before your solar dessert
- What are the goals you are trying to accomplish with solar?
- Understand how net metering works
- Understand the actual financial values and costs
- Understand EWEB's true-up policy
- Get multiple bids
- Beware of pushy salespeople
- Do not sign a contract without clearly understanding all the above



# Renewables – Solar Net Metering and EWEB Policy



The excess energy generated over and above what you need from EWEB will be credited monthly at the current annual rate schedule

Year	EWEB NM Rate / kWh
2014	\$0.0375
2015	\$0.0416
2016	\$0.0311
2017	\$0.0276
2018	\$0.0255
2019	\$0.0255
2020	\$0.0297
2021	\$0.0360
2022	\$0.0693
2023	\$0.0693

2023 Res Retail Rate	\$0.0972
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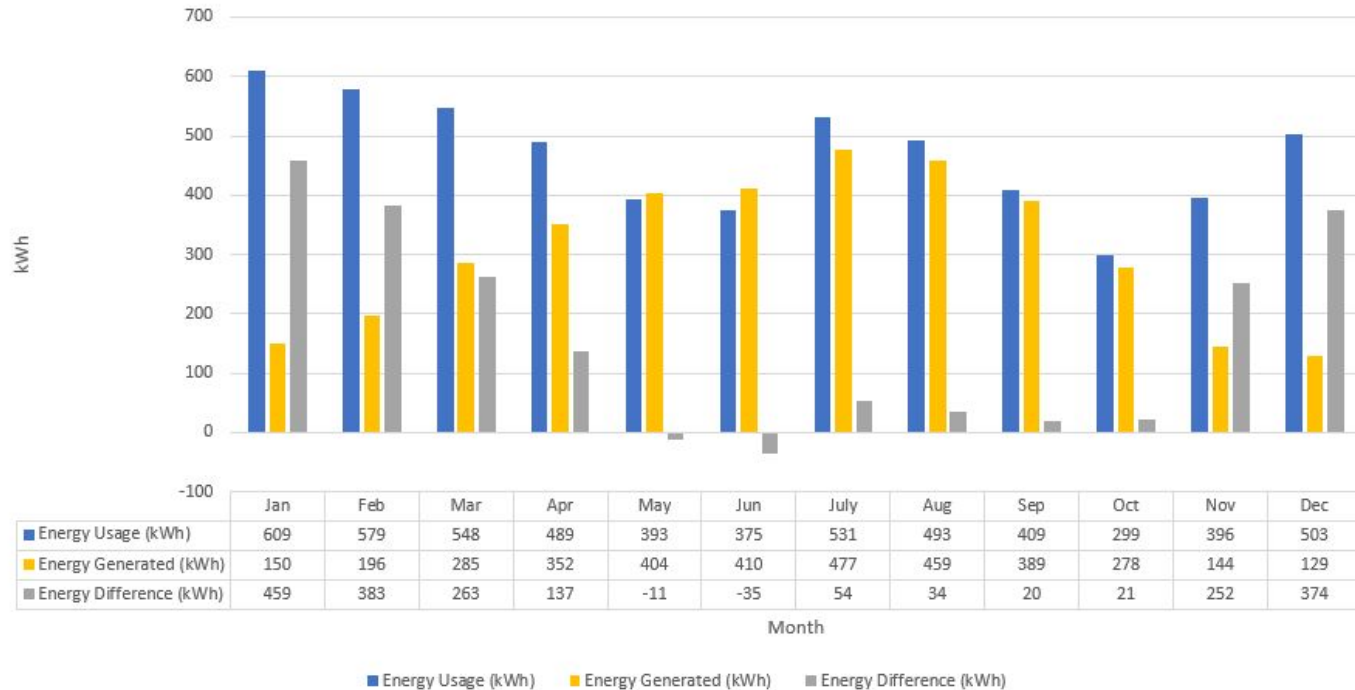


# Renewables – System Sizing

Consumption and Generation Values - Inputs and Calculations						
Month	Energy Usage (kWh)	Energy Generated (kWh)	Energy Difference (kWh)	Energy Generated - Retail Rate Offset Value	Energy Generated - sold at NM Rate Value	Total Energy Generated Value
Jan	609	150	459	\$14.22	\$0.00	\$14.22
Feb	579	196	383	\$18.58	\$0.00	\$18.58
Mar	548	285	263	\$27.02	\$0.00	\$27.02
Apr	489	352	137	\$33.37	\$0.00	\$33.37
May	393	404	-11	\$37.26	\$0.76	\$38.02
Jun	375	410	-35	\$35.55	\$2.43	\$37.98
July	531	477	54	\$45.22	\$0.00	\$45.22
Aug	493	459	34	\$43.51	\$0.00	\$43.51
Sep	409	389	20	\$36.88	\$0.00	\$36.88
Oct	299	278	21	\$26.35	\$0.00	\$26.35
Nov	396	144	252	\$13.65	\$0.00	\$13.65
Dec	503	129	374	\$12.23	\$0.00	\$12.23
<b>Total</b>	<b>5,624</b>	<b>3,673</b>	<b>total</b>	<b>\$343.84</b>	<b>\$3.19</b>	<b>\$347.03</b>
<b>Gen % of Needed E</b>		<b>65%</b>				

- 3.6 kW System
- 65% yearly energy use

Residential NM - kWh and kWhG



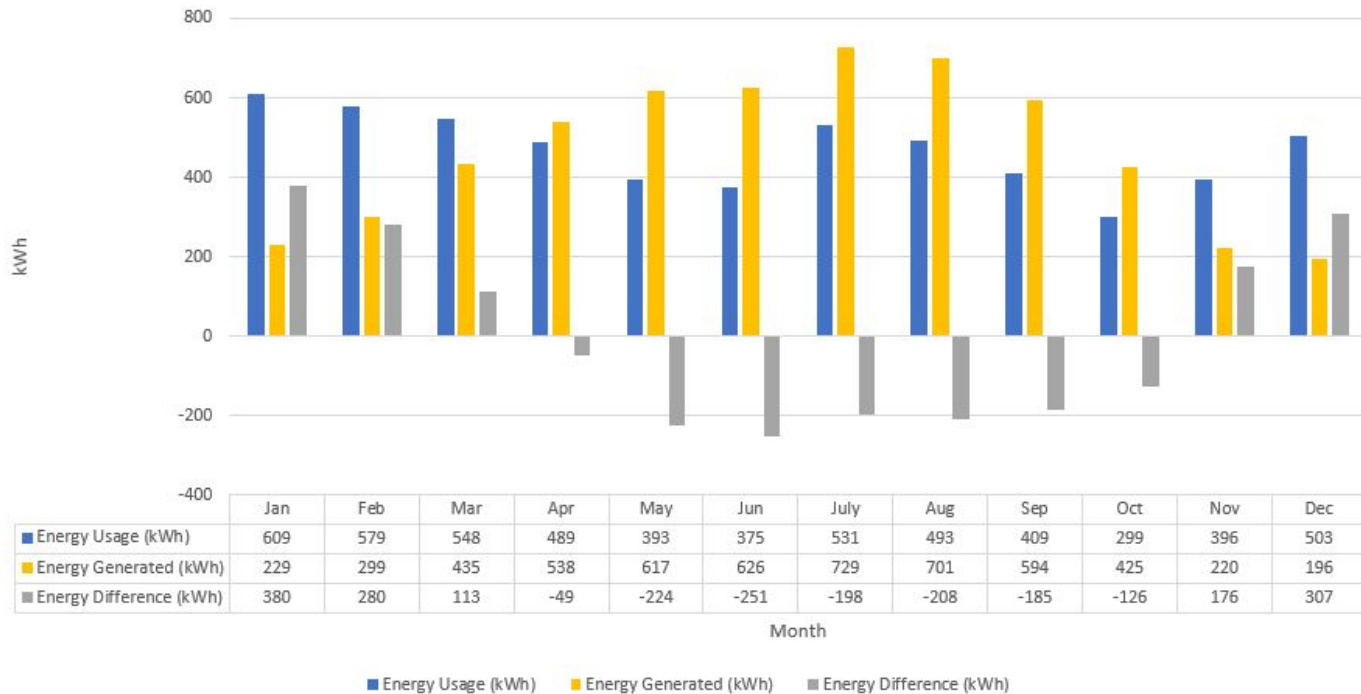


# Renewables – System Sizing

Consumption and Generation Values - Inputs and Calculations						
Month	Energy Usage (kWh)	Energy Generated (kWh)	Energy Difference (kWh)	Energy Generated - Retail Rate Offset Value	Energy Generated - Sold at NM Rate Value	Total Energy Generated Value
Jan	609	229	380	\$21.71	\$0.00	\$21.71
Feb	579	299	280	\$28.35	\$0.00	\$28.35
Mar	548	435	113	\$41.24	\$0.00	\$41.24
Apr	489	538	-49	\$46.36	\$3.40	\$49.76
May	393	617	-224	\$37.26	\$15.52	\$52.78
Jun	375	626	-251	\$35.55	\$17.39	\$52.94
July	531	729	-198	\$50.34	\$13.72	\$64.06
Aug	493	701	-208	\$46.74	\$14.41	\$61.15
Sep	409	594	-185	\$38.77	\$12.82	\$51.59
Oct	299	425	-126	\$28.35	\$8.73	\$37.08
Nov	396	220	176	\$20.86	\$0.00	\$20.86
Dec	503	196	307	\$18.58	\$0.00	\$18.58
<b>Total</b>	<b>5,624</b>	<b>5,609</b>	<b>Total</b>	<b>\$414.11</b>	<b>\$85.99</b>	<b>\$500.10</b>
Gen % of Needed E		100%				

- 5.5 kW System
- 100% yearly energy use

## Residential NM - kWh and kWhG



Questions?



# BEYOND TOXICS

*Leadership for a thriving and just Oregon*

## **Inflation Reduction Act Rebates and Examples**

# Inflation Reduction Act Credits

- ★ **100% Rebate for Low-Income Households**
- ★ **50% Rebate for Middle-Income Households**
- ★ **Additional 30% Tax Credit**

## Electrification Rebate Levels For Qualified Electrification Projects

### Income Eligibility and % Costs Covered

<b>Low-income:</b> <80% Area Median Income (AMI) % costs covered (including installation)	<b>100%</b>
<b>Moderate-income:</b> 80-150% AMI % costs covered (including installation)	<b>50%</b>

### Overall Incentives

Max consumer rebate	<b>\$14,000</b>
Max contractor rebate	<b>\$500</b>

### Rebates for Qualified Electrification Projects

Heat pump HVAC	<b>\$8,000</b>
Heat pump water heater	<b>\$1,750</b>
Electric stove/cooktop	<b>\$840</b>
Heat pump clothes dryer	<b>\$840</b>
Breaker box	<b>\$4,000</b>
Electric wiring	<b>\$2,500</b>
Weatherization insulation, air sealing, ventilation	<b>\$1,600</b>

\*Additional Energy Efficiency Programs for all-income levels coming later

## Example #1a - Heat Pump Water Heater (low-income)

Example Cost: **\$3,000** for Heat Pump Water Heater

→ EWEB Rebate Available: **\$1,700** (*\*only \$800 for customers with gas water heating*)

→ IRA Rebate Available: **\$1,750**

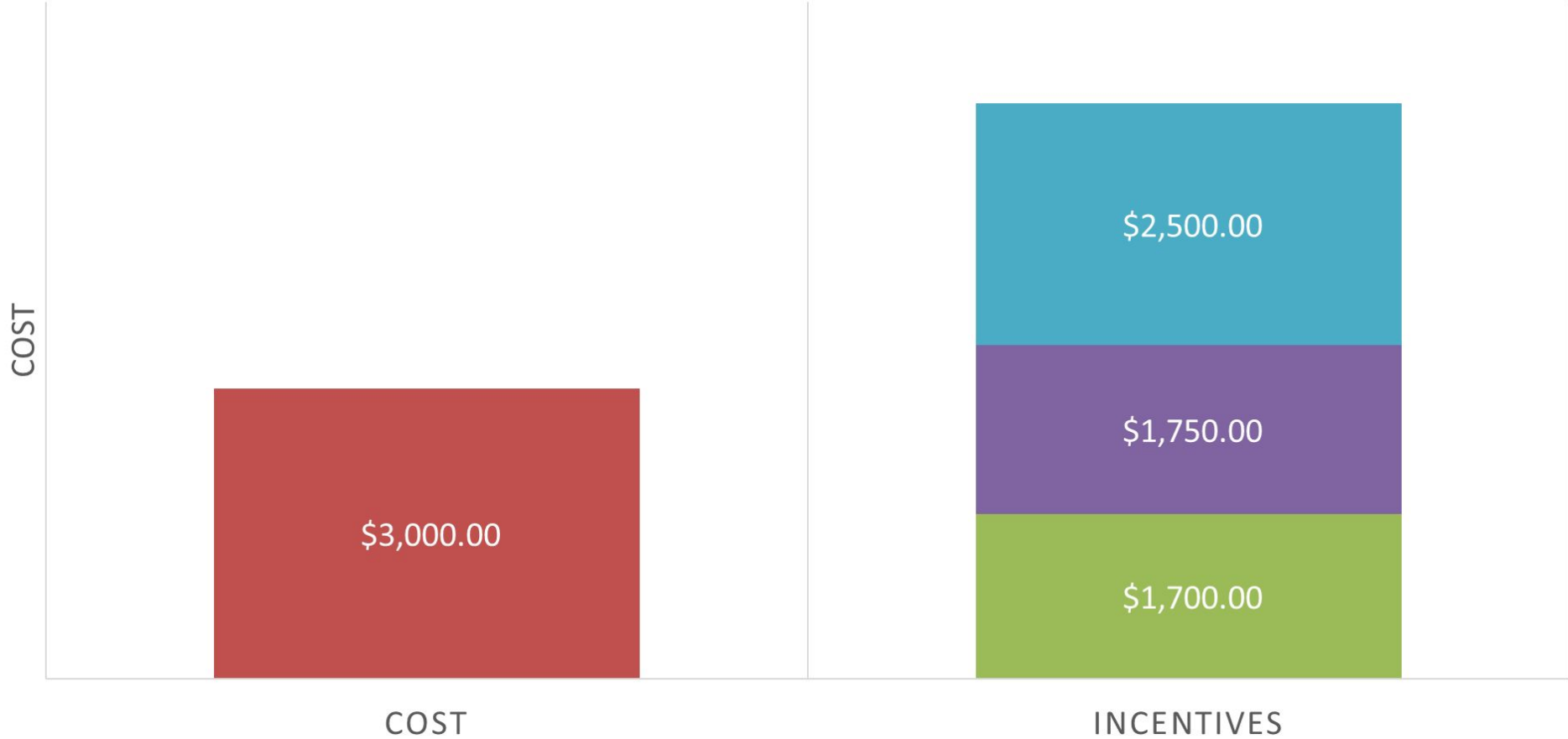
**Total Rebates available: \$3,450** (*\$2,550 for gas customers*)

Example Cost *minus* Available Rebates = **Final Customer Cost**

- **\$3,000-\$3,450 = \$0 Final Customer Cost**

# HEAT PUMP WATER HEATER - LOW INCOME

■ Heat Pump Water Heater Cost (Example) ■ EWEB Incentive ■ IRA Incentive ■ EWEB Loan



# Example #1b - Heat Pump Water Heater (middle-income)

Example Cost: **\$3,000** for 50 gallon Heat Pump Water Heater

- EWEB Rebate Available: \$800
- IRA Rebate Available: \$1,750 (up to 50% off)

Example Cost *minus* Available Rebates = **Final Customer Cost**

- **Apply EWEB Rebate:**  $\$3,000 - \$800 = \$2,200$
- **Calculate IRA Incentive:**  $\$2,200 \times 50\% = \$1,100$

**Apply IRA Incentive:**  $\$2,200 - \$1,100 = \$1,100$  in Upfront Costs

- **Available Tax Credit** =  $\$1,100 \times 30\% = \$330$
- **Apply Tax Credit** =  $\$1,100 - \$330 = \$770$ 
  - **Final Customer Cost = \$770**

# HEAT PUMP WATER HEATER - MIDDLE INCOME

■ Heat Pump Water Heater Cost (Example) ■ EWEB Incentive ■ IRA Incentive ■ Cash



COST



INCENTIVES



## Example #2a - *Ductless Heat Pump (low-income)*

Example Cost: **\$10,000** for Ductless Heat Pump

- EWEB Rebate Available: \$3,800 (low-income)
- IRA Rebate Available: \$8,000

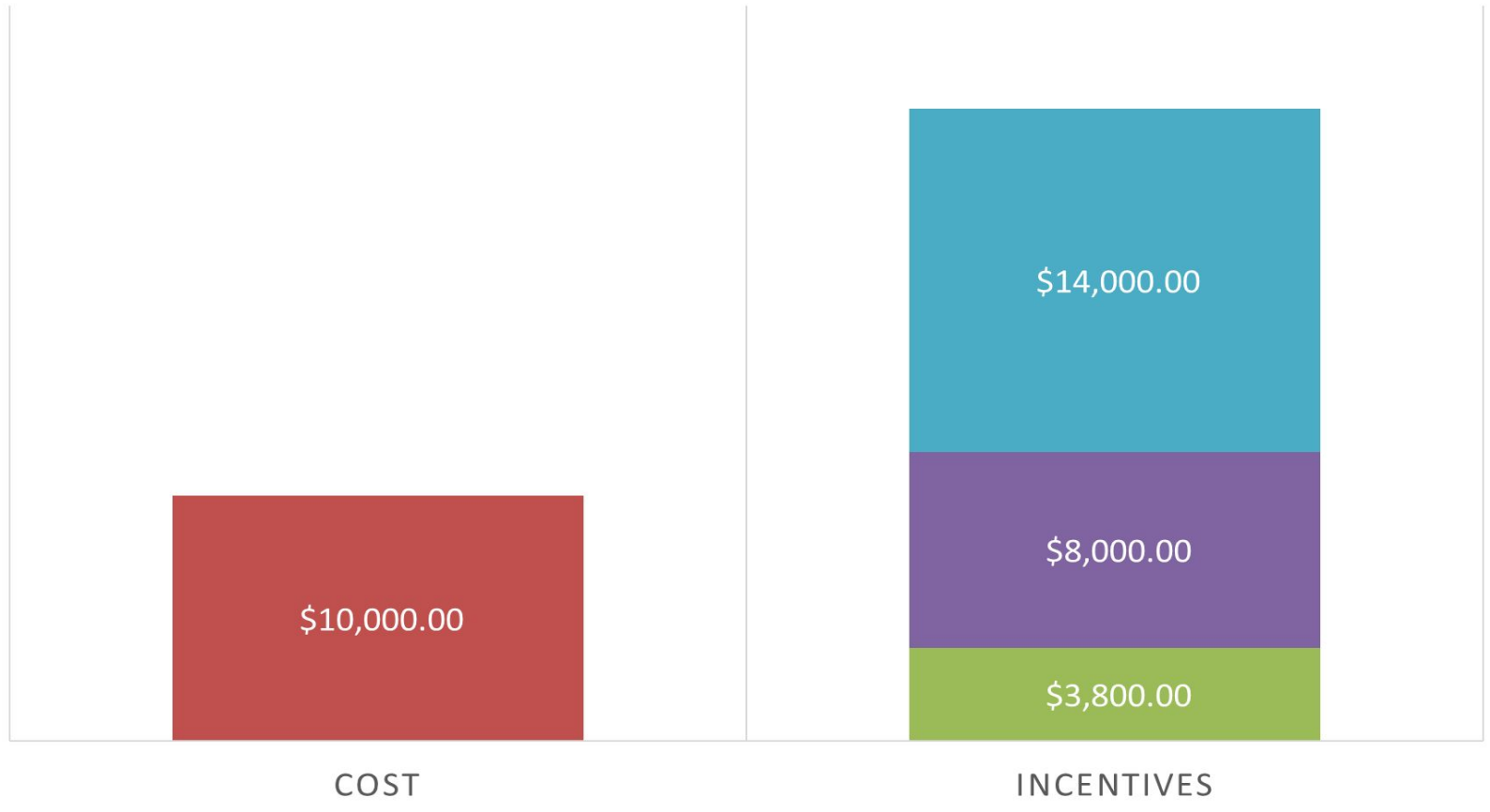
**Total Rebates available: \$11,800**

Example Cost *minus* Available Rebates = **Final Customer Cost**

- $\$10,000 - \$11,800 = \mathbf{\$0}$  **Final Customer Cost**

## HEAT PUMP - LOW INCOME

■ Heat Pump Cost (Example) ■ EWEB Incentive ■ IRA Incentive ■ EWEB Loan



\*Additional \$5,000 potentially available from Oregon Department of Energy Heat Pump Program

## Example #2b - *Ductless Heat Pump (middle-income)*

Example Cost: **\$10,000** for Ductless Heat Pump (with EWEB Rebate)

- EWEB Rebate Available: **\$800**
- IRA Rebate Available: **\$8,000 (up to 50% off)**

Example Cost *minus* Available Rebates = **Final Customer Cost**

- **Apply EWEB Rebate:**  $\$10,000 - \$800 = \$9,200$
- **Calculate IRA Rebate:**  $\$8500 \times 50\% = \$4,600$

**Apply IRA Rebate:**  $\$9,200 - \$4,600 = \$4,600$

- **Upfront Cost = \$4,600**

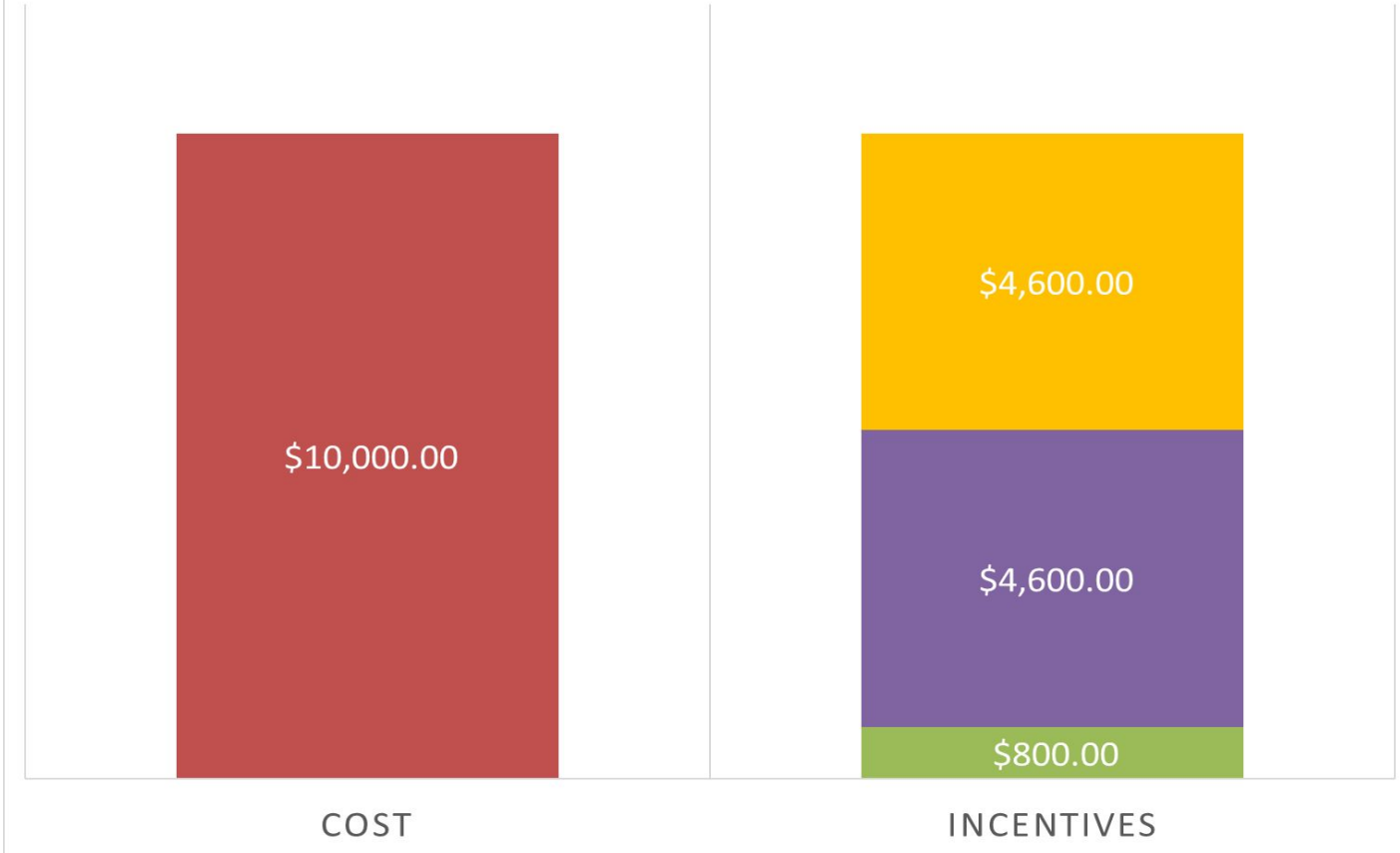
**Calculate Tax Credit (money-back):**  $\$4,600 \times 30\% = \$1,380$

**Calculate Final Cost:**  $\$4,600 - \$1,380 = \$3,220$

- **Final Customer Cost = \$3,220**

# HEAT PUMP - MODERATE INCOME (EWEB REBATE)

■ Heat Pump Cost (Example) ■ EWEB Incentive ■ IRA Incentive ■ Cash



\*Graph doesn't show tax credit of \$1,380

## Example #2c - Ductless Heat Pump (middle-income)

Example Cost: **\$10,000** for Ductless Heat Pump (with EWEB loan)

- EWEB Zero-interest Loan Available: **\$14,000** (\$6,000 for first head, \$2,000 each added)
- IRA Rebate Available: **\$8,000** (up to 50% off)

Example Cost *minus* Available Rebates and Tax Credits = **Final Customer Cost**

- **Calculate IRA Rebate:**  $\$10,000 \times 50\% = \$5,000$

**Apply IRA Rebate:**  $\$10,000 - \$5,000 = \$5,000$

**Apply EWEB Loan of \$5,000:**  $\$5,000 - \$5,000 = \$0$

- **Upfront Cost = \$0**

**Calculate Tax Credit (money-back):**  $\$5,000 \times 30\% = \$1,500$

**Calculate Final Cost:**  $\$5,000 - \$1,500 = \$3,500$

- **Final Customer Cost = \$3,500**

# HEAT PUMP - MODERATE INCOME (EWEB LOAN)

■ Heat Pump Cost (Example)   ■ IRA Incentive   ■ EWEB Loan



\*Graph doesn't show tax credit of \$1,500

Questions?

# Imagine your this is your Home....

The graphic on your paper shows potential areas in your home where air can escape, which impacts how much cold or hot air escapes or enters your home.

Circle a few areas on the graphic where the air most escaping in your home.

You may want to rank your priorities to identify the most prevalent problem area.

Think about

- What can you do first, second or third...?
- What can you afford to do?



# Discussion Prompts

1. What do you need to feel comfortable in your home?
2. What would an energy efficiency project look like in your home?
3. Do you feel like you have enough information to think about future actions

# OHA Air Conditioner Distribution

Beyond Toxics is looking to receive mobile air conditioners from the Oregon Health Authority (OHA) for community members who are most in need.

To be eligible:

- Do not have a cooling device, and
- Qualify for medical assistance through OHA, Oregon Department of Human Services (ODHS) or Medicare, or have received these services in the past 12 months, and
- Are at risk for heat-related illness. This includes:
  - People age 65 years or older; or
  - Medically fragile children; or
  - People with a disability or health condition that makes them vulnerable to heat events. These include diabetes, heart disease, hypertension, obesity, or a respiratory disease.