CITY OF BEND

City Hall
710 NW Wall Street
Bend, OR 97703

MEMORANDUM

To: Environment and Climate Committee
From: Cassie Lacy, Senior Management Analyst
Date: November 2, 2026
Re: Climate Pollution Fee Revenue Incentive Program Options

The City of Bend is exploring the adoption of a fee aimed at reducing greenhouse gas emissions in new residential buildings. The objective of the fee is to promote the health, safety, and general welfare of Bend residents and visitors by accounting for and mitigating the negative impacts associated with fossil fuel emissions. This objective can be accomplished through connecting environmental impacts to economic costs. A fee and programs supported by a fee can incentivize the use of electric equipment, offsetting the economic cost to people in Bend from fossil fuel emissions. The Bend City Council has directed the exploration of various ways that the revenues earned through the fee can be used.

The purpose of this memo is to provide a summary of options for the use of funds secured through the electrification fee, including the development of new incentive programs for efficient electric equipment, adding funds to existing energy efficiency incentive programs, investing in a community solar project, and expanding the City's existing Climate Action Partner Grant program. Further research will be necessary after options have been narrowed down to include more specific cost and benefit assumptions.

FUNDING LEVELS

The amount of funds that will be secured through the City of Bend electrification fee is dependent upon several factors and assumptions. At the February 2026 Council work session, Council members supported the following fee levels across three tiers (based on home size) (Table 1). The fee schedule for the initial year of the fee will be adopted in March 2027 and may vary from these numbers, but is expected to remain similar, so these values are used for illustrative purposes.

Table 1-1: Fee Amounts by Tier

Equipment	Tier 1 Fee Amount	Tier 2 Fee Amount	Tier 3 Fee Amount
Gas Forced Air Furnace	$978	$1,505	$2,258
Dual Fuel Heat Pump*	$697	$1,073	$1,609
Gas Water Heater	$112	$173	$260

Gas Stove	$93	$143	$215
Gas Dryer	$22	$33	$50
Gas Fireplace	$88	$136	$204

*Fee levels for dual fuel heat pump are preliminary and have not been presented to Council at the time of this memo.

In order to calculate the estimated annual revenue that will be secured through the electrification fee, a series of assumptions were used including:

- Number of new construction homes annually in the City of Bend (assumed at 741)
- Percentage of Tier 1, Tier 2, and Tier 3 new construction homes built on an annual basis (assumed 46% tier 1, 27% tier 2, and 27% tier 3)
- Number of homes that would pay the fee vs electrify (assumed 25% of new construction homes would electrify, leaving 75% of homes to pay all or some of the fee)
- Estimating the average fee per home as the average fee for the two potential heating types (furnace or dual fuel heat pump) plus the fee paid for each individual equipment.

Based on these assumptions, the estimated annual fee revenue is approximately $960,000 as outlined in Table 1-2.

Table 1-2: Estimated Annual Revenue Secured from Electrification Fee

Metric	Tier 1	Tier 2	Tier 3
Fee Amount (average per home)	$1,153	$1,774	$2,662
# Homes that pay fee	256	150	150
# Homes that electrify	85	50	50
Fee Revenue	$294,920	$266,316	$399,474
Total Annual Fee Revenue		$960,710	

Additional analysis was completed to understand multiple revenue scenarios, to account for the uncertainty in the revenue realized through the fee. In addition to the estimated fee review shown in Table 1-2, a 'lower', 'higher', and 'Heat Pump+Gas Water Heater and Appliances' scenarios were also modeled. The lower electrification revenue assumes that fewer homes chose to electrify, therefore resulting in more homes paying the fee resulting in higher total revenue. Conversely, the higher electrification fee assumes that more homes electrify, therefore fewer homes paying the fee resulting in a lower total revenue. The final scenario considers a new code that takes effect in Bend in April of 2027 where all new homes must use a heat pump for air conditioning. Therefore, the modeled scenario includes all new construction homes using a heat pump for both heating and cooling but maintain gas for water heating and appliances, resulting in significantly lower revenues based on fees for water heating and

appliances only. Table 1-3 outlines the estimated total annual revenue for the four modeled scenarios.

Table 1-3: City of Bend Fee Revenue Scenarios

Funding	Lower Electrification	Estimated Electrification	Higher Electrification	Heat Pump +Gas WH and Appliances
Total Revenue	**~$1,250,000**	**~$1,000,000**	**~$880,00**	**~$260,000**

OBJECTIVES FOR REVENUE FUNDS

The City of Bend and the Environment and Climate Committee (ECC) discussed primary objectives for the use of the revenue funds. Overall, the ECC appears to support a program that reduces emissions, lowers energy costs, expands equitable access to clean energy, and prioritizes existing homes and underserved households, while coordinating closely with existing incentive programs and exploring both building-level and community-scale clean energy solutions.

The following summarizes the objectives, not in any significant order:

- **Maximize Community-Wide Impact**
  - Prioritize investments that deliver the greatest environmental and community benefit across the largest number of households.
  - Explore both household-level and larger-scale solutions, such as grid-cleaning investments (e.g., community solar or other clean energy projects) that benefit all residents.

- **Reduce Energy Burden While Lowering Emissions**
  - Design programs that help residents lower utility bills while also achieving greenhouse gas (GHG) reductions.
  - Focus especially on households struggling with energy affordability and utility costs.
  - Pair electrification with measures that help manage operating costs, such as solar and battery storage.

- **Focus on Existing Homes While Maintaining Some New Construction Support**

- Prioritize existing residential buildings, where the greatest opportunity for emissions reductions may exist and where incentives could complement existing new construction requirements.
- Maintain targeted support for new construction, particularly for:
  - All-electric homes that avoid gas service altogether.
  - Affordable housing developments.
- Recognize the tradeoff that existing-home upgrades are often more expensive and less cost-effective than influencing decisions in new construction.

- **Advance Equity Through Inclusive Program Design**
  - Ensure low-income households, renters, and affordable housing residents can participate and benefit.
  - Consider the use of income-tiered incentives rather than a strict low-income/non-low-income cutoff.
  - Explicitly evaluate and address barriers faced by renters and multifamily property owners.
  - Consider solutions appropriate for renters, such as weatherization measures and plug-in/balcony solar.

- **Integrate Solar and Clean Energy Solutions**
  - Include solar as a key program component rather than focusing solely on electrification equipment.
  - Explore bundled offerings, particularly for low-income households, that combine electrification, solar, and battery storage to reduce long-term energy costs and improve resilience.
  - Assess opportunities for both individual and community-scale solar investments.

- **Coordinate with Existing Programs and Funding Sources**
  - Align incentives with existing utility, regional, and low-income assistance programs.
  - Understand and communicate available incentives from other sources.
  - Explore leveraging existing program infrastructure (e.g., ETO, BPA, weatherization programs) to reduce administrative costs and improve delivery.

- **Ensure Cost Effectiveness and Market Feasibility**
  - Evaluate incremental costs for both new and existing construction measures.
  - Assess cost-effectiveness alongside GHG reduction potential.
  - Develop evidence-based approaches that balance community impact, affordability, and emissions reductions.

- **Consider Non-Rebate Barriers to Electrification**
  - Explore complementary strategies beyond equipment incentives, including workforce development, contractor availability, and other implementation barriers that may limit adoption.

PROGRAM OPTIONS: INCENTIVES

Utilities across the United States, both regulated and non-regulated, offer incentives to encourage the adoption of energy efficiency, demand response, and renewable energy technologies in residential homes. Although the City of Bend is not a utility, it can similarly use incentives to encourage residential electrification and advance community energy and climate goals. Incentive programs can be structured in a variety of ways, typically providing financial assistance to offset the cost of purchasing and installing high-efficiency electric equipment. Key considerations in designing an effective incentive program include, but are not limited to:

- Cost of the baseline equipment (typically code level equipment)
- Cost of energy efficient equipment
- Incremental cost to the customer to purchase the energy efficient equipment = energy efficient cost minus baseline
- Availability of additional incentives (from federal, state, local entities)
- Different incentive options for low-income versus market rate customers
- How and to whom the incentive is offered (i.e. customer, contractor, builder, etc..)

The tables below outline estimated equipment costs for the following three scenarios:

- Gas equipment (Table 3-1)
- Inefficient electric equipment (Table 3-2)
- Efficient electric equipment (Table 3-3)

Equipment cost data was collected through the Regional Technical Forum, supplemented with web research. The costs shown are used to calculate the incremental cost for the customer to purchase efficient electric equipment as opposed to gas or inefficient electric equipment, which was used to help inform the suggested incentive amounts.

Table 3-1: Gas Baseline Equipment Costs

Gas Equipment	Cost
Gas Forced Air Furnace	$4,741
Central Air Conditioner	$2,559
Gas Water Heater	$1,140
Gas Stove	$1,699
Gas Dryer	$1,114
Total	**$11,253**

Table 3-2: Inefficient Electric Equipment Costs

Inefficient Electric Equipment	Cost
Electric FAF	$3,726

Central Air Conditioner	$2,559
Electric Water Heater	$590
Electric Stove	$660
Electric Dryer	$822
Total	**$8,357**

Table 3-3: Efficient Electric Equipment Costs

Electric Efficient Equipment	Cost
Air-source heat pump	$17,393
Heat Pump Water Heater	$6,039
Induction Stove	$1,589
Heat Pump Dryer	$1,435
Total	**$26,456**

The following subsections outline several incentive options the City of Bend could offer to support residential customers in adopting high-efficiency electric equipment.

Option 1: Direct Customer Incentives for High-Efficiency Electric Equipment

The first option is to provide direct incentives to City of Bend residents who purchase and install high-efficiency electric equipment. This option represents a new, custom City of Bend program that would be distinct and additional to other programs that exist in the Bend market. Consequently, this type of program would have the highest administrative cost, and is expected to range from 20-35% of the program budget. The City would be likely to outsource the administration of the program to a third party. This program would be the most flexible to customize to meet the City's unique policy goals, such as fuel-switching or which customer segments have access and/or priority in the program design.

As discussed previously, incremental cost is a key factor in determining appropriate incentive levels. Table 3-4 presents the proposed incentive amounts for each electrification measure, along with the associated incremental costs and the percentage of those costs covered by the incentive.

Table 3-4: Suggested City of Bend Incentive and Associated Incremental Cost

Equipment	Incentive	Incremental Cost*	% of Incremental Cost
Only City of Bend Incentives			
Heat Pump	$3,000	$10,601	28%

HP – low income	$3,750	$10,601	35%
HPWH	$2,000	$5,174	39%
HPWH – low income	$2,500	$5,174	48%
Appliances	$250	$877	29%

*Incremental cost in dollars is calculated as the average incremental cost for gas to high efficient electric conversion and low-efficient electric to high efficient electric conversion.

In addition to the incentives proposed by the City of Bend, residents may be eligible for financial assistance through existing state, local, and utility-sponsored programs. Table 3-5 illustrates the incremental cost and percentage of incremental cost covered when City of Bend incentives are combined with currently available incentives from the Energy Trust of Oregon. Additional funding opportunities may also be available through Bonneville Power Administration/Central Electric Cooperative, federal Home Energy Rebate programs, weatherization programs, or other local offerings; however, because incentive amounts for these programs remain uncertain, they are not included in this analysis

Table 3-5: Incremental Cost with City of Bend and Energy Trust of Oregon Incentives

Equipment	Incentive	Incremental Cost*	% of Incremental Cost
City of Bend + ETO Incentives			
Heat Pump	$4,000	$10,601	38%
HP – low income	$6,750	$10,601	64%
HPWH	$2,700	$5,174	52%
HPWH – low income	$3,200	$5,174	62%
Appliances	$250	$877	29%

*Incremental cost in dollars is calculated as the average incremental cost for gas to high efficient electric conversion and low-efficient electric to high efficient electric conversion.

Incentive Option 1 – with Whole Bundle Add-On

The City of Bend could also encourage comprehensive home electrification by offering a whole-home bundle incentive. Customers who install all eligible electrification measures would receive an incentive that is 20% higher than the combined incentives available for individual measures. Table 3-6 summarizes the proposed incentive amounts, incremental costs, and percentage of incremental costs covered under this approach.

Table 3-6: Whole Home Bundle Incentive Incremental Cost

Equipment	Incentive	Incremental Cost	% Incremental Cost
Whole Home Bundle	$6,300	$16,651	38%
Whole Home Bundle – low income	$7,800	$16,651	47%

Incentive Option 1 – with Solar Add-On

Another incentive that the City of Bend could offer is for residential rooftop solar. Table 3-7 outlines incentive options for rooftop solar along with the average cost for a 12 kW system, showing a payback of 15 years for market rate customers and seven years for low income residents.

Table 3-7: Residential Rooftop Solar Incentive and Payback

Equipment	City of Bend Incentive	Cost (12 kW system)	Payback
Solar	$2,000	$29,500	15
Solar – Low Income	$4,000	$29,500	7

Pacific Power, one of the utilities that serves City of Bend customers, offers an incentive for rooftop solar. Table 3-8 shows that the payback could be reduced by more than half if customers received the incentive in Table 3-7 above from the City of Bend and the current incentive from Pacific Power.

Table 3-8: Residential Rooftop Solar City of Bend + Pacific Power Incentive and Payback

Equipment	City of Bend + Pacific Power Incentive	Cost (12 kW system)	Payback
Solar	$4,500	$29,500	7
Solar – Low Income	$9,250	$29,500	3

Option 2 – Split Customer/Contractor Incentive for High-Efficiency Electric Equipment

Contractors and builders play a significant role in influencing customer equipment decisions, particularly when evaluating upgrades to more energy-efficient technologies. One approach to increasing the adoption of high-efficiency electric equipment is to split the incentive between the customer and the contractor or builder. By providing a financial incentive to both parties, this model encourages contractors and builders to actively promote electrification options. While this approach reduces the share of incremental costs covered directly for the customer, as shown in Table 3-9, its primary objective is to increase market adoption through contractor and builder engagement and recommendations.

As with Incentive Option 1, this program option represents a new, custom City of Bend program and would have the same corresponding opportunities, such as maximum customization and flexibility, and also its drawbacks, such as higher administrative cost.

Table 3-9: Split Incentive and Incremental Cost

Equipment	Split Incentive – 50% to customer, 50% to trade ally	Incremental Cost (customer only)	% of Incremental Cost (customer only)
Heat Pump	$1,500/$1,500	$10,601	14%
HP – low income	$1,875/$1,875	$10,601	18%
HPWH	$1,000/$1,000	$5,174	19%
HPWH – low income	$1,250/$1,250	$5,174	24%
Appliances	$250*	$877	15%

Option 2 could be offered with the whole-home bundle and solar incentive option add-ons as described in Option 1.

Option 3: Add Funding to Existing Incentive Programs

There are several programs already offered through utility or other community partners to incentivize and expand the installation of high-efficiency equipment in Bend, including but not limited to electric equipment such as heat pumps and heat pump water heaters. Option 3 is for the City of Bend to allocate funding from the Climate Pollution Fee to existing incentive providers, such as existing utility incentives or other programs run by community organizations. The utility incentive programs in Bend include:

- Energy Trust of Oregon, the incentive provider for Pacific Power, which offers a wide range of energy efficiency incentives covering heating and cooling solutions, water heater heating, kitchen appliances, washers and dryers, insulation, windows, and more. Additional funding from the Climate Pollution Fee could allow Energy Trust of Oregon to include a higher incentive for their existing program offerings within Bend City limits, or could be targeted to specific program areas, like increasing the funding for low-income programs. This may allow them to reach people who previously were not using the incentive programs, due to funding being insufficient to make a change to higher efficiency equipment.
- Central Electric Cooperative, a cooperative utility that serves a portion of Bend, and also offers a wide range of energy efficiency incentives in most of the same categories as the Energy Trust of Oregon. Like Energy Trust of Oregon, additional funding for Central

Electric Cooperative could allow them to offer a higher incentive amount through their existing programs to customers in Bend.

In addition to utility incentives, there are other community organizations that offer programs that provide financial assistance to complete energy efficiency and electrification upgrades in homes in Bend. The existing programs that the City is currently aware of include:

- Low-income weatherization program, administered by Neighbor Impact, Bend's local designated Community Action Agency. Their weatherization program offers whole-home energy efficiency, health, and safety improvements at no cost to eligible households in Deschutes, Crook, and Jefferson counties. Funding from the Climate Pollution Fee could allow Neighbor Impact to expand the number of households they reach or potentially expand the income threshold that is eligible for their programs.
- Home Energy Assessment Program, administered by the Environmental Center. This program is a partnership with the Energy Trust of Oregon to help ensure access to Energy Trust incentives to communities who have historically been less able to access Energy Trust's programs, such as low to moderate income households and people of color. This program completes free energy assessments for eligible homes and helps them access free or low-cost energy upgrades.

This may not be an exhaustive list of incentive programs offered in Bend, but includes programs that the City is aware of that are currently in operation. Additional programs may currently exist and new programs may launch after the writing of this memo, such as the federal Home Efficiency Rebates Program (HOMES) and the Home Electrification Rebates Program (HEAR), which are anticipated to launch statewide next year and be administered by local nonprofit organizations.

A primary benefit of funding an existing program would be to take advantage of the existing support services and infrastructure already in place to deliver the programs, which would consequently substantially reduce the administrative cost. The drawback of funding existing programs is that they would have significantly less customization and flexibility based around the City's unique policy goals. Funding an existing program would require that the City supports the existing parameters of the offered program.

PROGRAM OPTIONS: NON-INCENTIVE / COMMUNITY ASSET

While the City Council directed the Environment and Climate Committee specifically to identify ways to use the Climate Pollution Fee funding for incentives to further encourage electrification of buildings, several complementary initiatives arose from the Committee's early discussions that warrant further discussion, due to their support of and alignments with decarbonization through building electrification.

Option 4: Invest in Local Community Solar Project

The Oregon Community Solar Program allows electricity customers to subscribe to a shared solar project located within their utility's service area, enabling them to benefit from solar energy without installing panels on their own property. Subscribers receive credits on their utility bills based on the electricity generated by their share of the project. This provides solar access to utility customers who cannot install solar on their own homes, whether because they cannot afford the upfront cost of the panels, they do not own their home, or their house is not suited for solar. Community solar projects in Oregon are required to have at least a portion of their project dedicated to low-income subscribers, who receive a guaranteed 20% discount on their electricity bills. Subscribers who are not eligible for the low income discount are still generally expected to receive a 5% cost savings on their electricity after the utility bill credit.

Option 4 would be for the City to invest Climate Pollution Fee revenue into a community solar project. The City could potentially site a project on a solar-ready building at its Public Works Campus. Based on preliminary estimates, the City could site around a 700 kW system at this site, which could serve roughly 100-200 households for their full electricity load. Funding from the Climate Pollution Fund may allow the City to subsidize the project so that a greater percentage of the project could be allocated for low-income subscribers who will receive the guaranteed 20% discount. Further analysis needs to be completed to determine the final feasibility of this option, including financing options and the extent of subsidy needed to support various low-income allocation levels.

Option 5: Expand the City's Climate Action Partner Grant Program

The City has an existing Climate Action Partner Grant Program, initially launched in 2025, that provides competitive grants to nonprofits and government entities who run programs and initiatives that help implement the City's Community Climate Action Plan (CCAP). The grant program funds a wide range of initiatives that reduce greenhouse gas emissions and serve community members in various ways. For the last two years, the City provided a total of $150,000 per year in funding for these grants. Option 5 would be to expand the total amount of dollars disseminated each year through the grant pool, expanding the number and reach of projects funded.

In the previous two years, several of the projects funded through this grant program have directly supported the Climate Pollution Fee's policy goals around electrification, including the following projects:

- Bend-Redmond Habitat for Humanity: Climate Resilience Clean Air and Cooling Upgrades – a project that provided heat pump cooling system and healthy homes assessments to income-qualified households, ensuring safety during extreme heat and wildfire smoke, while boosting long-term energy efficiency. Following a successful first

year of the program, Habitat is currently seeking $2M in additional grant funds to expand this program dramatically.

- The Environmental Center: Electrification Access and Education Zero-Interest Loan Program – an initiative that helps low-to-moderate homeowners install energy-efficient heat pumps by combining a zero-interest loan program with targeted, multilingual outreach.
- Central Oregon Community College: POWER – a project that helps build capacity and readiness within Bend's residential construction and energy workforce by offering a stakeholder workshop and half-day technical training focused on energy auditing, HVAC, and heat pump installation.

While the City cannot guarantee what projects will apply for funds through the grant program, an expanded funding pool would allow projects like this to increase their reach and attract additional new projects. Projects funded through the grant program with Climate Pollution Fee dollars may have additional parameters related to greenhouse gas emission reductions to ensure that they are eligible. It may increase the complexity of the existing grant administration, but not to an unreasonable extent.

COMPARISON OF OPTIONS

As highlighted in Section 2, there are several stated objectives for how the City of Bend should utilize the revenue gained through the electrification fee. Table 12 presents the alignment of each objective with the three options outlined earlier (customer incentive, split incentive, non-incentive).

Table 5-1: Objectives Alignment with Incentive Options

Objective	Option 1 – Customer Incentive	Option 2 – Split Incentive	Option 3 – Expand existing programs	Option 4 – Non-Incentive, Community Solar	Option 5 - Expand City's Climate Action Partner Grant Program
Advance equity through program design	🙂	😐	🙂	🙂	😐
Coordinate with existing programs and funding	🙂	🙂	🙂	☹️	😐
Maximize community wide impact	😐	😐	😐	🙂	😐
Reduce energy burden while lowering emissions	🙂	😐	🙂	🙂	😐
Focus on existing homes while maintaining new construction support	🙂	🙂	🙂	☹️	😐
Consider non-rebate barriers to electrification	☹️	☹️	☹️	🙂	🙂
Ensure cost effectiveness and market feasibility	🙂	🙂	🙂	😐	☹️
Integrate solar and clean energy solutions	😐	😐	😐	🙂	😐

There are also pros and cons for consideration with each option, that often tie in the objectives identified for the use of the funds. Table 13 outlines some of the pros and cons that the City of Bend should consider when determining how to utilize the electrification fee funds.

Table 5-2: Pros and Cons of Program Options

Program Option	Pros	Cons
Option 1: New, Direct Customer Incentive	• Supports the mission of electrification in homes. • Incentives provided to all residential customers, giving more in the community the opportunity to benefit. • Maximum flexibility and customization	• Does not encourage contractors to promote electrification. • Due to upcoming code changes for new construction, is an incentive necessary for heat pumps? • Higher administrative costs
Option 2: New Split Customer/Contractor Incentive	• Provides an incentive for contractors/builders to promote electrification. • Supports transformation of the market to electrification measures. • Maximum flexibility and customization	• Lower $ amount goes to customers which could discourage implementation. • Contractors may not 'need' incentive to sell electrification in Bend. • Higher administrative costs
Option 3: Fund existing programs	• Leverages the infrastructure, support services, and recognition of existing programs • Should substantially reduce administrative costs	• Less flexibility and customization to meet the City's policy goals; must align with existing programs parameters
Option 4: Community Solar	• Provides environmental benefits to the broader community. • Provides financial benefit directly to subscribers due to electricity rate discounts • Advances clean energy supply, which is needed to maximize benefits of electrification	• Doesn't further support the mission to electrify homes.
Option 5: Expand the Climate Action Partner Grant Program	• Provides environmental benefits to the broader community through expansion of a wide variety of additional programs and services offered by nonprofit community	• Does not directly further support the mission to electrify homes, • May not receive grant applications that directly support policy goals of the Climate Pollution Fee • May complicate the existing Climate Action Partner Grant

	• Leverages an existing City-run program; no additional administrative costs • May allow a wider group of non profits to offer programs that encourage electrification in homes	Program with different parameters for funds that come from the Climate Pollution Fee

GREENHOUSE GAS EMISSIONS REDUCTIONS

The City of Bend's overall objective is to reduce the greenhouse gas emissions from natural gas appliances. As such, the reduction of metric tons of carbon (MTCO2) was estimated for each electrification measure for Program Options 1 and 2, the new direct incentive programs. The analysis includes annual MTCO2 reduction (reduction based on the generation mix the first year the equipment is installed) and lifetime MTCO2 reduction (reduction based on the generation mix over the lifetime of the equipment). The generation mix over the lifetime of the equipment will change as the generation sources for the serving utility(s) change. Lifetime MTCO2 reduction was therefore estimated in two ways over the life of the measure, as 'baseline' and 'improving grid' reductions. Baseline reduction (lifetime) is equal to the annual MTCO2 baseline reduction multiplied by the equipment life. Improving grid reduction (lifetime) assumes a reduction in MTCO2 emissions every five years based on Oregon HB 2021 Compliance. House Bil 2021[1] is an energy policy seeking to reduce emissions from electric generation facilities that serve customers in the state. It has set targets to reduce emissions associated with Oregon retail sales from a baseline, calculated as the average emissions reported from years 2010 to 2012 by 80% in 2030, 90% in 2035, and 100% by 2040. As such, the emission factors are reduced according to this policy, resulting in a larger reduction over the lifetime of the measure. Table 6-1 presents the annual and lifetime MTCO2 reduction for each equipment type[2].

Table 6-1: MTCO2 Reduction by Equipment

Equipment	Equipment Life	MTCO2 Baseline Reduction (annual)	MTCO2 Baseline Reduction (lifetime)	MTC02 Improving Grid Reductions (lifetime)
Heat Pump	18	-0.9	-16.3	-42.6
Heat Pump - LI	18	-0.9	-16.3	-42.6
HPWH	18	-0.1	-2.2	-8.8

[1] **Enrolled.pdf**

[2] EPA's current Greenhouse Gas Inventory and regulatory tables list the default CO_2 emission factor for complete combustion of pipeline natural gas as 53.06 kg CO_2 per MMBtu (≈ 117 lb CO_2/MMBtu), **ghg_emission_factors_hub.pdf**

HPWH - LI	18	-0.1	-2.2	-8.8
Appliances	10	-0.3	-3.3	-4.6
Whole Home Bundle	18	-1.4	-24.5	-60.6
Whole Home Bundle - LI	18	-1.4	-24.5	-60.6
Solar	25	-2.5	-62.5	-19.1
Solar - LI	25	-2.5	-62.5	-19.1

In order to assess the cost-effectiveness of the equipment incentives offered by the City of Bend, an assessment of the dollars per avoided MTCO2 ($/MTCO2) was calculated for each measure individually (Table 6-2). This avoided cost is equal to the additional cost of a mitigation measure divided by the amount of CO_2 equivalent emissions it prevents over the lifetime of the measure. As shown, the whole-home bundle delivers the largest reduction of the electrification measures (about 24.5 MTCO2 over its lifetime at baseline, rising to 60.6 with grid improvements), followed by the heat pump (16.3 rising to 42.6), while the heat pump water heater (2.2 rising to 8.8) and appliances (3.3 rising to 4.6) contribute far less. Solar avoids the most emissions at baseline (62.5 MTCO2), but its benefit falls to 19.1 as the grid becomes cleaner and has less carbon to displace. When looking at the measures from a cost-effectiveness perspective, solar is the lowest-cost option at baseline ($38 per MTCO2) and appliances ($65), heat pumps ($84), and the whole-home bundle ($125) among the lowest once grid improvements are included. Heat pump water heaters are the most expensive per avoided ton ($1,075 at baseline and $272 with grid improvements). Low-income incentives carry a higher cost per MTCO2 because of their larger incentive amounts.

Table 6-2: Avoided cost per MTCO2 per Equipment Types

Equipment	Incentive per unit + Admin Fee	MTCO2 Baseline Reduction (annual)	MTCO2 Baseline Reduction (lifetime)	MTC02 Improving Grid Reductions (lifetime)	$/MTCO2 Baseline	$/MTCO2 with Generation Reductions
Heat Pump	$3,600	-0.9	-16.3	-42.6	$221	$84
Heat Pump - LI	$4,500	-0.9	-16.3	-42.6	$277	$106
HPWH	$2,400	-0.1	-2.2	-8.8	$1,075	$272
HPWH - LI	$3,000	-0.1	-2.2	-8.8	$1,344	$339
Appliances	$300	-0.3	-3.3	-4.6	$90	$65
Whole Home Bundle	$7,560	-1.4	-24.5	-60.6	$308	$125

Whole Home Bundle - LI	$9,360	-1.4	-24.5	-60.6	$382	$155
Solar	$2,400	-2.5	-62.5	-19.1	$38	$125
Solar - LI	$4,800	-2.5	-62.5	-19.1	$77	$251

Table 6-3 presents a modeled program scenario with an estimated number of projects incentivized annually, the total customer incentive and the MTCO2 reduced each equipment type and for the program scenario as a whole. For this modeled program scenario of 260 projects, the total annual cost comes in at about $980,700 (including 20% administration) would avoid roughly 4,874 MTCO2 at baseline and 7,937 MTCO2 with grid improvements, equal to $201 and $124 per MTCO2, respectively (Table 6-4).

Table 6-3: Cost and Avoided MTCO2 for Program Scenario

Equipment	Number of Projects (Annually)	Total Customer Incentive (Annually)	MTCO2 Program Scenario (lifetime)	MTCO2 Program Scenario (improving grid)
Heat Pump	40	$120,000	-651	-1706
Heat Pump - LI	20	$75,000	-325	-853
HPWH	20	$40,000	-45	-177
HPWH - LI	5	$12,500	-11	-44
Appliances	75	$18,750	-251	-344
Whole Home Bundle	50	$315,000	-1226	-3028
Whole Home Bundle - LI	20	$156,000	-490	-1211
Solar	20	$40,000	-1250	-382
Solar - LI	10	$40,000	-625	-191
Admin Costs (20%)		$163,450		
Total	**260**	**$980,700**	**-4,874**	**-7,937**

Table 6-4: Program Scenario Avoided Cost of MTCO2

Total Customer Incentive (annually)	$817,250
Total Program Cost (customer incentive + 20% admin cost) (annually)	$980,700
Total MTCO2 reduced (baseline grid)	-4,874
Total MTCO2 reduced (improving grid)	-7,937

Program Year $/MTCO2 avoided (baseline)	$201
Program Year $/MTCO2 avoided (improving grid)	$124

SUMMARY

The City of Bend's proposed electrification fee is expected to generate roughly $960,000 per year at the illustrative fee levels, though revenue could range from about $260,000 to $1.25 million depending on how many homes electrify and on the April 2027 building code changes. The Environment and Climate Committee wants these funds to reduce emissions and energy costs, prioritize existing homes and underserved households, integrate solar, and coordinate with existing incentive programs. The memo outlines three incentive approaches: a new direct customer incentive (Option 1, with whole-home bundle and solar add-ons), a split customer/contractor incentive (Option 2), and added funding for existing utility and community programs (Option 3). Options 1 and 2 offer the most flexibility to meet City goals but carry the highest administrative costs, estimated at 20-35% of the program budget, while Option 3 would substantially lower administrative costs at the expense of customization. Two non-incentive options, a community solar project (about 700 kW, serving roughly 100-200 households) and an expanded Climate Action Partner Grant Program, offer broader community and clean energy benefits but do not directly advance home electrification. Further research on specific cost and benefit assumptions will be needed once the City narrows program options.