Oregon
Tina Kotek, Governor

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February 12, 2025

Senator Janeen Sollman, Chair
Senator David Brock Smith, Vice Chair
Senator Noah Robinson
Senate Committee on Energy and Environment
State Capitol
900 Court Street NE
Salem, OR 97301

RE: Follow-Up to Senator Robinson's Question Regarding Cost Savings and Residential Solar

Dear Chair Sollman, Vice Chair Brock Smith, Senator Robinson, and members of the committee.

We appreciated the opportunity to introduce SB 827, which would modify the existing Oregon Solar + Storage Rebate Program in order to offer a rebate for adding battery storage to existing solar systems. The program serves mostly residential customers, as well as also supporting sometimes larger projects for low-income service providers.

Senator Robinson wanted to know how much customers save on energy bills following an installation, as well as when those systems pay off after purchase. Because this answer depends on each installation, I asked to follow up with more information. The time it takes for a customer to break even on installing solar depends on several factors, including the incentives they receive, their utility rate, their energy usage, and the size of the system.

First, I want to share a couple of resources that I think will be of interest.

- How Much Money Can I Save With Solar Energy? | Department of Energy
- New Berkeley Lab Study Quantifies Rooftop Solar's Impact on Energy Burden
- Considering solar energy? It can yield real cost savings on your farm | Michigan State University (not related to ODOE's program or the bill but interesting!)

Second, I want to share some analysis that a colleague at ODOE has done based on current solar installation prices and utility rates.

In 2024, a typical residential PV system installation in Oregon was between 9.0 and 9.5 kilowatts in size and ranged in cost from $26,000 to $40,000. The higher cost systems tend to be for purchases that involve financing (about $4.60 per Watt) while direct purchased systems were lower cost (about $3.00 per Watt).

Below are some representative financial assumptions for a residential PV system purchased outright by a homeowner in 2025.

- System size: 9.3kWdc
- System Cost: $27,600 ($3.00 per Watt)
- Estimated Energy Trust of Oregon Incentive: $950-1100
- Estimated Federal Tax Credit: $7950-7995 (30% of net cost)
- Estimated Net Cost: $18,550-18,655 if full incentives and tax credit received (this does not include the Oregon Solar + Storage Rebate, which is currently out of funding)

To illustrate the payback rate for the system, we can imagine this system is in Grants Pass. Grants Pass is served by Pacific Power and the value of the energy produced per year would be $1358-$1765 based on an average electricity price of 13.58 cents per kilowatt hour. This is based on an estimated annual energy production of 10,000kWh to 13,000kWh per year depending on location, shading, and orientation of the solar array.

The estimated net cost of the above example system would be $18,550. If we used the estimated lowest amount of energy produced and predicted that it covered all, or part of, their electricity bill then the customer could expect to breakeven after 14 years. The US Department of Energy anticipates that solar panels will last 30-35 years, and most are under warranty for 25 years of use.

There are additional factors such as system maintenance costs and system lifespan that would need to be accounted for to calculate the total net benefits. According to the National Renewable Energy Laboratory (NREL), the average degradation rate for solar panels is around 0.5% per year – so they could be expected to provide 93% of the power they initially produced at the time that payoff is achieved. Also, solar inverters do not last as long as solar panels and would need to be replaced sooner.

Sincerely,

Christy Splitt, Government Relations Coordinator