

# Rooftop solar incentive to cost non-solar customers an estimated \$4.6 billion in 2022

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**Purpose:** In an ongoing effort to keep you informed about recent developments on California's Net Energy Metering (NEM) program, our recent analysis shows that the cost of the rooftop solar program increased from \$3.4 billion in 2021 to \$4.6 billion in 2022 for customers who do not have rooftop solar.

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## Summary

California's primary rooftop solar program will cost customers a record **\$4.6 billion** in 2022, according to a new Public Advocates Office analysis. The analysis found that customers without rooftop solar will pay an additional \$325 on their electricity bills to subsidize the NEM solar incentive. These costs were in large part driven by a significant increase in rooftop solar installations this year, causing overall costs to rise. Because of the need for a more sustainable and fair incentive, the California Public Utilities Commission (Commission) is expected to issue new rules as part of a reform process launched in 2020.

## Discussion

Rooftop solar is now a significant resource for California's grid. Installed on over 1.2 million homes, rooftop solar can power about 20 to 25% of the grid when running at peak output. NEM, an incentive that traces its roots back to the 1990s, is driving much of the growth by overcompensating rooftop solar owners for the electricity they generate by about five times its relative value to the grid. These costs are largely shouldered by ratepayers that do not benefit from the incentive. As annual rooftop solar growth has increased more than 30-fold since 2006 with minimal incentive structure changes, NEM's cost impact has also increased.

From 2021 to 2022, the Public Advocates Office estimates the cost shift from rooftop solar to non-participating customers increased from \$3.4 billion to \$4.6 billion. The main drivers include:

- **Record new rooftop solar installations.** The amount of rooftop solar installations added from January to August 2022 was higher than previously forecasted for the entire year.
- **Decreased rooftop solar value.** The value of electricity generated during daytime hours is decreasing as the energy market becomes increasingly saturated with rooftop solar production without batteries.
- **Higher overall rates.** Customers' electricity bills have continued to grow in order to fund state programs for wildfire prevention, transmission infrastructure, and other investment priorities. When rooftop solar owners offset a portion or the totality of their share of costs, customers without rooftop solar disproportionately pay more.

To date, the Commission has considered whether the current NEM incentive program is cost ineffective, regressive to low-income households, and discourages electrification by raising electricity rates. The Commission is in the process of reexamining the current rate structure to provide incentives for new rooftop solar installations. The Public Advocates Office expects the Commission to publish a new Proposed Decision in Rulemaking 20-08-020 soon.

## Methodology

To better understand how we came to the \$4.6 billion in NEM rates, we calculated the NEM cost burden to customers as follows:

The total cost burden is equal to the difference between the total amount that NEM customers are compensated for their solar generation and the total benefits their generation provides to the grid and its customers. To inform its policy recommendations, the Public Advocates Office routinely estimates historic and future cost burdens based on the latest rooftop solar deployment data, the Commission distributed energy resource valuation outputs, retail rate information, and a host of other factors. The following equation is a simplified representation of the cost burden calculation we used per year by customer class:

$$\text{Cost Burden}_{y,j} = PVkWh_{y,j} \times (\text{Retail Energy Rate}_j - \text{Avoided Cost})$$

*Where*

*y = year the cost burden is evaluated*

*j = customer class (e.g., residential, small commercial, medium, and large industrial, and agricultural)*

*PV kWh<sub>y,j</sub> = total annual solar production (kWh) in year “y” attributed to class “j”*

*Retail Energy Rate<sub>j</sub> = the average PV-weighted retail rate attributed to class “j” (\$/KWh).*

*Avoided cost = average avoided costs of PV generation (\$/kWh).*

## Conclusion

We provide this information to help you make well-informed decisions on how to reform the NEM program in a way that reduces electricity rates while addressing the inequities currently embedded in the program.

If you have any questions about the information provided here, or would like to discuss this matter further, please contact Justin Ong at [justin.ong@cpuc.ca.gov](mailto:justin.ong@cpuc.ca.gov).