Rooftop Solar Bill: Net Metering, Net Billing and Gross Metering

Monthly bill with rooftop solar under net metering, net billing or gross metering, from consumption, generation, self-use share and tariffs, with the saving.

Method: Tariff arithmetic for net metering; net billing and gross metering

Input parameters

Unit system: SI

Parameter	Value	Unit
Monthly consumption	600.00	kWh
Monthly solar generation	450.00	kWh
Share of generation used directly	40.000	%
Import tariff per kWh	8.0000	
Export (feed-in) rate per kWh	3.5000	
Fixed charges per month	100.00	
Scheme	Net metering (exports offset imports)	

Calculated results

Parameter	Value	Unit
Energy imported	420.00	kWh
Energy exported	270.00	kWh
Bill with solar	1,300.0	
Bill without solar	4,900.0	
Saving	3,600.0	

Notes for this case

• Solar used on site displaces imports at the full tariff. Under net metering, exported units offset imported units one for one (surplus at the end of the period is usually paid at a lower rate); under net billing, exports are credited only at the export rate, so self-use is worth more; under gross metering all generation is sold at the feed-in rate and all consumption bought at the tariff. Rules, banking periods and charges differ by utility and state.

Formula and method

$$E_{im} = E_c - f_s E_g, \quad E_{ex} = E_g(1 - f_s), \quad C_{net} = (E_{im} - E_{ex}) r_i + C_f$$

Variables

E_c	Monthly consumption	J
E_g	Monthly solar generation	J
f_s	Share of generation used directly	-
r_i	Import tariff per kWh	-
r_x	Export (feed-in) rate per kWh	-
C_f	Fixed charges per month	-
scheme	Scheme	-
E_{im}	Energy imported	J
E_{ex}	Energy exported	J
C	Bill with solar	-

C_0	Bill without solar	-
ΔC	Saving	-

Method and standards

Net metering.

Assumptions and limits

- Monthly settlement; flat tariff.

References

Tariff arithmetic for net metering, net billing and gross metering

Report details

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Release checks	4 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/electrical/solar-pv/solar-net-metering-bill

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.