Connecting a solar panel to your rooftop doesn’t necessarily mean you can run your power when the grid is down or put power back on the grid. For that you’ll need interconnection. Here’s how it works.

To get to your home, electricity travels on the grid from a centralized generator — like a natural gas power plant or a wind farm. But distributed generation technologies, like rooftop solar panels, have made it possible for that electricity to change directions, flowing from your roof onto the grid.

What you’ll need:
A generator, installed behind the meter. Behind the meter means at your house. Think rooftop solar panels or a home battery.

An inverter, which regulates the change in current from your solar panels. The inverter changes the current from direct to alternating, which is what home appliances use. It also synchronizes the current to fit the grid, adjusting output voltage to slightly higher than grid voltage to allow it to flow outwards from your home.

Who can help:
Solar installers might be qualified to integrate your new power source to your utility’s distribution grid, or, your utility’s grid may be fully equipped to integrate the solar. But it’s best to call your utility and find out. Contact your utility before you go solar or install a home battery.

Utility meter: if sending power back to the grid, this must be net metering or feed-in tariff enabled so power can be measured going in both directions.
A distributed generation system will alter electric load and the one-way flow of electricity. This presents potential risks to the safety of utility workers, performance of the grid and power quality for other customers. Therefore, the local utility must review and approve each proposed grid-connected distributed generation project.

Distribution feeder: circuit that links power lines and substation, important to ensure steady system voltage.
**As DG to grid becomes more common, some feeders may risk being overloaded by incoming power raising their voltage. Feeder peak loads should be monitored and adjusted by the utility.

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