



Pillar #3 of 4: Interconnection



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A solar system can't go in unless the rules for grid connection are fair and streamlined.

DESCRIPTION

It's simple. If you want to connect a solar panel to the grid, first you have to know the rules, aka the "interconnection procedure." But in too many places, this interconnection procedure is overly complex or expensive. Worse yet, in many areas it's not specified at all, meaning that installers don't know what they're getting into.

The first concern should be for the safety of the grid and the workers who service it. This has been thoroughly and repeatedly studied in numerous jurisdictions throughout the US, and a common set of principles has evolved to protect safety while still giving generators the certainty they need.



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The same way it's possible to write one set of rules for connecting a telephone, it's possible to write one set of rules for connecting small generators. More than 10,000 small solar systems in California, and 3,000 in New Jersey, have been connected with safe, simple, streamlined interconnection standards.

In fact, the relevant technical standards have been completely established in conservative engineering documents by bodies like UL and the IEEE.



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What remains is the process of interconnection – making sure that the fees, timelines, and penalties are fair to small generators. Without transparent principles, small generators can be kept off the grid with excessive studies, interminable timelines, or excessive fees.

Each of the rules below has been extensively reviewed by utility engineers, small generator advocates, and others in open public proceedings. Even the most complex "network" grids in large cities can be accommodated by these general rules. There is no more need to re-launch these negotiations in every state than there is to have different phone jacks in Maryland than you do in Missouri.

When developing these types of standards, there are certain key principles to keep in mind:

Keep fees fair – Bigger, more complex systems should pay bigger fees; small systems require almost no effort to connect and can be reviewed cheaply. In any case, the fees for applications, studies, and any necessary equipment must be carefully laid out in rules beforehand so that clean energy investors know the score.

Allow large systems for large loads – It makes sense for safety to keep clean generators matched to their loads. But a shopping mall can absorb a lot of solar power without the grid seeing one bit. Too many states arbitrarily limit the size of customer generators that can be used, no matter the load they serve. Systems of at least 2 megawatts in size should be permitted with appropriate loads.

Different rules for different sizes – A 1 kilowatt home solar system puts out as much power as a microwave oven takes in. A 1 megawatt solar system can power an entire Wal-Mart. The best interconnection standards "tier" applications so that each faces the right technical standards.

Specify timelines – An application that is not acted on for several weeks may as well have not been acted on at all.

Standardize and simplify forms – The smallest generators should even be able to make all necessary applications and agreements on one simple form.

OTHER REFERENCES:

For a detailed explanation of all the issues that go into a successful interconnection process (and how to avoid all the loopholes and pitfalls that can bring), visit:

IREC's guide "Connecting to the Grid" – a 68 page discussion of all the relevant issues.

DOE brief guide to overarching principles.