



An Extended Guide · No. 1553

# Utility Interconnection for a Ground System

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Your utility's approval to  
connect — and why it matters

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**! Read this first — two honest truths about ground-mount solar**

Two honest truths before we start, because they surprise a lot of good folks. First, a ground-mounted solar array is a professional job. It takes a licensed installer, real foundation work in your yard, building and electrical permits, and your utility's approval to connect (that approval is called interconnection). This guide is here to help you understand, plan for, and evaluate a ground mount; it is not a do-it-yourself project, and I never want you digging footings, wiring an array, or opening an electrical panel. Second, a plain grid-tied solar system — roof or ground, without a battery — shuts itself off during a power outage, even in bright sunshine. That is a required safety feature, so the system cannot put electricity onto the lines while the crews are repairing them. If keeping the lights on during an outage matters to you, you will need a battery, and we will talk about that plainly. Before your ground array can send power anywhere, your electric utility has to approve connecting it to the grid — an approval called interconnection, and a step all its own.

## Your utility's approval to connect

You can have a beautiful, permitted, fully built array in the yard and still not be allowed to switch it on. That's because connecting to the grid needs a separate yes from your electric utility. Let's make that plain.

I'm Bill, and I run Bill's Home Tech here in Portage County. This utility approval is called interconnection — a big word that just means 'permission to tie your system into the power grid.' Your installer usually handles the paperwork, but it helps to understand it, because it shapes when you can turn the system on and how you're credited for extra power.

I'll keep the numbers out of this, because rates, caps, and rules differ by utility and change over time. What I'll give you is the shape of the process, so nothing surprises you.

**★ Confused about the utility side?**

Interconnection and net metering leave a lot of good folks scratching their heads. Tell me who your utility is and I'll help you understand what to expect — with nothing to sell you. Call or text me at (330) 200-8042.

## Interconnection in 60 seconds

If you read just one page, read this one.

- ❑ Your utility must approve connecting your array to the grid.
- ❑ That approval is called interconnection — a separate step from permits.
- ❑ The utility usually swaps in a meter that reads power both ways.
- ❑ Net metering credits you for extra power — but terms vary by utility.
- ❑ A plain grid-tied system goes dark in an outage, unless you have a battery.
- ❑ You cannot legally switch on until the utility gives written approval.
- ❑ Terms and rules change — verify current ones with the utility and PUCO.

### ✓ Two approvals, remember

The building permit and the utility's interconnection are two different green lights from two different places. Both must be on before your solar goes live. Our permits guide covers the first.

## What 'interconnection' means, in plain words

It's a mouthful of a word for a simple idea. Let's unpack it.

Interconnection is your utility's formal approval to connect your solar array to their grid and run it alongside their power. Because your system would be feeding into the same wires that serve your neighbors, the utility needs to review it, agree to it, and set up the right meter — so everyone stays safe and the accounting is fair.

In practice it's an application, a review, an agreement you sign, and a meter change. It's routine for the utility, and your installer typically fills out the forms and shepherds it along. But it is its own process, separate from your building permits, and it has its own timeline.

### ✓ Think 'permission to plug into the grid'

Whenever you hear interconnection, just translate it in your head to 'permission to plug my system into the grid.' That's really all it is.

## Why the utility has to approve it

It can feel like a gatekeeper standing between you and your own sunshine. There are good reasons for it, though.

Your solar array doesn't just power your house — when it makes more than you're using, that extra flows back onto the grid. The utility has to make sure your system does that safely: that it won't harm their equipment, won't disturb the power quality on the lines, and above all won't put electricity onto wires that a repair crew believes are dead.

That last point is the big one, and it's worth understanding. When the grid goes down and crews go out to fix it, they need every connected system to shut off automatically, so no home is secretly back-feeding the lines they're touching. Interconnection is how the utility confirms your system behaves properly.

### ✓ It's about keeping line crews safe

The review isn't red tape for its own sake — a lot of it comes down to protecting the people who repair the power lines. That's a rule worth respecting.

## The application and the agreement

Here's the paperwork side, kept simple.

Your installer submits an interconnection application to the utility, describing your system — its size, its equipment, and how it connects. The utility reviews it to make sure everything meets their standards and the grid can accommodate it. When they're satisfied, you sign an interconnection agreement, which is the formal go-ahead to connect.

You don't need to master the forms; that's your installer's job. But do read the agreement before you sign, and ask about anything you don't understand. It's a real contract with your utility, and knowing its basic terms is just good sense.

### ✓ Read before you sign

The interconnection agreement is worth an unhurried read. If a term is unclear, ask your installer or the utility to explain it plainly before you put your name to it.

## The meter that reads both ways

One visible part of interconnection is a change to your electric meter. Here's what and why.

An ordinary meter only counts power coming into your house. With solar, power can also flow out to the grid when you're making extra, so the utility installs a meter that measures both directions. That two-way meter is what lets them credit you for what you send back, under whatever net-metering terms apply.

The utility handles this meter swap, usually near the end of the process. It's quick, and afterward your bill reflects both the power you draw and the power you contribute. You don't have to do anything but let them access the meter.

### ✓ Your meter becomes a two-way street

After the swap, your meter counts power both coming and going. That's the small piece of hardware that makes crediting your extra solar possible.

## Net metering, in plain English

This is the part everyone asks about: what happens to the extra power your panels make?

On a sunny day your array may make more than your house is using. Net metering is the arrangement where the utility credits you for that extra power you send to the grid, and you draw on those credits when your panels aren't keeping up — at night, or on a gray winter day. It's the mechanism that lets the grid act a bit like a bank for your solar.

The exact terms — how you're credited, at what value, and up to what limit — vary by utility and can change over time. I won't quote figures here, because a number that's right today could be wrong next year. The real terms come from your utility, in writing.

### ✓ The grid as a savings account

Picture net metering as banking your sunny-day surplus and spending it after dark. Whether and how well that works for you depends on your utility's current terms — always confirm them directly.

## Who has to offer net metering in Ohio

Here's a distinction that matters a great deal, and that catches rural folks off guard.

In Ohio, the big investor-owned utilities are required to offer net metering to residential customers, up to a certain size limit. But rural electric cooperatives and municipal (city or village) utilities are not required to. Many co-ops and towns offer some arrangement for solar customers, but the terms are theirs to set and can differ quite a bit.

So the honest answer to 'will I get net metering?' is: it depends entirely on who your utility is — and you must ask them directly. The Public Utilities Commission of Ohio, known as PUCO, oversees this area and is a good place to check the current rules, since they do change.

### **! Don't assume — verify with your utility and PUCO**

Never bank on net-metering terms you haven't confirmed. Investor-owned utilities must offer it; co-ops and municipals may not. Ask your utility in writing, and check current rules with PUCO, before you count on any credit.

## Two kinds of homes, two sets of needs

Who your electric provider is — a big investor-owned company or a rural co-op or town system — shapes your interconnection and net-metering picture more than almost anything else.

### If you live in town or the suburbs

In town or the suburbs, you're often served by a large investor-owned utility, which in Ohio must offer residential net metering up to a size limit. The process is well-worn, and your installer likely files it often.

- A big investor-owned utility generally must offer net metering.
- The interconnection process is familiar and routine for local installers.
- Confirm your size and terms, but the framework is usually clear.
- You still cannot switch on until their written approval arrives.

### If you are out in the country on a well

Out in the country, you may be served by a rural electric cooperative or a municipal utility, which are not required to offer net metering. Their terms vary, so you must ask directly — and remember the well pump only runs when the power's on.

- A co-op or municipal utility sets its own solar terms — ask them first.
- Net metering may look different, or work another way entirely.
- Verify current rules with the utility and with PUCO before you commit.
- In an outage, a plain grid-tied system stops — and so does your well.

#### ★ Not sure what your utility offers?

Co-op, municipal, or big investor-owned, the terms differ a lot. Tell me who serves you and I'll help you figure out what to ask — no charge to ask. Call (330) 200-8042.

## Why grid-tied solar goes dark in an outage

This is the fact that surprises people most, so I want to say it clearly and kindly.

A plain grid-tied solar system — one without a battery — shuts itself off during a power outage, even in bright sunshine. It is not broken. It's doing exactly what it must: a required safety feature, called anti-islanding, stops your system from putting electricity onto the lines while the utility's crews are out repairing them.

So if the grid goes down at noon on a sunny day, your panels go quiet along with it. Many folks assume solar means power during outages, and it's far better to learn otherwise now, from a guide, than in the dark during a storm.

### **! No battery means no power in an outage**

Without a battery, your grid-tied system shuts off the moment the grid does — to protect the line crews. If keeping the lights on during outages matters to you, you'll need a battery. Plan for that on purpose, not by surprise.

## What a battery changes

If going dark in an outage worries you, a battery is the answer — within honest limits.

A battery stores some of your solar power so that, when the grid drops, it can keep chosen circuits running — safely disconnected from the grid so it still protects the line crews. It's the one way a solar home stays powered through an outage. A battery is usually sized for your essentials, not your whole house at full tilt.

How big a battery you'd want depends on what you need to keep on and for how long — that's for your installer to size, not for me to guess. Our expanding-and-batteries guide digs into this, and if you're on a well, our well-pump guide covers keeping the water flowing when the power's out.

### ✓ A battery is sized for what matters most

You don't have to back up the whole house. Most folks cover the essentials — the fridge, some lights, the well pump. Let your installer size it to your real needs.

## Why you can't switch on until approved

The array can look completely finished and still not be cleared to run. Here's why that last wait matters.

Even after the panels are up and your building inspection has passed, you cannot legally or safely energize the system until the utility gives its interconnection approval. Switching on early means connecting to the grid without permission — which is unsafe for line crews, against the rules, and can jeopardize your agreement and any credits.

Your installer manages the sequence and will tell you the moment it's truly cleared. That final stretch of waiting on the utility is normal, and it's the last thing standing between you and flipping the switch for real.

### **! Wait for the written go-ahead**

Never let anyone energize the system before the utility's written approval is in hand. It's a firm safety line, not a formality — for you and for the crews who work on the lines.

## How long the utility side takes

As with permits, the honest answer is that it varies — so let me tell you what it hinges on.

The utility's review and approval run on their schedule, not yours. How long depends on the utility, how busy they are, how complete the application is, and when they can get out to swap the meter. Some move briskly; others take their time. It's a common reason the gap between 'built' and 'switched on' feels longer than expected.

None of that means anything is wrong. A good installer sets an honest expectation up front and keeps you posted as it moves along. Plan for some patience at the finish line and it won't rattle you.

### ✓ Ask for an honest range

A trustworthy installer will give you a realistic window for the utility's part — not a rosy promise. Steady and truthful beats fast and vague every time.

## The utility's inspection and final okay

Near the end, the utility does its own confirming before it lets your system connect.

Separate from your local building inspection, the utility may inspect or verify the connection and the meter on their side. Once they're satisfied that everything meets their standards, they issue the final approval — often called permission to operate — and swap in the two-way meter if they haven't already.

That approval is the true finish line. When it lands, your installer can commission the system and you can finally watch your meter run in your favor. Until then, the array simply waits.

### ✓ **Permission to operate is the real 'go'**

That final utility okay — permission to operate — is the moment your solar truly goes live. Everything before it, even a finished array, is still waiting on this.

## Two separate approvals, side by side

Let's set the building permit and the utility's interconnection next to each other, because folks mix them up constantly.

The building permit and inspection come from your local building department, and they're about building the array safely and legally on your land. Interconnection comes from your electric utility, and it's about connecting that array to the grid. Different offices, different reviews, different timelines — and you need both.

- Building permit: from your local building department; covers the build.
- Inspection: your local inspector confirms it's built to code.
- Interconnection: from your utility; covers connecting to the grid.
- Permission to operate: the utility's final okay to switch on.

### ✓ Our permits guide covers the other half

This guide is the utility side. For the building permits, zoning, and setbacks, see our permits-and-setbacks guide — the two together give you the whole approval picture.

## What your bill looks like afterward

Once you're connected and running, your electric bill starts to read a little differently. Here's the plain idea.

With the two-way meter in place, your bill reflects both the power you pull from the grid and the power your panels send back. On sunny stretches you may use very little from the utility; on dark ones you'll draw more. How the credits appear and carry depends on your utility's net-metering terms.

I won't predict what your bill will be — there are too many local variables, and I'd only be guessing. Your installer can walk you through how your particular utility credits and bills solar customers, using their actual current terms.

### ✓ Ask to see a sample solar bill

Have your installer or utility show you how a solar customer's bill is laid out where you live. Seeing the real format beats any guess I could make.

## Remember: the rules change

One steady truth about the utility side is that it doesn't hold still. That's worth keeping in mind.

Net-metering terms, size limits, and interconnection rules get revised over the years, by utilities and by regulators. A figure a neighbor quotes you from a few years back may no longer hold, and a rule you read online may be out of date. This is exactly why I keep numbers out of this guide.

The fix is simple: confirm the current terms with your utility, and check the current rules with PUCO, right when you're planning your system. Fresh, direct information beats secondhand or stale information every time.

### ✓ Verify fresh, every time

Whenever a term or credit matters to your decision, confirm it directly and recently. What was true a few years ago may have changed — so check as of now.

## From install to switched-on, step by step

To pull it together, here's the usual order on the utility side — so the finish line feels like a path, not a mystery.

- Your installer submits the interconnection application to the utility.
- The utility reviews your system and the connection.
- You sign the interconnection agreement.
- The utility swaps in a meter that reads power both ways.
- The utility gives permission to operate — and only then do you switch on.

Each step is normal and expected. Knowing the order ahead of time turns an anxious wait into a sequence you can follow and ask about with confidence.

## Questions to ask your installer and utility

Bring these to your installer, and be ready to put a couple to the utility directly.

### **Q: Does my utility offer net metering, and on what terms?**

Investor-owned utilities in Ohio must; co-ops and municipals may not. Get the current terms in writing from the utility — don't rely on hearsay or an old figure.

### **Q: Will you handle the interconnection application for me?**

A good installer files it and shepherds it through. Confirm they do, and ask for a realistic timeline for the utility's review and meter swap.

### **Q: What happens to my system in a power outage?**

Without a battery, it shuts off — that's anti-islanding, and it's normal. If outage backup matters to you, ask about adding a properly sized battery.

#### **✓ Get the utility terms in writing**

Anything that affects your decision — net-metering credit, size limits, timelines — should come from the utility in writing, not from a salesperson's memory.

## A few honest worries, eased

Here are the concerns I hear most about the utility side, and how to think about them.

### 'Why can't I just turn it on?'

Because connecting to the grid without approval is unsafe for line crews and against the rules. The wait for permission to operate is the last safety step, and your installer will tell you the moment it clears.

### 'What if my co-op doesn't do net metering?'

Then ask what they do offer — many have some arrangement. Solar can still make sense for lower bills and, with a battery, for outage backup. Just go in knowing the terms up front.

#### ✓ **Knowing the rules is half the battle**

The utility side feels daunting mainly because it's unfamiliar. Confirm your terms, lean on your installer for the paperwork, and it becomes a calm, orderly finish to the project.

## Common Questions

The questions folks ask me most about interconnection and net metering.

### **Q: What is interconnection, really?**

It's your utility's formal approval to connect your array to the grid, with an application, an agreement, and a meter change. It's separate from your building permit, and you need both before you can switch on.

### **Q: Will solar keep my lights on during an outage?**

Not by itself. A plain grid-tied system shuts off in an outage to protect line crews — that's anti-islanding. Only a battery keeps chosen circuits running when the grid is down.

### **Q: Am I guaranteed net metering?**

No. In Ohio, investor-owned utilities must offer it up to a size limit, but co-ops and municipal utilities aren't required to. Confirm your utility's current terms in writing, and check with PUCO — the rules change.

### **Q: Can I connect the system myself once it's built?**

No — and please don't. Connecting to the grid without the utility's approval is unsafe and against the rules. Your installer handles the interconnection and tells you when it's truly cleared to run.

### **★ Still puzzling over the utility side?**

Interconnection and net metering are exactly the kind of thing I love to make plain. Call or text me at (330) 200-8042 and I'll help you sort out what your utility offers — no charge to ask.

## You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made your utility's approval to connect a ground system feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

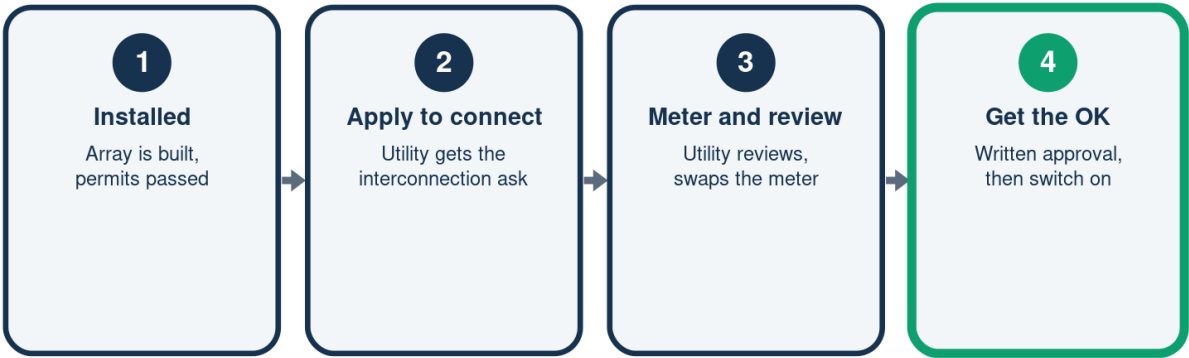
When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day, come-back-free guarantee. I don't sell solar and I don't do the licensed electrical work or the install itself — I help you understand it all, ask the right questions, and line up a trustworthy local solar installer, so you never feel talked into anything.

### ★ Bill's Home Tech — real help, close to home

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## From Install to Switched-On

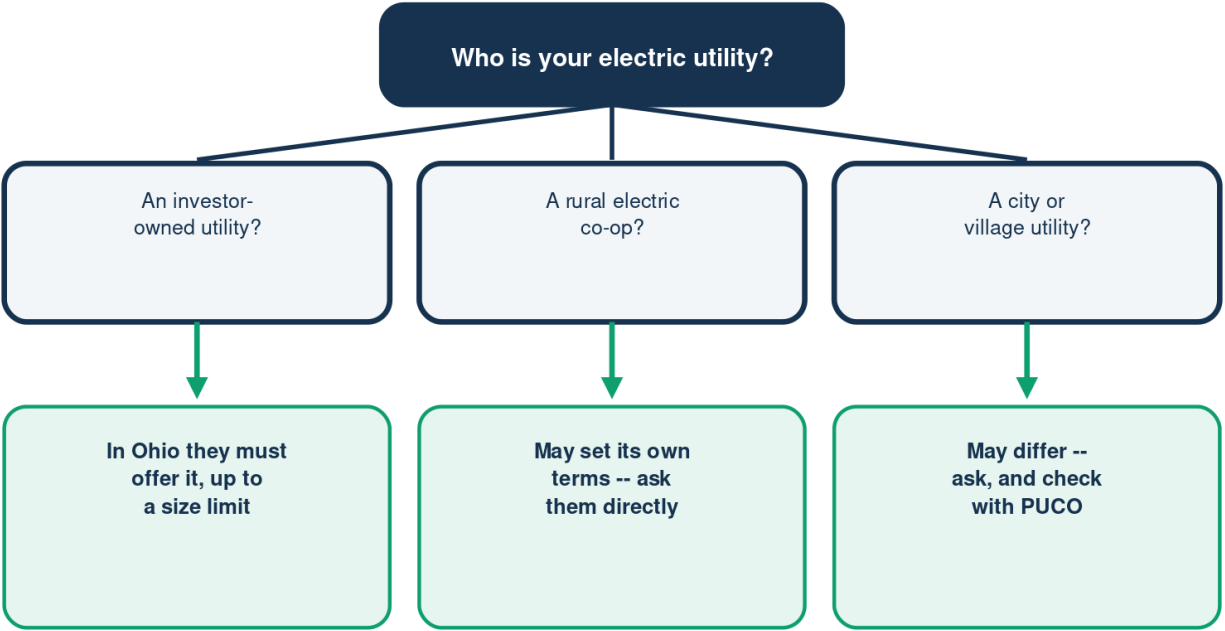
The utility side of the finish line



You cannot legally switch on until the utility gives written approval.

# Will I Get Net Metering?

It depends entirely on who serves you



Terms and caps change -- verify current rules with your utility and PUCO.

Illustration - a schematic, not to scale. Your setup may differ.

## In an Outage: Panels Alone vs Battery

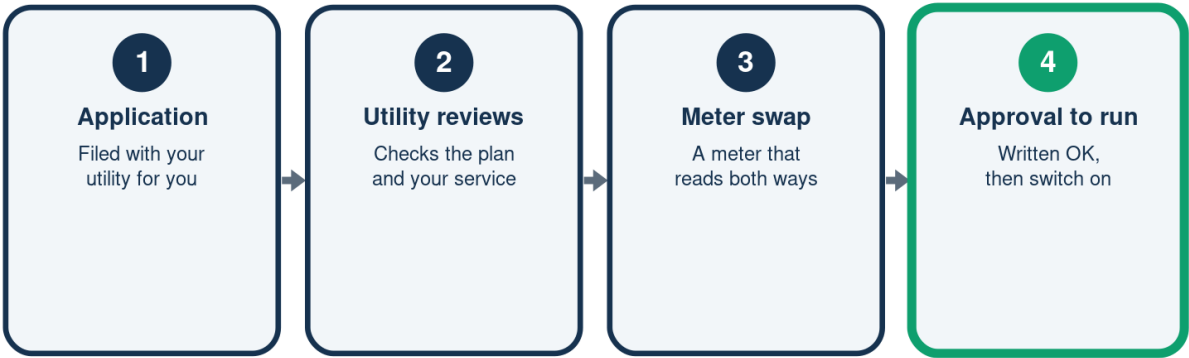
Why a plain grid-tied system goes dark

|                | Panels only    | With a battery   |
|----------------|----------------|------------------|
| Sunny day      | Powers house   | Powers house     |
| Grid is up     | All good       | All good         |
| Grid goes down | Shuts off      | Backup stays on  |
| Well pump      | Stops          | Can keep running |
| Reason         | Safety shutoff | Stored power     |

Without a battery, the system goes dark in an outage -- that is the law.

## Interconnection, Step by Step

The usual order on the utility side



Timelines vary by utility -- your installer usually handles the paperwork.



## Need a Real Person?

You do not have to remember all of it.  
You just have to remember you can call.  
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— Bill

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### Prefer help without a visit?

Bill can screen-share and fix many things remotely — a flat \$49, free for Support Plan members.



## A Note From Bill

### A quick note from Bill.

I write these guides to make home tech a little less frustrating, and I do my best to keep every step accurate and up to date. Still, every home, device, and setup is a bit different, so I can't promise a guide will match yours exactly or fix your particular problem. These guides are for general information only — they're not professional, legal, or financial advice, and they don't replace your device's own manual or the manufacturer's instructions. Please go slow, use your own good judgment, and use everything here at your own risk. If a step involves electrical wiring, a gas appliance, a water heater, plumbing, or climbing a ladder — or if anything just doesn't feel safe — please stop and call a licensed professional (or give me a call at 330-200-8042). Bill's Home Tech and Bill Davis can't be responsible for any damage, data loss, or injury that comes from using these guides. Thanks for reading, and stay safe out there.

— *Bill*



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