



An Extended Guide · No. 1512

Troubleshooting Low Solar Output

Is it a problem, or
just the weather?

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! Read this first — two honest truths about home solar

Two honest truths before we start, because they surprise a lot of good folks. First, home solar is a professional job — it takes a licensed installer, building permits, and your utility's approval to connect (called interconnection). This guide is here to help you understand, plan for, and live with solar; it is not a do-it-yourself project, and I never want you climbing on a roof or opening an electrical panel. Second, a plain grid-tied solar system — one 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. Most 'problems' folks worry about turn out to be normal weather — and the real fixes are done from the ground or by a pro, never up on the roof.

When your solar seems to be making less

Sooner or later you'll glance at your monitoring and think, 'that looks low — is something wrong?' Usually the answer is reassuring. This guide helps you tell a normal dip from a real problem, and shows you the safe, ground-level checks before you call for help.

I'm Bill, of Bill's Home Tech in Portage County. The great majority of solar worries are explained by the weather, the season, or a simple reporting hiccup. A few are real — and for those, we call a professional, not climb a ladder.

So we'll go in calm order: is it actually a problem, what can you safely check from the ground, and when to pick up the phone. No roof climbing, no opening equipment — ever.

★ Not sure if it's normal? Just ask

If your production has you puzzled, that's exactly the kind of thing to run by me. Often I can tell you in a minute whether it's just the weather or worth a service call. Call or text (330) 200-8042.

Troubleshooting, on one page

The calm order of things, in brief.

- ❑ First ask: is it just weather or the season? Usually, yes.
- ❑ Check your monitoring before anything else.
- ❑ A blank app is often lost internet, not lost power.
- ❑ Snow, shade, or soiling can lower output — often temporarily.
- ❑ You can safely check the weather, the app, and a tripped breaker.
- ❑ For anything more, call your installer — never climb or open equipment.

✓ Calm and from the ground

Nearly all troubleshooting happens in your chair with the app, or standing safely by your breaker panel. The roof and the wiring are never yours to investigate — that's what the pros are for.

First: is it actually a problem?

Before troubleshooting anything, ask whether there's really a problem at all. Most of the time, there isn't.

Solar production swings enormously with the weather and the season. A gray day makes far less than a sunny one; winter makes far less than summer; snow-covered panels make almost nothing until they clear. All of that is completely normal, as our Ohio-weather guide explains.

So a low number, on its own, usually isn't a fault — it's the sky. The way to spot a genuine problem is to compare like with like: this month to the same month last year, or a full year to your estimate, rather than reacting to a single slow day.

✓ Compare like with like

A cloudy January day isn't supposed to match a sunny July one. Judge production against a similar past period, and most 'problems' turn out to be perfectly normal weather.

Start with your monitoring

Your monitoring app or website is the first and best place to look — and often the only place you need to.

Your monitoring shows what the system is producing and, on many setups, how each panel or the inverter is doing. A look there tells you whether production really is off, whether the system is even reporting, and — with panel-level monitoring — whether one panel is lagging the rest.

This is troubleshooting you do from your chair, safely and easily. Before you worry, or call anyone, a calm look at the app answers most questions — and gives you the useful details to share if you do end up calling your installer. Our monitoring guide covers reading it.

✓ The app is your first stop, always

Whatever the worry, start with monitoring. It's safe, it's easy, and it usually either sets your mind at ease or points straight at what to tell a professional.

A reporting glitch, or a real drop?

One of the most common scares is the app showing nothing — which often means the messenger stumbled, not the system.

If your monitoring shows no data or a communication error, the usual cause is a lost internet connection: your home's wifi dropped, or the monitoring device lost its link. Your panels keep making power the whole time — only the reporting paused. That's a nuisance, not a power problem.

A real production drop, by contrast, shows up as the system reporting normally but making clearly less than it should on a decent day. Telling these apart saves needless alarm: a blank app usually means check your internet; a low-but-reporting app means look at the causes on the next pages.

✓ No data usually means no internet

A blank monitoring app most often points to a dropped connection, not dead panels. A router restart or a call to your installer usually restores the reporting — while your system was fine all along.

Snow, soiling, and other simple causes

If production really is down, some of the most common reasons are also the simplest — and often temporary.

Snow covering the panels stops production until it slides off, as it usually does with the sun. A heavy coat of pollen, farm dust, or bird droppings can dull the glass and trim output until the next rain or a gentle cleaning. None of these is a fault in the system — just something on the panels.

For snow, the answer is to wait (never climb). For soiling, rain usually handles it, or a gentle ground-level cleaning can help, as our maintenance guide describes. These simple causes explain a lot of temporary dips.

! Don't climb up to clear snow or clean

However tempting when production drops, never get on the roof to clear snow or clean panels. Snow slides off on its own; cleaning is done from the ground or by a pro. No dip in output is worth a fall.

Two kinds of homes, two sets of needs

The likely culprits behind a dip can differ a little between a town roof and a rural property.

If you live in town or the suburbs

In town or the suburbs, with roof panels, shade from growing trees or a neighbor's addition, plus the occasional soiling, are common causes — all checked from the app and the ground.

- Watch for shade creeping in from trees that have grown.
- A neighbor's new build or tree can newly shade part of the roof.
- Roof panels mean any hands-on check is a pro's job, not yours.
- Compare year over year to separate shade creep from weather.

If you are out in the country on a well

Out in the country, a ground array is easy to inspect from the grass, but watch for weeds or drifts shading the lower edge, farm dust, and — if a battery backs your well — its charge in winter.

- Check that grass, weeds, or snow aren't shading the lower panels.
- Farm and gravel-road dust may dull the glass in dry spells.
- A ground array lets you look closely from safe footing.
- In winter, note a battery refilling slowly on short, gray days.

★ Puzzled by a rural dip?

Ground arrays, weeds, dust, winter batteries — I'm glad to help you sort what's normal from what needs a pro. Tell me what your app shows and we'll figure it out. Call (330) 200-8042.

Shade that wasn't there before

A gradual, sneaky cause of falling production is shade that has crept in over the years.

Trees grow. A branch well clear of your panels when they went in can, seasons later, edge into their midday sun and quietly trim your output. Because it happens so slowly, it's easy to miss until a year-over-year comparison shows production slipping.

Panel-level monitoring, if you have it, makes this easy to spot — the newly shaded panels lag the rest. The fix is often simply trimming the offending tree (from the ground, or by an arborist for anything high), as our maintenance guide notes.

✓ Suspect a tree if the dip is gradual

A slow, year-over-year decline — rather than a sudden drop — often points to shade creeping in as trees grow. A look at what's grown near the array, and a trim, frequently restores it.

A tripped breaker or disconnect

Sometimes production stops because a breaker has tripped — one thing you may be able to check safely, with care.

Your system connects through breakers and disconnect switches. Occasionally one trips, cutting production. If you're comfortable at your breaker panel, you can look for a breaker labeled for the solar system and, if it's tripped, switch it firmly off and back on once — the same way you would any household breaker.

But go gently: if it trips again, or you're not sure which breaker is which, or anything feels off, stop and call your installer. Never force a breaker, and never open a disconnect box or the inverter itself — those are for professionals only.

! Reset a breaker once — then stop

Flipping a clearly labeled solar breaker back on once is a normal homeowner action. But if it trips again, leave it alone and call a pro — a breaker that keeps tripping is telling you something that needs expert eyes, not another flip.

The inverter's light or error

The inverter often shows its status with a light or a message. Reading it — not opening it — can tell you a lot.

Many inverters have an indicator light or a small display: green or steady usually means all is well, while a red light, blinking pattern, or error code signals a fault. Your monitoring app may show the same error. Note what it says — that's valuable information for your installer.

What you don't do is open the inverter or try to fix it. It handles real electricity and is strictly a professional's domain. Your job is to read the light or code, jot it down, and call it in. That simple observation often lets the installer diagnose the issue over the phone.

! Read the inverter — never open it

Looking at the inverter's status light or display is fine and helpful. Opening the inverter, or any electrical box, is not — there's dangerous voltage inside. Note the light or code and let a professional handle the rest.

When one panel lags the rest

If you have panel-level monitoring, you might spot a single panel underperforming. Here's what that usually means.

With microinverters or optimizers, your app can show each panel separately. If one lags the others, it may simply be shaded at certain hours, or soiled, or its small electronics may have faulted. A single quiet panel usually trims output only a little, so there's no emergency.

Note which panel and what the app shows, then mention it to your installer at a convenient time. It's the kind of thing that's covered by warranty and fixed on a routine service visit — not a reason to climb up or worry unduly.

✓ One lagging panel isn't an emergency

A single underperforming panel usually costs only a little production and can wait for a scheduled service call. Note it, report it, and let your installer sort it on their next visit.

Sometimes it's the grid, not you

Now and then, low or paused production traces back to the utility side, not your system.

Recall that grid-tied solar shuts off during a power outage, so if the grid is down, your production pauses by design — that's the anti-islanding safety feature, not a fault. Certain grid disturbances can also briefly trip a system offline, after which it restarts on its own.

So if your production stopped and you also notice a power outage or flickering, the grid is the likely reason, and things should return to normal when the utility does. Our outage guide explains why solar behaves this way.

✓ Check whether the grid is up

Before worrying about your system, notice whether your regular power is on. If the grid is out or was recently disturbed, a production pause is expected and self-correcting — not a problem to chase.

What you can safely check yourself

Here's the complete list of what's fair game for you — all of it safe, none of it on a roof or inside a box.

- ❑ The weather and season — is a dip just a gray or wintry stretch?
- ❑ Your monitoring app — is the system reporting, and how does output compare?
- ❑ Your internet — is a blank app really just a lost connection?
- ❑ Visible snow or obvious soiling on a ground array (from the ground).
- ❑ A clearly labeled solar breaker — reset once if you're comfortable.
- ❑ The inverter's status light or code — read it, note it, don't open it.

! That's the whole safe list

If your check isn't on this list, it isn't yours to do. Anything on the roof, inside the inverter or a disconnect, or involving tools on the wiring is a professional's job. Stay on the ground and out of the boxes.

When to call your installer

Knowing when to stop checking and pick up the phone keeps you safe and saves frustration.

Call your installer when: a breaker trips again after you reset it once; the inverter shows a persistent error or red light; production is clearly and lastingly low on good days with no weather or snow to explain it; a full year comes in well below estimate; or anything at all seems unsafe or uncertain.

There's no shame in calling — that's what they're there for, and much of it is under warranty. Describe what your monitoring shows and what the inverter light says, and they can often diagnose quickly. Our choosing-an-installer guide is about picking one who'll answer that call gladly.

✓ When uncertain, call — don't climb

The rule for anything beyond the safe list is simple: call a professional. Uncertainty is a reason to phone, never a reason to get on the roof or open equipment. A call is always the safe move.

What to have ready when you call

A few details make the call quick and often let the installer diagnose things without even coming out.

- What your monitoring shows — current output and how it compares.
- Whether the app is reporting at all, or blank.
- Any error code or light color on the inverter.
- Whether there's snow, obvious soiling, or new shade.
- Whether your regular power is on or there's been an outage.
- Roughly when you first noticed the change.

★ I can help you gather the details

If you'd like a hand pulling together what your system's telling you before you call the installer — or you'd rather I take a look first — just call me at (330) 200-8042. We'll sort out what's normal and what's worth a service visit.

Symptom, likely cause, and what to do

A quick reference for the most common worries.

Symptom	Often just	What to do
Low in winter	Season	Compare to last year
Blank app	Lost internet	Restart router / call
Snowed-under	Snow cover	Wait; never climb
Clear-day drop	Shade/soiling/fault	Check app; call
One panel low	Shade or fault	Note it; report it
All off + outage	Grid is down	Wait for power

Notice how many rows resolve to 'normal' or 'call a pro.' That's the shape of solar troubleshooting: mostly reassurance, occasionally a phone call — and never a ladder.

Seasonal false alarms

Some worries come around like clockwork with the calendar. Recognizing them saves needless concern.

Every autumn, as days shorten, production eases — and every winter it drops well below summer, with snow pausing it now and then. Folks new to solar often read this first winter as a malfunction. It isn't; it's the season, and it's already in your estimate.

By the same token, don't be over-cheered by a brilliant summer week. The honest measure, as always, is the full year compared to the estimate, or this year against last. Seasonal swings are the rhythm, not a red flag.

✓ The first winter isn't a breakdown

If your first winter's numbers look alarmingly low, take a breath — that's normal Ohio winter, not a fault. Come spring, production climbs right back. Judge by the year, and the seasonal scares fade.

Heading off problems before they start

A little easy, ground-level attention prevents most of the genuine dips.

- Glance at your monitoring monthly so you notice real changes early.
- Keep an eye on trees creeping toward the array, and trim as needed.
- Let rain clean the panels; arrange a gentle cleaning only if truly needed.
- Keep a ground array clear of weeds and drifts along its lower edge.
- Set up monitoring alerts so the system nudges you if it stops reporting.
- Keep your installer's number handy for anything beyond the safe list.

✓ Prevention is all low and easy

Notice, trim, tidy, and let rain do the rest — every preventive step is safe and simple, done from the ground. That gentle attention keeps genuine problems rare.

Questions to ask your installer

When you do call about performance, these help you and them get to the bottom of it.

Q: Is this production normal for the season, or is something off?

Your installer can compare your output to what's expected for the time of year and your system, quickly telling you whether it's weather or a real issue worth a visit.

Q: The inverter shows this light or code — what does it mean?

Reading them the exact light color or error code often lets them diagnose over the phone, or come prepared with the right part. It's the single most useful thing to report.

Q: Is this covered under warranty, and what's the next step?

Many performance issues — a faulty inverter or panel electronics — are covered. Confirm coverage and what happens next, so you know it's handled.

✓ Good installers welcome these calls

A trustworthy installer would far rather take a quick question than have you worry — or worse, climb up. Never hesitate to call; that responsiveness is part of what you paid for.

What not to do

The short, firm list of things to leave strictly alone.

- **Don't climb the roof** to inspect, clean, or clear snow — ever.
- **Don't open the inverter, a disconnect, or the battery** — dangerous voltage inside.
- **Don't keep resetting a breaker** that trips again — call a pro.
- **Don't ignore a burning smell, sparks, or visible damage** — treat that as urgent; call a pro or 911.
- **Don't panic at a normal seasonal dip** — compare to last year first.

! Burning smell, sparks, or damage? Stop and call

Low production is a phone-call issue. But a burning smell, sparks, or visible damage is different — keep away, don't touch anything, and call a professional right away, or 911 if there's any sign of fire. Safety before everything.

Common Questions

The questions I hear most when production looks off.

Q: My production dropped — how do I know if it's a real problem?

Start by comparing to a similar past period, not a sunny day. If it's winter, cloudy, or snowy, a dip is normal. A real issue looks like a clear, lasting drop on good days, or a full year well under estimate — then call your installer.

Q: The app shows nothing. Did my system break?

Usually not — a blank app most often means lost internet, while your panels keep working. Try a router restart, and if the reporting doesn't return, call your installer. Your production was likely fine all along.

Q: Can I fix a solar problem myself?

Only the safe, ground-level basics: checking the weather and app, restarting your router, or resetting a clearly labeled solar breaker once. Anything on the roof or inside the equipment is strictly for a licensed professional — never climb or open a box.

Q: The inverter has a red light. What should I do?

Note the exact light or error code and check your monitoring, then call your installer with those details — they can often diagnose it over the phone. Don't open the inverter; there's dangerous voltage inside.

★ Production got you puzzled?

Call or text me at (330) 200-8042 and tell me what your app and inverter show. Often I can tell you in a minute whether it's just the weather or worth a service call — with nothing to sell you.

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 troubleshooting low solar production 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.

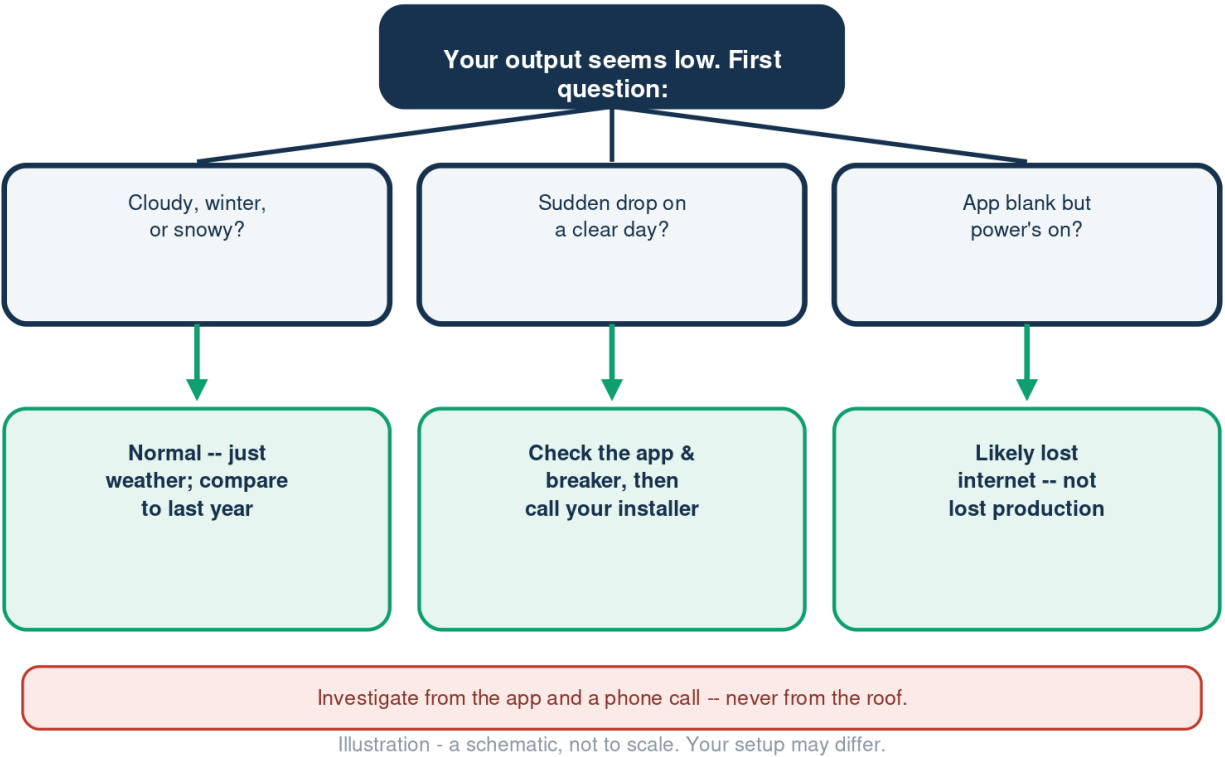
When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day,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

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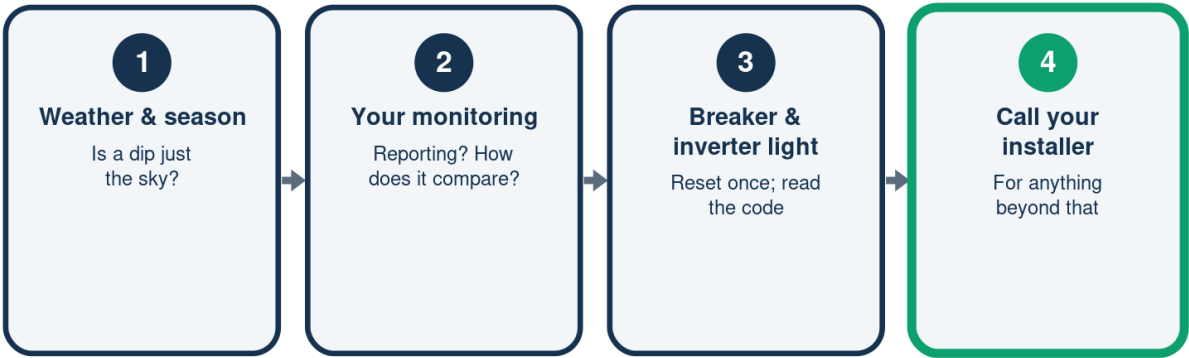
Production Looks Low -- What's Going On?

Most dips are normal; a few need a pro



Troubleshoot From the Ground

The calm order, all of it safe



Stay in your chair or by the panel -- never on the roof or in a box.

Symptom and Likely Cause

Most worries have a reassuring explanation

	Symptom	Often just
Low in winter	The season	Compare years
Blank app	Lost internet	Not lost power
Snowed under	Snow cover	Wait, don't climb
Clear-day drop	Shade/soiling/fault	Check & call

Most rows resolve to 'normal' or 'call a pro' -- never a ladder.

Safe to Check vs Call a Pro

Where your part ends and a professional's begins

	You can check	Call a pro for
Weather & app	Anytime	-
Router/internet	Restart it	-
Solar breaker	Reset once	If it trips again
Roof & inverter guts	-	Always a pro

Burning smell, sparks, or damage? Keep away and call right away.



Need a Real Person?

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A Note From Bill

A quick note from Bill.

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— *Bill*



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