



An Extended Guide · No. 1506

Solar, Batteries & Your Well Pump

Keeping the water flowing
when the power's out

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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. For a home on a well, that second truth isn't about comfort — it's about water. When the power stops, the pump stops, and so does your water.

Keeping the water flowing, honestly

If your home draws water from a private well, an electric pump pushes it to your taps. No power, no pump, no water — for drinking, cooking, flushing, or the animals. This guide is about what solar and batteries can, and can't, do about that.

I'm Bill, of Bill's Home Tech in Portage County, and I talk with a lot of rural families about exactly this worry. I'll be straight with you: solar helps, but only in the right setup, and a well pump is a demanding thing to back up. Let's get it right.

No invented numbers here — your pump's real needs come from the well company or the pump's own label, not a guess. What I'll give you is a clear understanding so you can plan water security with confidence.

★ Water security is worth planning carefully

Backing up a well is one of the most important things I help rural families think through. Tell me about your setup and we'll make a real plan for keeping the water on. Call or text me at (330) 200-8042.

Solar and your well, on one page

The honest essentials for a well home.

- ❑ When the power's out, your well pump stops — so does your water.
- ❑ Plain grid-tied solar shuts off in an outage; it won't run the pump.
- ❑ Only a battery (hybrid) or a generator can power the pump in an outage.
- ❑ A well pump is demanding — it needs a big jolt to start.
- ❑ That means the battery needs enough 'tap,' not just enough 'tank.'
- ❑ Store some drinking water no matter what — it's a cheap safety net.

✓ The one rule for well homes

Never assume solar on the roof means water in an outage. It only does with the right battery or a generator behind it. Plan for that — and keep some water stored either way.

The rural reality: no power, no water

Let's start with the plain fact that makes this guide matter so much more for country homes than town ones.

A private well uses an electric pump — usually deep in the well — to push water up to your pressure tank and out to your taps. It runs on electricity. When the power goes out, the pump goes silent, and once your pressure tank's small reserve is used up, the water stops.

That means no drinking water, no cooking, no flushing toilets, no water for livestock or a garden — until the power returns. In a short town outage on city water, none of this happens. On a rural well, it's the whole ballgame, and it's why backup can be a genuine necessity out here.

! Plan for water first

Of everything an outage takes from a well home, water is the one that turns an inconvenience into a real problem fast. Whatever else you do, have a plan for water — backup power, stored water, or both.

Why plain solar won't run your pump in an outage

This catches well owners by surprise, so let's be very clear about it.

You might reasonably think a sunny day plus a roof full of panels means your pump keeps running through an outage. It doesn't. A plain grid-tied system shuts itself off the instant the grid goes down — a required safety feature — so it can't run your pump or anything else, sun or no sun.

So if water security in an outage is your goal, plain grid-tied solar alone won't deliver it. You need a battery (a hybrid system) or a generator standing behind the pump. Our guide on why solar goes dark in an outage explains the safety reason in full.

! Sun on the panels doesn't mean water in the taps

Without a battery, your solar shuts off in an outage, and your pump stays dead even at high noon. If a salesperson implies solar alone keeps your water on, they're mistaken — press them on it.

Why a well pump is a demanding load

Backing up a well pump is harder than backing up a fridge, and it helps to understand why — in plain terms, no numbers needed.

Most home well pumps are 240-volt submersible pumps — the higher voltage kind, like a big appliance — and their motors need a large, brief jolt of power to get spinning, well beyond what they use once running. That starting surge is the challenge for any backup source.

A backup that can't deliver that surge will make the pump struggle, hum, or trip out — and undersized power can even harm the motor. So a well pump isn't just another item on the list; it's often the load that sets how much backup power you need.

✓ The surge is the deciding factor

When planning backup for a well, the pump's starting surge — not its steady running power — is usually what dictates the size of battery or generator you need. It's the same lesson our generator well-pump guide teaches.

Can a battery run the pump?

Yes — but only a battery with enough of the right kind of power. This is where the 'tank and tap' idea really matters.

Recall a battery has two numbers: energy (the tank — how long it lasts) and power (the tap — how much it delivers at once). A well pump needs a wide tap to handle its starting surge. A battery with a big tank but a narrow tap might run your lights all night yet stumble when the pump kicks on.

So backing up a well pump means sizing the battery for that surge, not just for hours of lights. It can absolutely be done, but it takes a deliberate design — which is why you don't want a battery sized by guesswork. Our adding-batteries guide covers the tank-and-tap idea in full.

✓ Tell your installer 'the pump must start'

Make it explicit that backing up the well pump is a goal. That one sentence tells the installer to size the battery's tap for the surge, not just its tank for runtime. It's the key to water in an outage.

Two kinds of homes, two sets of needs

This guide leans rural by its nature, but the town-versus-country contrast is exactly what makes the well question so important.

If you live in town or the suburbs

In town or the suburbs, your water comes from the city main under its own pressure, so it keeps flowing whether your power is on or off. An outage is about lights and the fridge, not water.

- City water doesn't depend on your electricity — one less worry.
- Backup power here is about comfort and food, not water security.
- You won't need to size backup around a demanding well pump.
- If you're on city water, this guide is mostly for understanding.

If you are out in the country on a well

Out in the country on a private well, water and power are joined at the hip. When the electricity stops, so does your water — which makes backing up the pump one of the most important decisions you'll make.

- No power means no water until it's restored — plan seriously for that.
- Size any battery to actually start the pump, not just run lights.
- A generator is a common, practical backstop for the pump in long outages.
- Keep stored drinking water regardless of your backup plan.

★ On a well? Let's make a water plan

Keeping your water flowing in an outage is worth getting right. Tell me about your well and pump and I'll help you plan backup that actually starts the pump. Call (330) 200-8042.

Pumps, soft starters, and easing the surge

There are ways to make a pump gentler on your backup power. Worth knowing, though the details are your installer's and well pro's domain.

Some pumps can be fitted with a 'soft starter' — a device that eases the motor up to speed rather than hitting it with a hard jolt, softening that big starting surge. Where it applies, it can let a smaller battery or generator handle a pump it otherwise couldn't.

Whether a soft starter suits your pump, and whether it's worth it, is a question for your installer and well company together. It's not something to rig up yourself. But it's a good thing to ask about if backing up the pump looks demanding.

✓ Ask if a soft starter would help

If your pump's surge is making backup expensive, ask your installer and well company whether a soft starter is an option for your pump. Sometimes it turns a hard problem into an easy one.

Battery or generator for the pump?

Both can run a well pump in an outage. Each has strengths, and many rural homes end up using both.

A battery is quiet, automatic, and fuel-free, and in a solar home it refills from the sun — but it holds a limited amount and must be sized to start the pump. A generator can run the pump as long as you have fuel and handles the surge readily, but it's noisy, needs starting and refueling, and (for gas types) makes exhaust that must stay well outdoors.

For frequent short outages, a battery keeps the water on effortlessly. For the rare multi-day outage, a generator is the dependable backstop. Together they cover both, which is why our generator guides and these solar guides are companions, not competitors.

✓ Battery for the common, generator for the rare

A battery handles the frequent brief outages quietly and automatically; a generator covers the once-in-a-while marathon. For a well home that can't be without water, the pair is hard to beat.

Know your pump's real needs

Any honest backup plan starts with your pump's actual requirements — and those come from a real source, not a guess.

Your well pump has a horsepower and electrical rating that determine how much backup power it needs, especially to start. You can find this from the pump's label, your well company's records, or by asking the company that services your well. I won't guess it for you — pumps vary too much, and a wrong number leads to a wrong-sized backup.

Bring that real information to your installer, and they can size a battery or recommend a generator that will actually start and run your pump. It's the same principle throughout these guides: real facts about your home beat rules of thumb every time.

★ Not sure of your pump's details?

If you're unsure of your pump's horsepower or rating, your well company can tell you — and I'm glad to help you gather what your installer will need. Call (330) 200-8042 and we'll track it down.

Store water: the cheapest backup of all

Before any battery or generator, there's a backup so simple and cheap that every well home should have it: stored water.

Keeping a few days' worth of drinking and cooking water on hand — in clean jugs or containers — costs almost nothing and covers you no matter what fails. Add some stored water for flushing (a few filled buckets or a rain barrel) and you've bought real peace of mind for pennies.

This doesn't replace backup power for the pump, but it's the sensible foundation under it. Even with a fine battery and a generator, stored water is your fallback if everything else has a bad day. It's the first thing I recommend to every well family.

✓ A simple rule of thumb for stored water

Aim for at least a few days of drinking water per person and pet, and rotate it now and then to keep it fresh. It's the easiest, cheapest resilience step you can take — do it whether or not you go solar.

Running the pump on a schedule

You don't have to power the pump every minute of an outage. Running it in bursts stretches your backup a long way.

A well pump only needs to run enough to refill your pressure tank and meet your use. In an outage, you can run it periodically — fill the tank, do your water tasks, then let it rest — rather than keeping everything flowing at once. This makes a modest battery or a fuel-conscious generator go much further.

Pairing this habit with a sensible must-run list — pump, fridge, a few lights — is how rural homes ride out outages gracefully on limited backup. It's less about brute power and more about using what you have wisely.

✓ Fill, use, rest

Think in cycles: run the pump to fill your tank and get your water, then let it rest while you use lights and the fridge. That rhythm stretches a battery or a tank of fuel remarkably far.

Animals, gardens, and the wider water picture

A country home's water needs often go beyond the kitchen tap, and an outage plan should account for all of it.

Livestock need daily water, gardens and greenhouses may too, and some rural systems rely on the pump for heating or other tasks. When you plan backup, add these to your must-run thinking — an outage that leaves animals without water is more than an inconvenience.

For larger needs, stored water in troughs or tanks, plus a backup that can run the pump periodically, is the usual answer. Think through your whole property's water use, not just the house, so nothing gets caught short.

✓ Count the animals in your plan

If you keep livestock, their water is not optional. Make sure your outage plan — backup power, stored water, or both — covers them as surely as it covers the household.

Layering solar, battery, and generator

The most water-secure rural homes stack a few simple layers so no single failure leaves them dry.

Picture it: solar makes power by day; a battery, sized to start the pump, handles frequent short outages quietly and refills from the sun; a generator stands ready for the rare multi-day event; and stored water backs up everything. Each layer is modest, but together they're sturdy against almost anything.

You needn't build it all at once. Even solar plus a properly sized battery is a big step up. Add the generator and stored water as your budget and peace of mind guide you. Our companion generator guides cover that layer.

★ Let's design your water-security layers

Solar, battery, generator, and stored water — for a well home, they work best planned together. I love helping rural families build that layered plan sensibly and affordably. Call (330) 200-8042.

Pressure tanks and cold-weather care

A couple of practical well details worth a mention, especially heading into an Ohio winter.

Your pressure tank holds a small reserve of water under pressure, which is why the taps still work for a little while after the power drops. It's not a big reservoir, though — it buys minutes, not days — so don't count on it as backup.

In winter, protect the pump, pressure tank, and any exposed pipes or well house from freezing, since a freeze-up can stop your water as surely as an outage. Keeping these areas above freezing is its own small resilience task, separate from backup power.

✓ Don't mistake the pressure tank for backup

That brief flow after the power cuts is just the pressure tank emptying — minutes of water, not a reserve. Real backup means powering the pump again or having water stored. Plan accordingly.

Keeping water flowing: your options

The ways to keep water on in an outage, side by side.

Option	Runs the pump?	Good to know
Grid-tied solar only	No	Shuts off in outage
Hybrid + battery	If sized to start it	Quiet, automatic
Generator	Yes, handles surge	Fuel, noise, upkeep
Battery + generator	Yes, best of both	Layered resilience
Stored water	N/A	Cheap, always works

Notice plain grid-tied solar is the one option that can't run your pump in an outage. For a well home, that's the key takeaway: to keep water on, you need a battery, a generator, or both — plus some stored water under it all.

Well backup in an Ohio winter

Our longest, hardest outages often come with winter storms — exactly when losing water is most miserable. A little extra planning pays off.

Winter storms can knock out rural power for days, and a solar battery recharges more slowly under short, cloudy days and any snow on the panels. That's precisely when a generator's steady, weather-proof power earns its keep as the deeper backup for your pump.

So for a well home, winter is the season that most argues for layering: a battery for the everyday, a generator for the long storm, and stored water as the sure thing. Our Ohio-sun-and-snow guide covers how solar behaves in winter.

✓ Winter is when layers matter most

Short, cloudy winter days mean a battery may refill slowly just when outages run long. That's the case for having a generator and stored water behind your battery, not instead of it.

Planning with your installer and well company

Backing up a well touches two trades — solar and wells — so the best plans bring both into the conversation.

Your solar installer sizes the battery or advises on a generator; your well company knows your pump's real needs and whether something like a soft starter fits. Getting them talking — even just sharing the pump's specs with the installer — leads to a backup that genuinely starts and runs your pump.

This is a place where a little coordination prevents a costly mistake. A battery sized without the pump's real surge in mind is a disappointment waiting to happen. Bring the facts together, and the plan comes out right.

★ I'll help the pieces talk to each other

Coordinating your well company and solar installer so the backup actually runs your pump is just the kind of thing I help with. Call (330) 200-8042 and I'll help you pull the facts together.

Questions to ask about well-pump backup

Put these to your installer (and well company) so your water plan is solid.

Q: Will this system actually start and run my well pump in an outage?

You need a clear yes, based on your pump's real surge — not a hopeful maybe. If it's a battery, it must have enough 'tap' to start the pump, not just enough 'tank' to run lights.

Q: Did you size the battery around my pump's starting surge?

The pump's surge, not its running power, usually sets the size. Confirm they accounted for it, using your pump's actual specs from the well company.

Q: Would a generator be a better or additional backup for my pump?

For long outages, a generator often is. A good installer will tell you honestly whether a battery alone suffices or whether pairing it with a generator is wiser for your home.

✓ Insist the pump can start, not just run

The whole game with well backup is the starting surge. Keep asking until you're satisfied the backup can actually start your pump — that's the difference between water and no water.

Common well-and-solar misconceptions

A few tidy corrections to the ideas that leave well owners caught out.

- **'Solar means I'll always have water.'** Only with a battery or generator behind the pump.
- **'A daytime outage is fine — the sun's out.'** Plain solar still shuts off; sun doesn't matter.
- **'Any battery can run my pump.'** It needs enough 'tap' for the pump's starting surge.
- **'The pressure tank is my backup.'** It buys minutes, not days.
- **'I don't need stored water if I have backup power.'** Store water anyway — it's the sure thing.

✓ When it comes to water, plan for the worst

Water is too important to leave to a single system. Assume any one backup could fail, and keep stored water underneath it all. That's not pessimism — it's good rural sense.

Common Questions

The questions I hear most from well owners about solar and backup.

Q: Will my solar keep my well pump running if the power goes out?

Not by itself. Plain grid-tied solar shuts off in an outage, so the pump stays dead even in full sun. Only a battery (hybrid) sized to start the pump, or a generator, can keep your water flowing.

Q: Why is a well pump so hard to back up?

Because it's usually a 240-volt pump whose motor needs a big jolt to start — far more than it uses while running. Your backup has to deliver that surge, which is why sizing it takes care.

Q: How big a battery do I need for my pump?

That depends on your pump's real specs, which come from the well company or the pump's label — not a guess. Bring those to your installer so the battery is sized to actually start and run your pump.

Q: Should I just get a generator for the well instead?

For long outages, a generator is a strong choice and handles the surge readily. Many well homes use both — a battery for frequent short outages, a generator for the rare long one — plus stored water under it all.

★ Worried about losing water?

It's one of the most important things to plan for out in the country, and I'm glad to help. Call or text me at (330) 200-8042 and we'll make a real, layered plan to keep your water on.

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 keeping your well water flowing with solar 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.

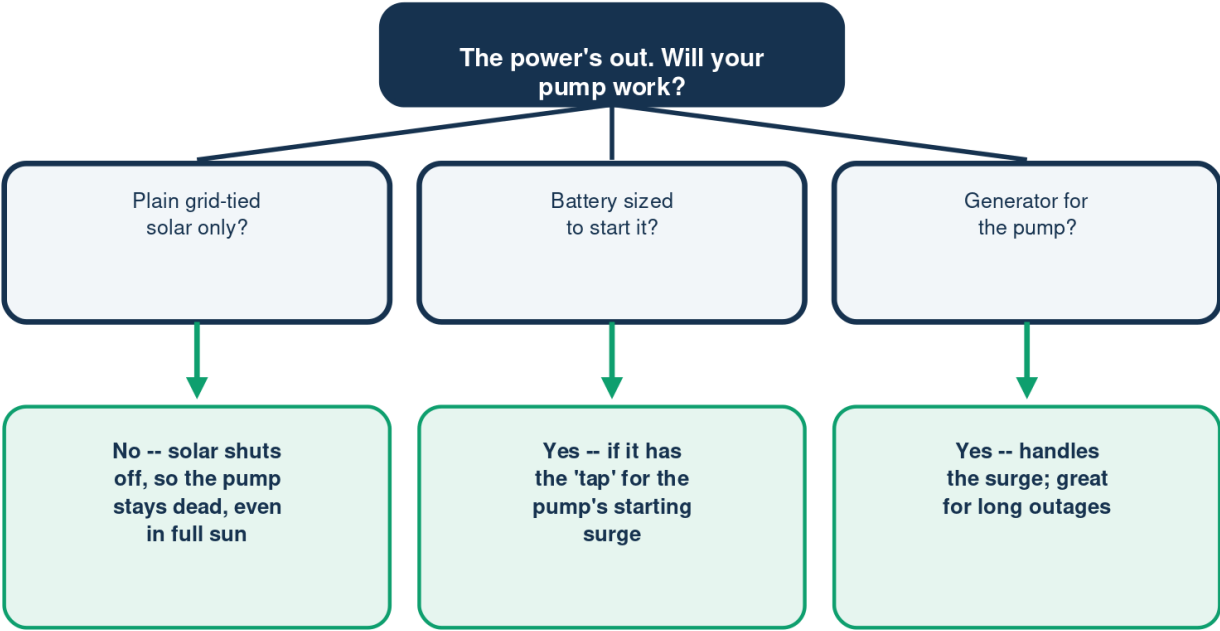
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★ Bill's Home Tech — real help, close to home

Call or text me at (330) 200-8042, or visit BillsHomeTech.com. Serving Atwater and all of Portage County. 30+ years of patient, plain-English tech help — and if you're ever not 100% happy with a visit, I'll make it right or refund it. That's a promise. — Bill

Will My Well Pump Run in an Outage?

For a well home, this is the question that matters



Store some drinking water no matter what -- it's the cheapest backup.

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

Keeping Water Flowing

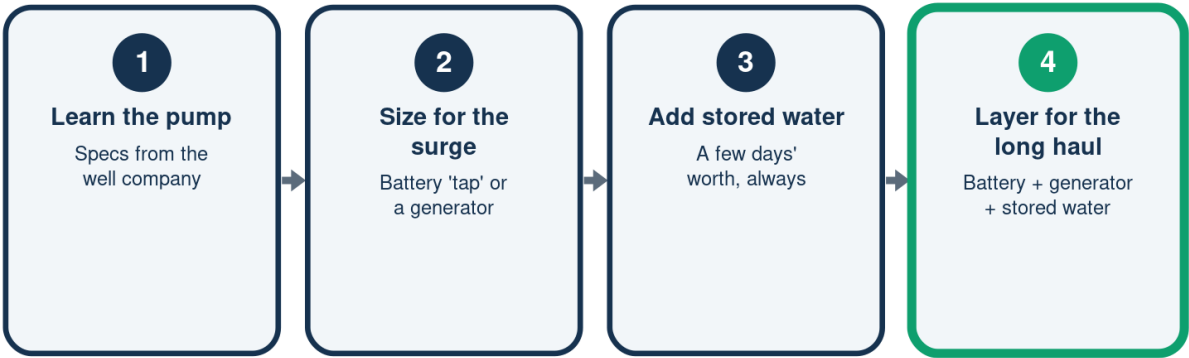
Your options for a well home in an outage

	Runs the pump?	Good to know
Grid-tied only	No	Shuts off
Hybrid + battery	If sized to start	Quiet, automatic
Generator	Yes	Fuel & upkeep
Stored water	N/A	Cheap, sure

Only plain grid-tied solar can't run your pump in an outage.

Backing Up a Well

The sensible order of operations



Real pump specs beat any guess -- get them before sizing backup.

Why the Pump Is Demanding

What makes a well pump hard to back up

	The challenge	What it means
240-volt motor	A big-appliance	load
Big startup surge	Needs a wide	'tap'
Runs on demand	Size for peaks	not averages
Undersizing	Can harm the	motor

The starting surge, not running power, usually sets the backup size.



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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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