BILL'S HOME TECH

Home & Small Business Tech Solutions

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Ground Solar and Your Well Pump

Keeping the water on when the power's off

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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. If your water comes from a well, this one matters: when the grid goes down, a plain grid-tied system shuts off and your pump stops with it — so we'll plan for that calmly.

Keeping the water on when the power's off

On a well, your water and your electricity are tied together in a way town folks never have to think about. So before you go solar, let's make sure your water is part of the plan — calmly, and well ahead of any storm.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio. In 30-plus years out here, I've seen how much a well owner depends on that pump, and how easy it is to forget it runs on electricity — right up until the power goes out.

This guide explains, in plain words, why a plain solar system won't run your well in an outage, what it takes to keep the water flowing, and how to plan for it without any fuss. The sizing and the wiring are the professionals' job; your job is to understand it and plan ahead.

★ On a well and thinking it through?

This is exactly the kind of planning I love to help with — calmly, before there's ever an emergency. Call or text me at (330) 200-8042 and we'll sort out your water together.

Solar and your well, on one page

If you read nothing else, read this. Here's the heart of it in a handful of plain points.

- ❑ Your well pump runs on electricity — no power means no water.
- ❑ A plain grid-tied solar system shuts off in an outage, roof or ground.
- ❑ So solar alone will NOT run your well when the grid is down.
- ❑ Only a properly sized battery keeps the pump running in an outage.
- ❑ Your installer and well company size that battery — never a guess.
- ❑ Store drinking and household water now, no matter what else you decide.
- ❑ In town? Municipal water keeps flowing, but your sump pump won't.

> **✔ Store water first, plan the battery next**
> The simplest step costs almost nothing: put some water by today. Then, if outage backup matters to you, plan a battery with the pros. One calm step at a time.

How your well actually gets water up

To plan for your water, it helps to picture how it reaches your tap in the first place. It's simpler than you might think.

Most home wells use a submersible pump — a pump that sits down in the well, underwater, and pushes water up to the house. It runs on electricity, and on many homes it's a 240-volt pump, on a heavier circuit like your dryer or range. When you open a tap, a pressure tank and switch call on the pump to keep the water flowing.

The key thing to understand is that no electricity means no pump, and no pump means no water — not for drinking, cooking, flushing, or the animals. Your well is quietly one of the most electricity-dependent things in your home.

> **✔ No power, no pump, no water**
> It's easy to forget the well runs on electricity, because it's out of sight. But when you plan for outages, your water deserves to be near the top of the list.

The hard truth: grid off, well off

Here's the single most important thing in this whole guide, and I want to say it plainly so there's no surprise later.

A plain grid-tied solar system — the common kind, with no battery — shuts itself off during a power outage. It does this on purpose, as a required safety feature, so it can't push electricity onto the lines while crews are working on them. That's true whether your panels are on the roof or on a ground mount in the yard.

So when the grid goes down, your solar goes quiet too — and your well pump stops right along with it. Bright sunshine overhead makes no difference. This catches good folks off guard, and on a well it's exactly the moment you most need water. Our interconnection guide explains the why in more detail.

> **! Solar alone will NOT run your well in an outage**
> This surprises almost everyone: a grid-tied system, roof or ground, goes dark when the power does — and the pump goes with it. Only a properly sized battery keeps water flowing. Plan for this.

Why solar alone can't run the pump

It seems backwards — you've got panels making power, so why can't they run the well when the grid's down? Here's the plain reason.

The feature that shuts solar off in an outage is there to protect the line crews. If your system kept pushing power out during a blackout, it could send electricity onto lines the utility believes are dead — a serious danger to the people repairing them. So by law and by design, a grid-tied system stands down the moment the grid does.

That's not a flaw; it's a safety must. But it does mean the panels by themselves can't be your backup. To use your own solar power during an outage, the system needs a battery and the right equipment to run safely on its own, separate from the grid.

> **✔ It's a safety feature, not a defect**
> Your solar shutting off in an outage keeps line workers safe. The answer isn't to defeat it — it's to add a battery, so you have a safe, separate source of power when the grid is down.

The starting surge, in plain terms

There's one more thing about well pumps that matters a great deal for backup, and it's worth understanding without any technical jargon.

A submersible well pump takes a big gulp of power at the instant it starts — a surge much larger than what it uses once it's running. Think of how a heavy motor lunges to life. Any backup meant to run your well has to handle that starting surge, not just the steadier draw afterward.

I won't put a number on that surge, and you should be wary of anyone who rattles one off without knowing your specific pump. The size of the surge depends on your pump, your well's depth, and your setup — which is exactly why the sizing is left to the professionals who know those details.

> **✔ It's the start-up that's demanding**
> A well pump's hardest moment is the split second it starts. That surge is why sizing a backup for a well is a job for people who know your pump — not a guess from a chart.

What a battery can do for you

The good news after all that: keeping your water on through an outage is absolutely doable. It just takes a battery, sized and set up correctly.

A home battery stores solar power so you can use it when the grid is down. Paired with the right equipment, it can run chosen essentials during an outage — and for many rural homes, the well pump is the very first essential on that list. When it's built to handle the pump's starting surge, it can keep the water flowing.

A battery does have to be sized thoughtfully, both to start the pump and to run it long enough for your needs. That's not something to eyeball. Our batteries guide covers how backup batteries work and what they can and can't do, in plain English.

> **✔ A battery is what turns solar into backup**
> Panels make power; a battery stores it for when you need it. If keeping the well on through outages matters to you, the battery is the piece that makes it possible.

Who sizes it: your installer and well company

The most honest answer to 'how big a battery do I need for my well' is that the right people have to size it for your specific setup.

Your solar installer and your well company are the ones who can do this properly. Between them, they know — or can find out — what your pump demands to start and run, how deep your well is, and how much backup you actually want. From that, they size the battery and the equipment so it works when you need it.

Please be cautious of anyone who quotes you a pump size or a battery size off the top of their head without those details. Getting this wrong means a backup that fails at the worst moment. It's worth doing right, with the people who know your water.

> **! Don't let anyone guess your pump's needs**
> The pump's demands depend on your well and your setup. A backup sized from a guess can leave you without water in an outage. Insist that your installer and well company size it together.

Two kinds of homes, two sets of needs

This guide leans rural, because a private well makes outage planning urgent. But town homes have their own version of the same lesson, so let's cover both.

If you live in town or the suburbs

In town or the suburbs, your water usually comes from the municipal system, which keeps flowing during a home power outage. Your outage worry is different — but for many, it's the sump pump in the basement.

- Municipal water generally keeps running when your power is out.
- But a basement sump pump stops — and basements can flood in a storm.
- The same lesson applies: grid-tied solar won't run it without a battery.
- A battery can back up a sump pump and other essentials just the same.

If you are out in the country on a well

Out in the country on a well, your water is entirely your own — and entirely dependent on electricity. When the power's out, so is the well, unless you've planned for it. This is the heart of the matter.

- Your well is your only water — no pump means no water at all.
- Store drinking water and have a plan before you ever need it.
- A properly sized battery can keep the pump running through an outage.
- Livestock and gardens need water too — factor them into your plan.

> **★ On a well and weighing your options?**
> This is exactly the kind of planning I love helping with — calmly, before there's ever an emergency. Call (330) 200-8042 and we'll think it through.

Store water, and keep a plan

Whatever else you decide about batteries, do this first, because it's simple, cheap, and it works: keep some water stored and a plan in mind.

- Keep drinking water on hand — enough for your household for several days.
- Store extra water for flushing, washing, and cooking, too.
- Don't forget water for pets and livestock if you have them.
- Know where you'd get more water if an outage stretched on.
- Rotate stored water now and then so it stays fresh.

None of this depends on solar, a battery, or anything technical. It's old-fashioned readiness, and it's the foundation everyone on a well should have — whether or not you ever add backup power. A battery is wonderful; stored water is essential.

> **✔ Stored water is the simplest insurance**
> Before any talk of batteries, put some water by. It costs almost nothing, it never fails, and it buys you calm no matter how long the power's out.

Water for animals and the homestead

If you've got livestock, a garden, or a working homestead, your water needs in an outage go well beyond the kitchen tap.

Animals need water every day, rain or shine, power or no power. A herd, a flock, or even a few backyard chickens can go through a surprising amount, and they can't wait out a long outage the way we can stretch a stored jug. That reality often pushes homesteaders toward real backup for the well, not just stored water.

When you plan your backup, count the whole place — the house, the barn, the animals, the garden. It helps your installer and well company size things to your actual life, not just a minimum. Our outbuildings guide covers tying the well-house into the picture.

> **✔ Count the whole homestead**
> Your animals and garden are part of your water plan. Tell your installer and well company about them, so the backup they size truly fits how your place runs.

A ground array handy to the well-house

Here's a spot where ground-mounted solar has a nice, practical edge for well owners.

Because a ground mount can go where you choose, it can sit reasonably near the well-house — keeping the solar, and any battery, handy to where the water equipment lives. That can make for a tidy, sensible layout, with shorter runs between the array, the battery, and the pump.

It doesn't change the basic truth — you still need a battery to run the pump in an outage — but it can make the whole setup neater. Our outbuildings guide goes deeper on siting an array near a well-house and running power between the buildings.

> **✔ Handy placement is a ground-mount perk**
> A ground array's freedom to sit near the well-house is a small but real convenience. It won't replace a battery, but it can make a well-backup setup tidier.

What 'essentials' backup really means

When folks add a battery, they usually back up essentials rather than the whole house. It's worth understanding what that means for your well.

A battery sized for essentials keeps the important things running in an outage — often the well pump, the refrigerator, some lights, and a few outlets — rather than every last thing in the house. That keeps the battery a sensible size and cost while covering what matters most. On a well, the pump is usually essential number one.

You get to help decide what counts as essential for your home. Be realistic and honest about it, and let your installer size the battery to that list. Trying to back up everything is expensive; backing up what you truly need is wise.

> **✔ Water usually tops the essentials list**
> For most well owners, the pump is the first thing on the essentials list — ahead of nearly everything else. Make sure it's front and center when you plan your backup.

Manual backups and old-fashioned options

A battery is the modern answer, but it's worth knowing the simpler, time-tested fallbacks too. Layers of readiness beat a single point of failure.

- Stored water — the simplest backup of all, and it never breaks down.
- A hand pump or a backup way to draw water, where your well allows it.
- A generator, if you have one — though it has its own fuel and safety needs.
- Knowing a neighbor, a spring, or a source you could reach in a long outage.

None of these replace a well-designed battery backup, but together they give you a cushion. Ask your well company what backup options suit your particular well — some setups allow a manual option, some don't.

> **✔ Layers beat a single fix**
> The calmest well owners have more than one way to get water: stored water, maybe a battery, maybe a manual option. You don't need all of them, but more than one is wise.

Town homes: municipal water and sump pumps

If you're in town on municipal water, this guide still has something for you — because you have your own version of the outage-and-water problem.

Municipal water usually keeps flowing when your home loses power, so your taps still work. But many town and suburban homes rely on a sump pump to keep the basement dry, and that pump stops the instant the power does — often during exactly the kind of storm that's flooding your yard.

The lesson is the same as for a well: a grid-tied solar system won't run that sump pump in an outage without a battery. If a wet basement is your worry, a properly sized battery can back up the sump pump and your other essentials just as it would a well pump.

> **✔ In town, watch the sump pump**
> Municipal water keeps flowing, but your sump pump doesn't run itself in a blackout. If flooding is a concern, treat the sump pump the way a well owner treats the well — back it up.

Keeping it safe — leave the wiring to pros

Backup power for a well touches heavy circuits and water both, so let me be clear about the safety side.

A well pump runs on a serious electrical circuit, and batteries and backup equipment involve their own high-power wiring. Connecting any of it — the pump, the battery, the transfer equipment that lets a system run safely off-grid — is licensed, professional work, full stop. This is never a weekend project, and never a place to improvise.

The same goes for any thought of running the pump off a generator: how that's wired in safely is a pro's job, done with proper transfer equipment so you never backfeed the grid. When water and electricity meet, the stakes are high. Let the professionals handle every connection.

> **! Never wire a well or a battery yourself**
> The pump, the battery, the backup equipment — all of it is high-power, licensed work. Doing it yourself risks electrocution, fire, and danger to line crews. Always use a licensed professional.

Winter, outages, and your water

Here in Ohio, the outages that knock out power often come in the worst weather — and that's when losing your water stings the most.

An ice storm or a heavy winter blow can take the grid down for a good while, right when you need water for drinking, cooking, and keeping warm. Frozen conditions also raise the stakes: without water moving and heat on, pipes can be at risk. A well that quits in a January outage is a genuine hardship, not just an inconvenience.

This is exactly why planning ahead matters. Stored water, a sensible battery backup for the pump, and a warm plan for the house turn a scary outage into a manageable one. It's far better to sort this out on a calm autumn afternoon than in the middle of a storm.

> **✔ Plan before the storm season**
> The time to sort out your water backup is a quiet day, not during an ice storm. If winter outages worry you, get your plan in place well before the cold sets in.

Planning your well backup

Here's the whole approach, laid out as calm steps you can take one at a time.

- ❑ Store drinking and household water now — don't wait on anything.
- ❑ Accept the key fact: grid-tied solar won't run the well in an outage.
- ❑ Decide how much water security you want during an outage.
- ❑ Have your installer and well company size a battery together.
- ❑ Make sure the design handles the pump's starting surge.
- ❑ List your true essentials — the pump almost always leads.
- ❑ Keep a simple fallback, like stored water or a manual option.

> **✔ One calm step at a time**
> You don't have to solve all of this at once. Store water today, learn the facts, then plan the battery with the pros. Each step leaves you better off than before.

In an outage: no battery vs a battery

Here's the whole difference on one page, so it's crystal clear what a battery changes.

	No battery	Properly sized battery
Solar in an outage	Shuts off	Runs your essentials
Well pump	Stops — no water	Keeps running
Drinking, cooking	Stored water only	Water on tap
Animals, garden	Hauled water	Water available
Sump pump (town)	Stops	Keeps running

The panels are the same in both columns. The battery is the piece that turns 'no water until the power's back' into 'the pump keeps running.' For a well owner, that's the whole ballgame.

Questions to ask — installer and well company

Bring these to both your solar installer and your well company, because keeping your water on is a team effort.

Q: Will this solar system run my well pump during a power outage?
For a plain grid-tied system, the honest answer is no — it shuts off in an outage. If you want water during outages, ask specifically about adding a properly sized battery.

Q: Can you size a battery to start and run my specific well pump?
You want your installer and well company to size it together, accounting for the pump's starting surge and how long you'd want to run it. Beware anyone who guesses without the details.

Q: What backup options suit my particular well?
Ask your well company whether your setup allows a manual or other fallback, and what they'd recommend. Some wells allow options that others don't.

> **✔ Get the two teams talking**
> The best well-backup plans come from your solar installer and your well company working together. Don't be shy about asking them to coordinate — it's your water on the line.

Common Questions

The questions I hear most about solar, batteries, and keeping the water on.

Q: If I have solar, will I still lose water in a power outage?
With a plain grid-tied system, yes — it shuts off in an outage and the pump stops. Only a properly sized battery keeps the well running when the grid is down.

Q: How big a battery do I need to run my well?
That has to be sized for your specific pump and well by your installer and well company, accounting for the starting surge. Please don't trust a number quoted without those details.

Q: What should I do first, before I decide on a battery?
Store water. It's simple, cheap, and it never fails. Everyone on a well should have drinking and household water put by, whether or not they ever add backup power.

Q: I'm in town on city water — does any of this apply to me?
The water lesson is milder, since municipal water keeps flowing. But if you rely on a sump pump, it stops in an outage too — and a battery can back it up just like a well pump.

> **★ Want help planning your water security?**
> Keeping the water on is one of the most reassuring things to plan, and I'm glad to help you think it through and coordinate the right pros — with nothing to sell you. Call or text me at (330) 200-8042.

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 on when the power is off 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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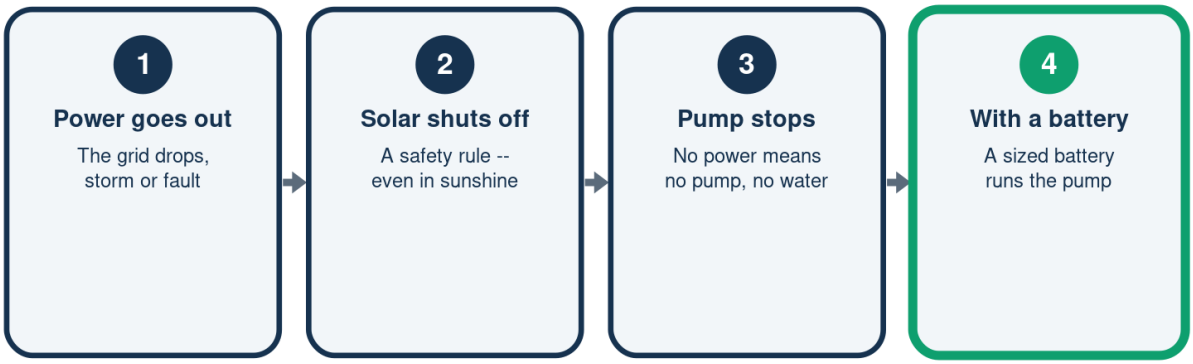
When the Grid Goes Down

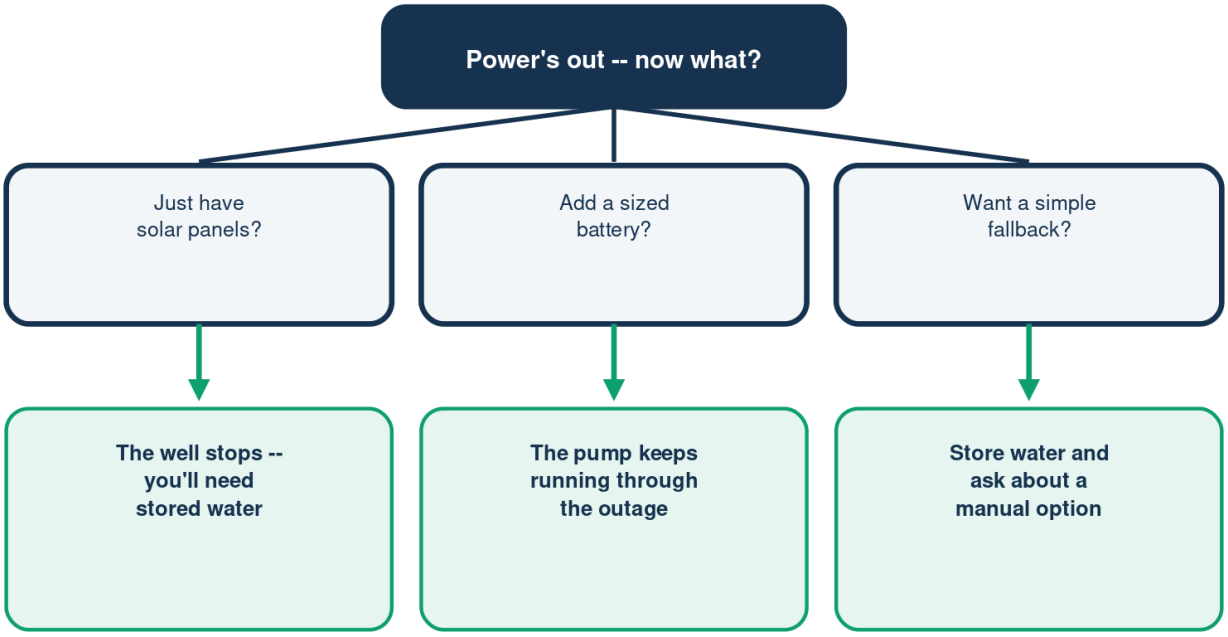
Why a plain grid-tied system leaves the well dry



Panels alone go dark in an outage -- only a battery keeps water flowing.

How Do I Keep Water On?

Your choices for water when the power's out



Sizing the battery for your pump is a job for your installer and well company.

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

No Battery vs a Battery

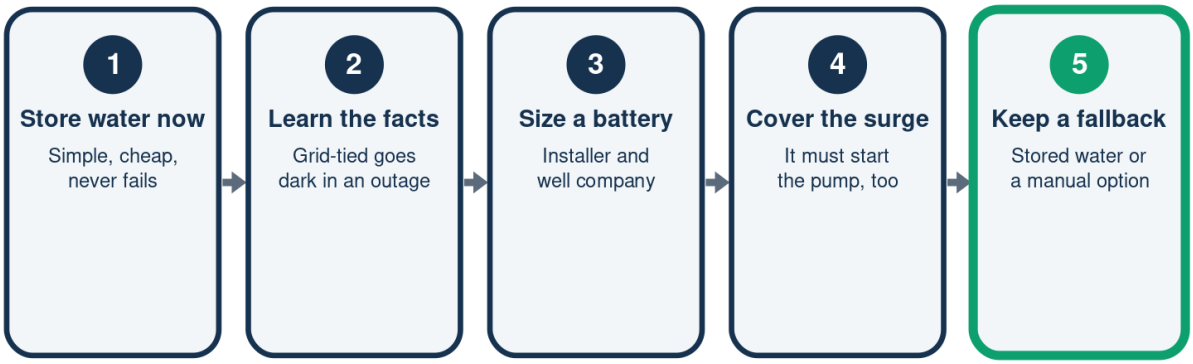
What each means when the power goes out

	No battery	Sized battery
Solar	Shuts off	Runs essentials
Well pump	Stops	Keeps running
Drinking water	Stored only	On tap
Animals	Haul water	Water on
Sump (town)	Stops	Keeps running

Same panels either way -- the battery is what runs the pump in an outage.

Planning Your Well Backup

Calm steps to keep the water on



One step at a time -- each one leaves you better prepared.

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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.

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