



Emergency solar power 101

Are you prepared for the next blackout?

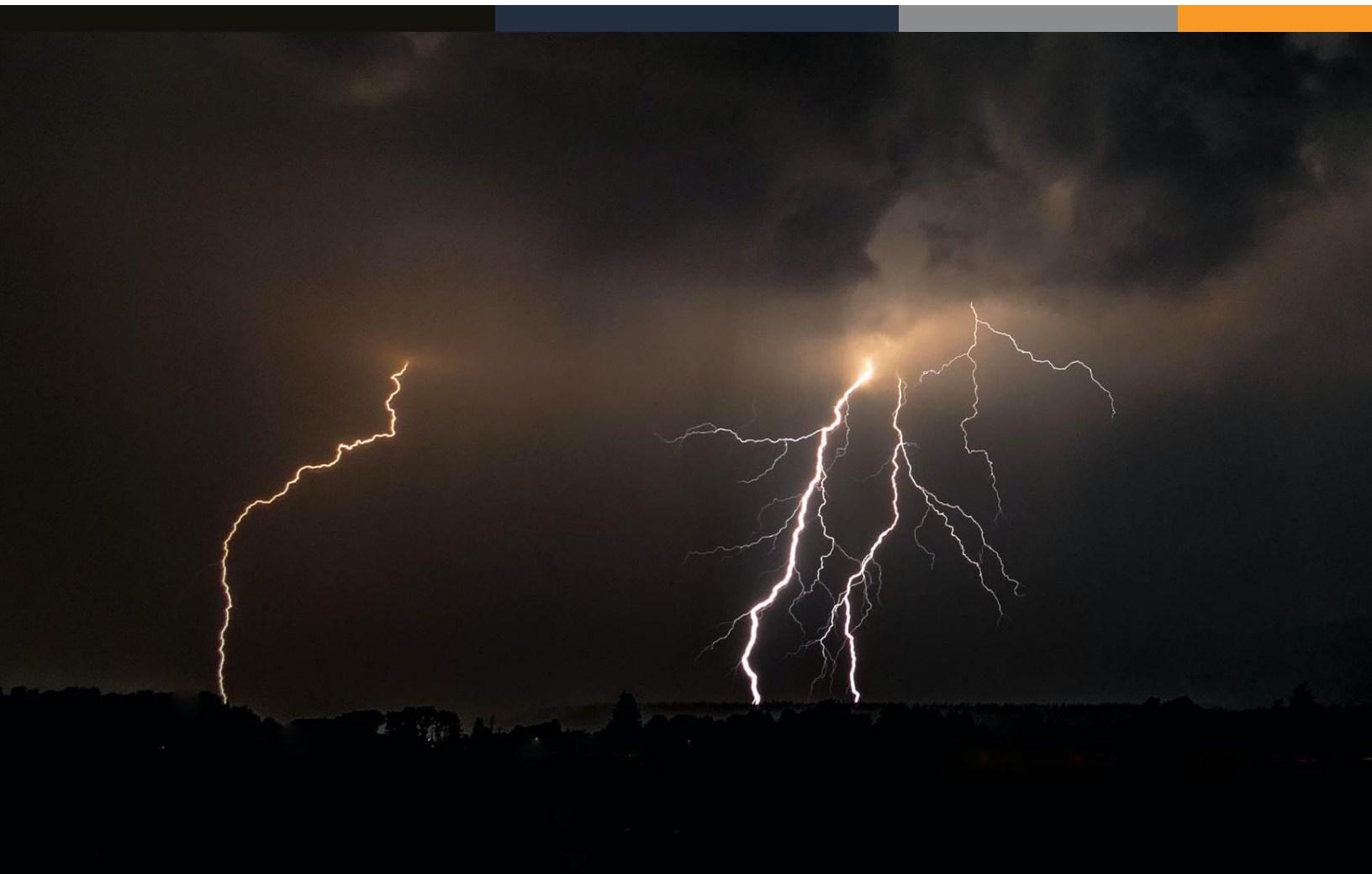
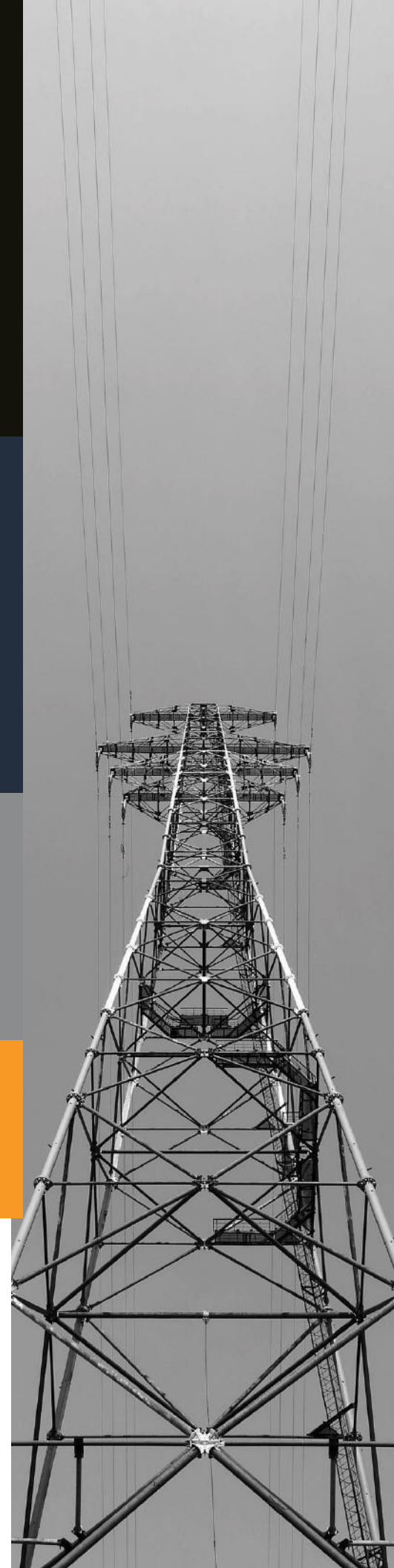


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Be prepared

When you think about it, we've got it pretty good.

We live in the most advanced civilization the world has ever seen, with technological marvels that would have boggled our ancestors. Why, we even have a web of wires strung across the globe bringing electrical power to miraculous devices that bring us light, heat, refrigeration, communication, and host of other things our modern life depends upon.

But all is not quite what it seems. When it comes right down to it, our electricity supply is precarious. If you think that we are experiencing more blackouts and brownouts than we used to, you're not wrong.

Tornadoes. Floods. Hurricanes. Wildfires. Tropical storms. Blizzards. High winds. Thunderstorms. Weather can be brutal, causing blackouts that can last from hours to days. With climate change, these emergencies happen more and more frequently, with greater intensity, and in places where these things haven't happened before.

You can also add in accidents, human error, and even acts of vandalism as more threats to the system. Any one of these incidents can damage the grid causing blackouts.

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It's not your imagination

There really have been more blackouts recently than before.

A whopping
64% rise in
blackouts
in the past decade, to be exact.

Then there's the uncertainty of the power grid itself. It's old, and old things break. Its very structure is delicate too; a serious breakdown in one area can cascade across vast regions causing catastrophic outages to millions of people.

The power grid may have been sufficient 50 years ago, but now it's way overtaxed by a growing population and increased electricity demands that strain it to its limits, and sometimes beyond.

To compensate for the weak grid utilities often implement brownouts where the power voltage is reduced in areas to prevent full-blown blackouts, but as the power fluctuates it plays havoc on connected devices.

Utilities also plan rolling blackouts in an attempt to quell some of the strain on the system, but a blackout is still a blackout: whether planned or not, it still means there's no power.

A lot of people see this as a sign of something worse to come, a total collapse of the system leaving everyone powerless for an indefinite period of time.

No wonder so many people feel so...**powerless**.



Types of power emergencies

Not all power outages are equal. Where you live has everything to do with what can cause an outage, along with when it's most likely to happen and for how long it's possible to last. When thinking about an emergency backup power system you need to know what kinds of power emergencies you want to prepare for because it will greatly impact the type of backup system you want to go with.

Brownouts: brief, intermittent partial-outages

Brownouts are the simplest, least impactful type of outage, but they can also be the most frustrating at times. A brownout is when there's a reduction in the flow of power but not a complete disruption. It's then the lights dim for no apparent reason and delicate electronics like TVs or computers might suddenly turn off.

Brownouts occur when there's too much demand for power and the grid can't supply it all. To handle it, there's a drop in the voltage provided across the affected area. It doesn't usually last that long, anywhere from minutes to hours, and it happens so that people don't have to experience a full-on blackout. Consider it the lesser of two evils.

Brownouts are not accidental but are intentional; the utility chooses to cause a brownout until demand drops enough for the grid to function normally. The most common time for them to happen is during the blazing summer heat when a lot of power-hungry air conditioners are slurping too much from the grid, or or deep in the chill of winter when people use electric heaters to stay warm.

Brownouts are not just inconvenient and annoying, they can also seriously damage sensitive electronics. Traditional wisdom tells you to shut down and unplug such devices until the brownout's over, but with an emergency backup power system you can keep working on that computer or binging Netflix worry-free.

What's the difference?

Blackout: total grid failure and all the power goes out

Brownout: reduction in voltage so lights flicker and dim

Blackouts: power goes down completely for a (usually) brief time

A blackout is your standard loss of power. Without juice, everything electrical turns off. This can happen for just a short time, most likely due to a small-scale technical issue (which is what an outage technically is), or for a lot longer across a wider scale. These longer blackouts can happen for a variety of reasons such as system overload, a natural weather event, or good old-fashioned human error.

Sometimes when the demand is too big a brownout's not gonna cut it, and because the utility can anticipate the grid being overtaxed they'll use a rolling blackout to compensate. This is a planned event where power is purposefully cut off to a number of small areas in sequence, one at a time for only a short time, hence "rolling." This is done to prevent a longer blackout that encompasses the whole region for a longer period of time. The lesser of two evils indeed.

Unfortunately, most power outages cannot be predicted. If there's damage to the system, such as a downed powerline due to wind, ice, or a car smashing into a pole, then the blackout lasts until it can be repaired. In severe storms there is often several such incidents happening in different places at the same time and utilities don't have the resources to fix them all at once, so they must triage the situation and deal with the most significant problems affecting the most customers first. That's why rural or remote areas with a small population tend to have longer blackouts than urban areas.

Blackouts have the potential to cause serious problems, from food spoilage (if a fridge or freezer can't cool for more than about 4 hours you can say goodbye to the food stored within) to dangerous temperature drops or rises (with no heating or air conditioning you're at the mercy of the elements) to medical emergencies (spoiled medicine or loss of power to an essential medical device put people depending on them at serious risk).

It's not like we don't know that blackouts are going to happen. We absolutely know they will. So it only makes sense to keep your food and your loved ones safe with an emergency backup system.

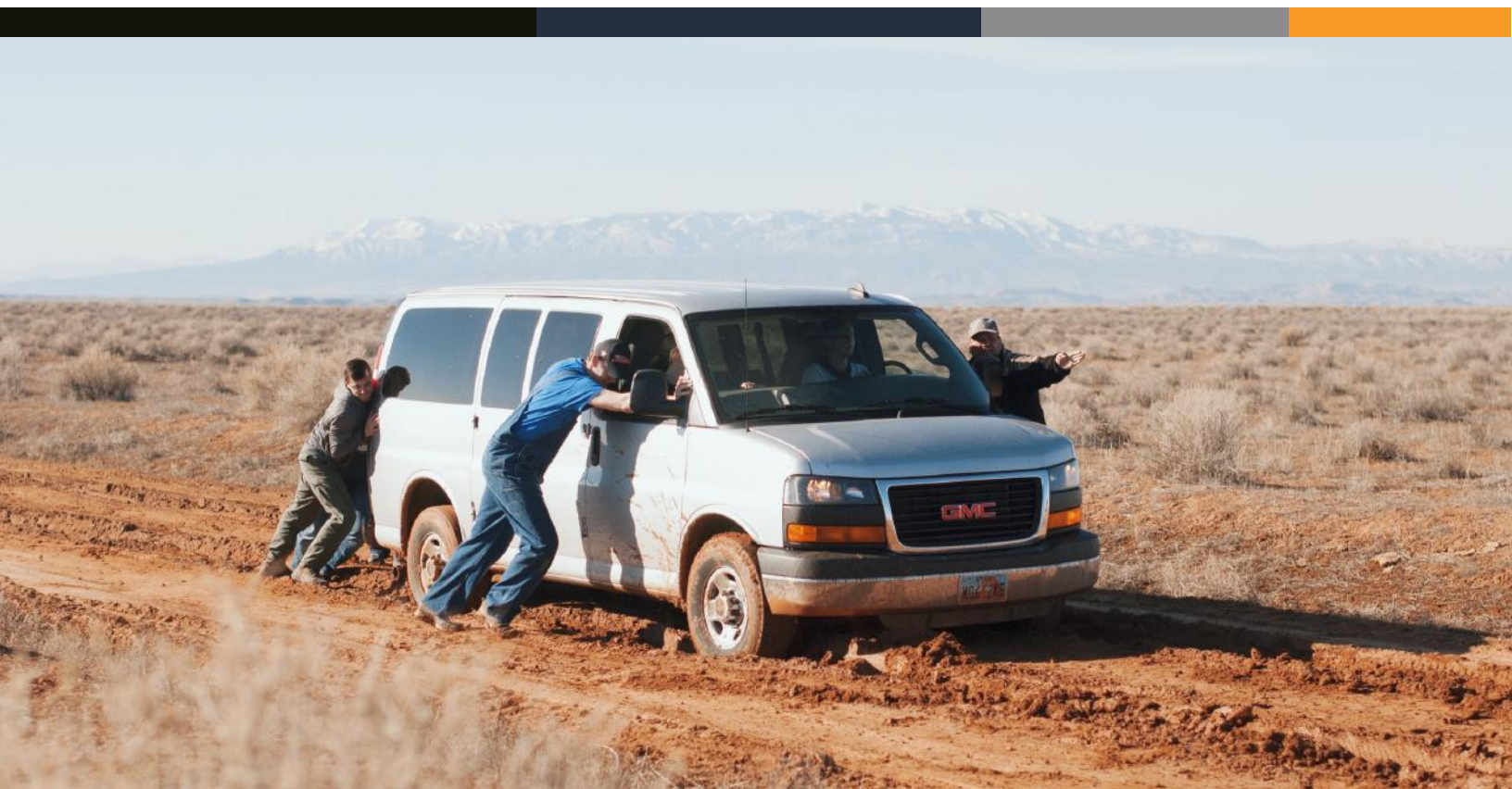
Stranded

Caught out in a storm, RV breakdown, that sort of thing

Emergency situations where no power is a problem don't just happen at home. Whether you're out camping, on a drive, or RVing, getting stranded is no fun. Having an emergency power supply in any of these situations could quite literally be the difference between life and death.

Caught in the middle of nowhere with a dead car battery is the stuff of nightmares, but a battery backup could have you charged up and ready to go, turning your horror movie situation into an adventure story you can brag about at your next dinner party.

If being stranded without power is something that keeps you up at night, never fear: there are some fantastic battery backup systems out there that can protect you from such disasters away from home.





Extended emergency

Flood, hurricane, blizzard, and so on

With climate change, both the frequency and severity of major natural disasters are rising along with the global temperature. Just ask a Californian about increased wildfires and flooding, or talk to someone in Alabama or Georgia about [the rise in tornado activity along "Dixie Alley"](#). Or even talk to someone in New England about hurricanes, because these monster storms are being felt further and further north with alarming regularity.

We need to accept that catastrophic weather events are spreading across the board, happening more often in more areas at more times and lasting longer than ever before. While weather emergencies are growing, our ability to rebound from them is not.

Utilities simply cannot keep up with the increased strain on the grid, putting all of us at more risk of suffering extended periods of power loss. These longer-lasting outages make a solar backup system even more valuable because its solar panels can keep its battery charged and your appliances running no matter how long the emergency lasts. If you're relying on a gas-powered generator you'll be constantly worried about running out of fuel, but solar generators eliminate that stress because you'll never run out of sunlight.

Large-scale disaster

Long-term outage, evacuation, lose of home, etc.

When it comes to big weather events like a hurricane it's not unexpected that such calamities will cause power outages, but things can get really dire when mass evacuations are required, or when places are devastated and entire homes lost.

Where do you go when you don't have a home anymore? If you don't have family or friends to take you in there are emergency shelters, campers, or even a tent in a campground. The fact is you can't always count on the kindness of strangers, so make sure you're protected by being prepared with a portable power supply like a battery pack or generator.

Bonus points if you can recharge it with solar panels because you'll have power for as long as you need it. Just be ready for strangers to come calling for your kindness to charge up their cellphones.

SHTF

Total – perhaps permanent– collapse of the power grid

The end of the world as we know it (TEOTWAWKI) isn't something most people like to think about, but there are some people who think about it all the time and do everything they can to be ready for when the stuff hits the fan (SHTF). Preppers know that from nuclear or civil war to alien invasion or giant meteor strike, there are scenarios where there won't be a grid to count on anymore.

If and when the poop really does hit it, an emergency power supply—especially a renewable one like solar—will make all the difference.



Understanding the power in your home

The electricity in our homes is something we tend to take for granted, like roads and mail and garbage collection. It's just there, making our lives better, until it's not. We only acknowledge how important it is once it goes away.

There's not a lot we can do about a road that gets washed out so we can't get where we want to go, the same as a postal or garbage strike that cuts service. We're powerless against it. But not so with electricity. If something happens to cut utility service we don't have to just sit in the dark and wait for it to come back.

We can make and store our own power to keep the lights on.

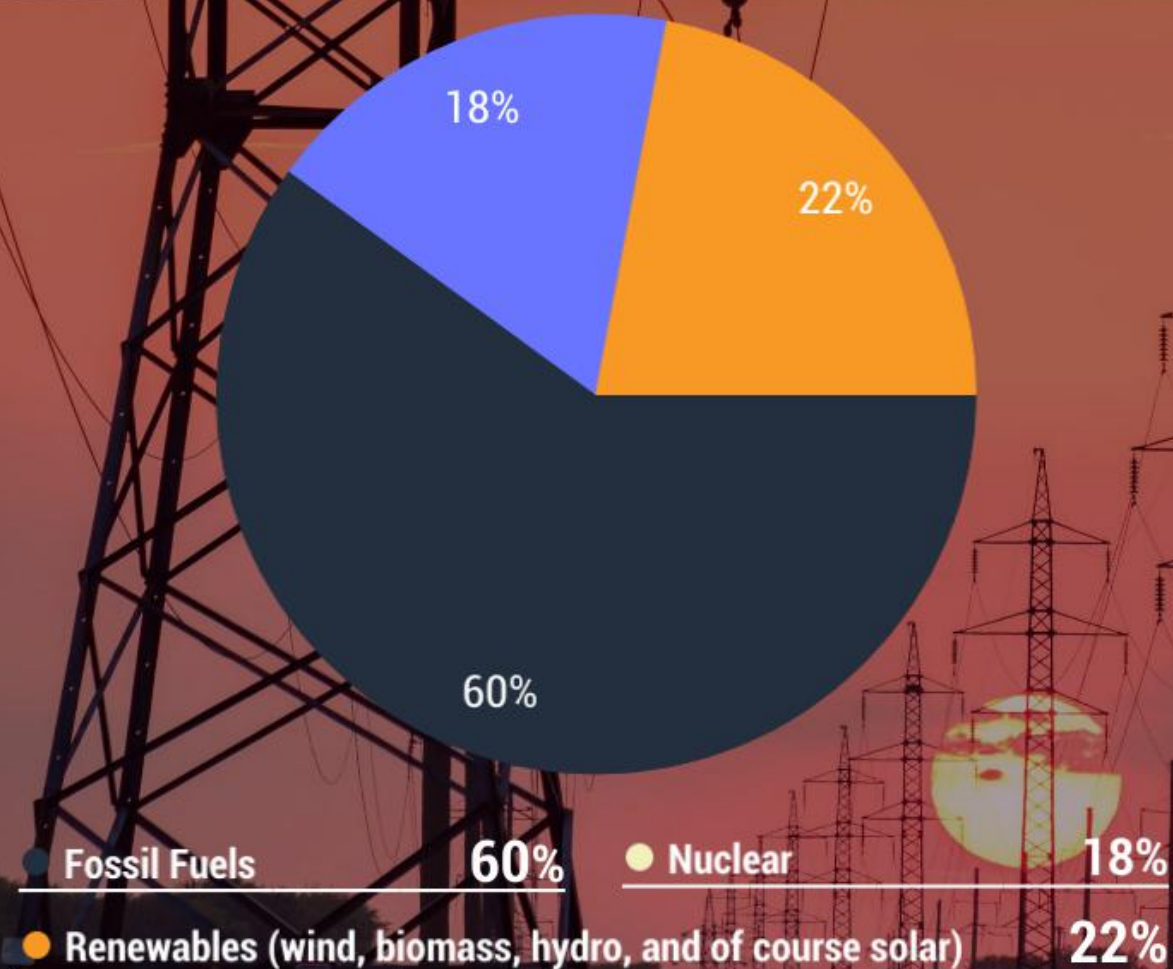
The grid: source of our power

The electricity that enters our homes through the grid comes mostly from fossil fuels (coal and natural gas), with the rest coming from nuclear and renewables (wind, solar, hydro, biomass).

According to the [US Energy Information Administration](#), in 2022 American utilities:

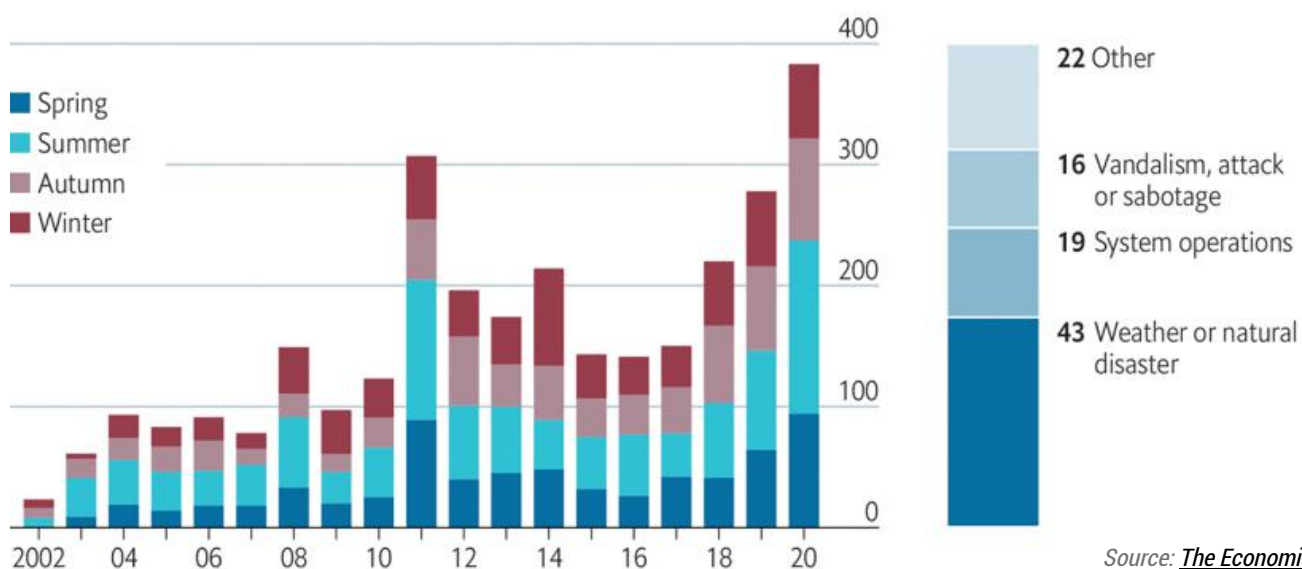
- had 7,300 power plants
- generated 4.24 trillion kWh of electricity
- distributed electricity around the country through 160,000 miles of power lines
- provided service to 140 million customers

Sources of Grid Electricity



Lights out

United States, reported electric disturbances

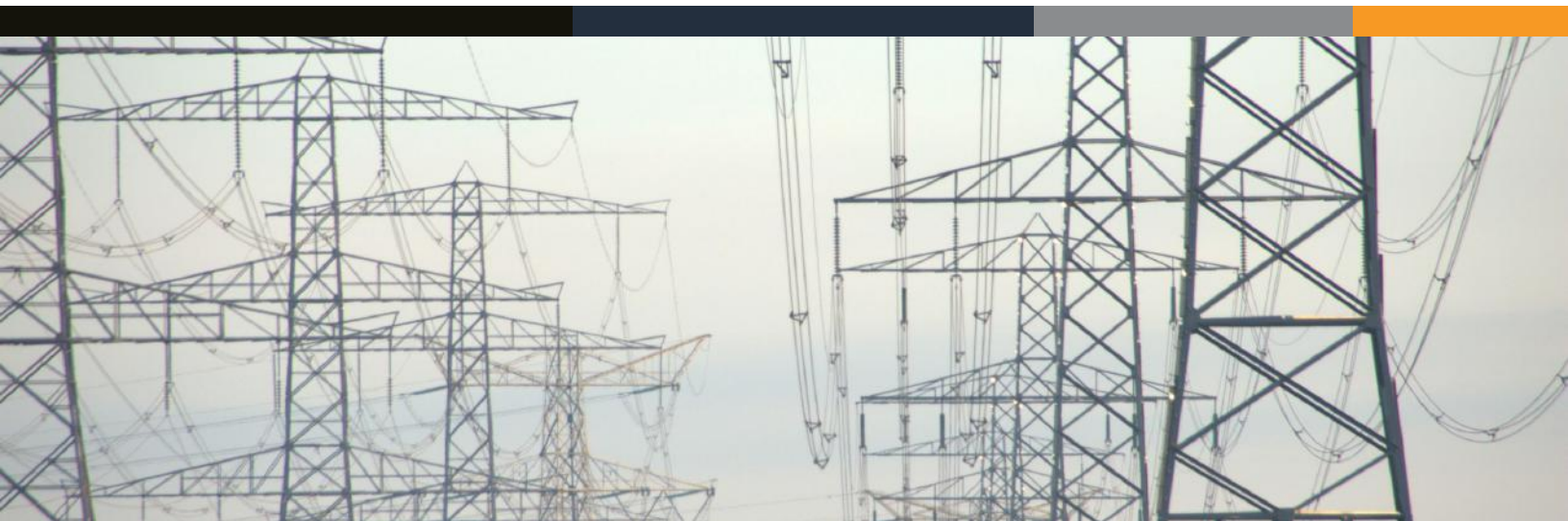


Solar: the alternative to the grid

The grid is not the only source of electricity. In 2022, 58 billion kWh were produced by small-scale solar power systems, such as home solar power systems.

Some people rely completely upon home solar power for all their electricity needs, but you don't need to go off grid to be able to weather out emergencies. (Although if you are interested in finding total energy independence, we have a comprehensive [guide to going off grid with solar power](#).)

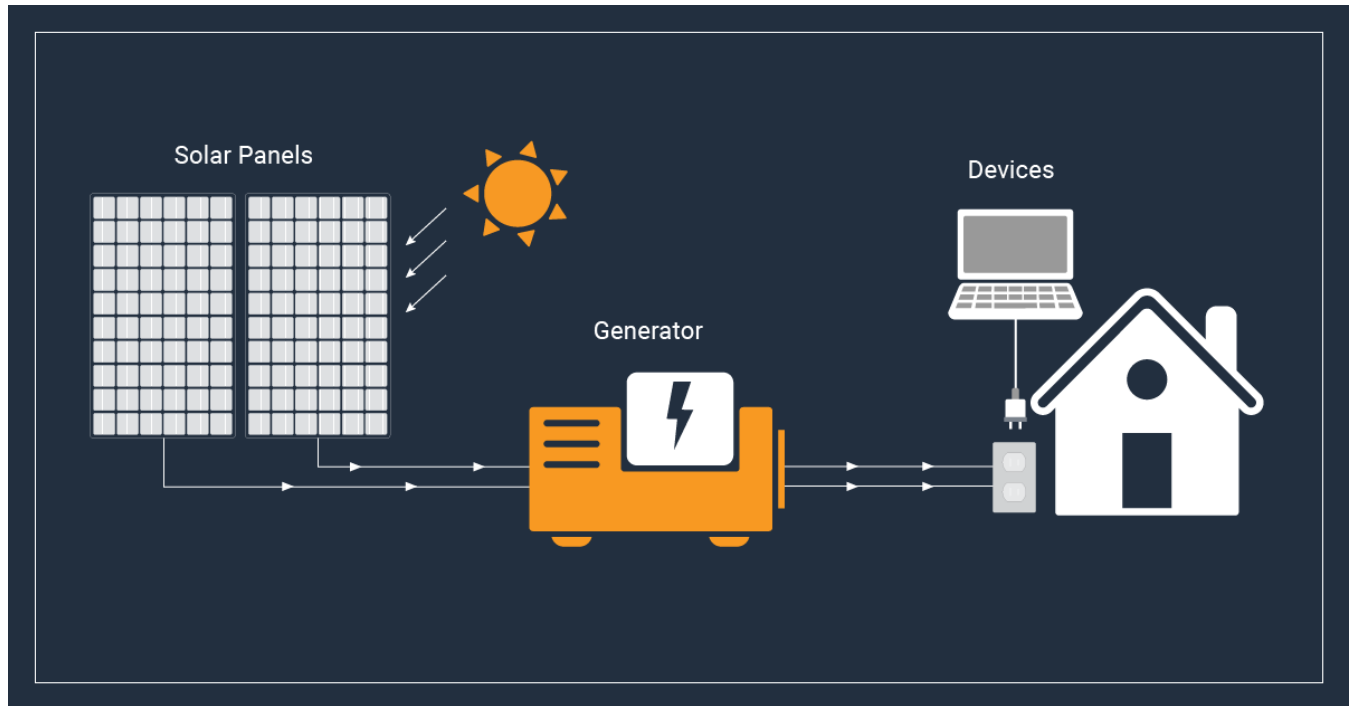
The usual setup for emergency backup power is to use portable solar panels and a solar generator to produce, store, and provide electricity only when the power goes out. Somewhere in between a full-scale off grid setup and little emergency backup solar power system is one that supplements what you get from the grid. This is called a hybrid solar system and it can not only protect you from blackouts and brownouts but also lower your day-to-day reliance on utility companies.



Understanding solar power

There's no magic to solar power, it's not even that complicated. It's just science.

There are various kinds of solar setups, but we'll take a specific look at the typical solar power system used for emergencies.



It begins with the sun. Sunlight is chock-a-block with energy, and this energy is captured and turned into direct current (DC) energy by the photovoltaic cells in a solar panel.

This energy flows into a solar generator where it is stored before either being fed into your electrical panel and sent to the plugs around your home or fed to appliances plugged directly into the generator itself.

The solar generator contains the batteries to store the energy as well as a charge controller to protect the batteries from overcharging and an inverter to convert the electricity from DC into the alternating current (AC) that our appliances and devices use.

Panels to generator to devices. Pretty simple, huh?



Solar vs gas

The traditional way of coping with electricity emergencies is by having a gasoline-powered generator. Anyone who has one (or has a neighbor who has one) knows that this is not an ideal solution.

- They're noisy
- They stink
- They can't be used indoors
- They have to be constantly refilled with expensive, dirty gas
- They require a lot of maintenance
- They're a pain to move around

Compared to a convenient, quiet, reliable solar generator, these cumbersome brutes can't hold a candle.

With a solar generator, you've got emergency power at the ready. The large-capacity lithium-ion batteries in this kind of generator can keep your critical appliances running for hours without recharging. When connected to solar panels you can stay powered up for much longer, and as an added bonus you know exactly how much power you're using and how much you have with the solar generator's digital status display.

Benefits of solar power for emergencies

There are plenty of reasons why solar is the way to go for emergency preparedness:

Sunlight's free

Being able to keep producing electricity even when the grid's down is a huge benefit. Unlike gas generators people mostly use during emergencies, with solar you don't have to keep going out to buy more sunlight, it's free, it's clean, and it works without you having to head outside during a storm and refill.

Good even when not in an emergency

Can you imagine lugging a gas generator out with you when camping? Solar generators are highly portable and can be used in all kinds of outdoor situations where there isn't power available or an extension cord long enough to reach. Connect some portable folding solar panels to keep it charged up, and you're good to go for a long time.





Quiet and discreet

Listen, do you hear that? No? That's because solar power makes no noise. You won't annoy your neighbor; in fact, your neighbor won't even know you're using it. If you have a solar generator, nobody will even see it because you can run it inside without a problem. Nice, quiet solar is a stealthy way to stay powered up no matter what goes down.

Super-duper simple and reliable

Forget about turning on fuel lines and priming and yanking on that pull cord to start it up, a solar generator kicks into action with the press of a button. It's a small, portable box without a lot of moving

parts and few things that can go wrong. Almost maintenance-free and effortless to use, you'll always know you're ready for an emergency with a full battery.



DIY dream

[Setting up an emergency solar power system](#) is simple enough for any homeowner to do by themselves.

The flexibility of a backup solar system lends itself to many creative setups and uses, making it not only a smart move but also a fun one too.

What to consider when planning for emergency solar power

Not everyone faces the same hazards—someone in Florida isn't so concerned about a snowstorm, just like someone in Alaska doesn't fuss about hurricanes—so it makes sense that not every emergency backup system is the same.

For example, the amount of battery storage depends upon how much power you need to maintain during an emergency and for how long, and the number and type of solar panels depend upon how much sunlight you can expect to get and the possibility of being damaged by severe weather.

We'll dig into how big your system's components need to be in more depth later. Before that, let's cover the considerations that everyone needs to take into account when planning their emergency solar power system:

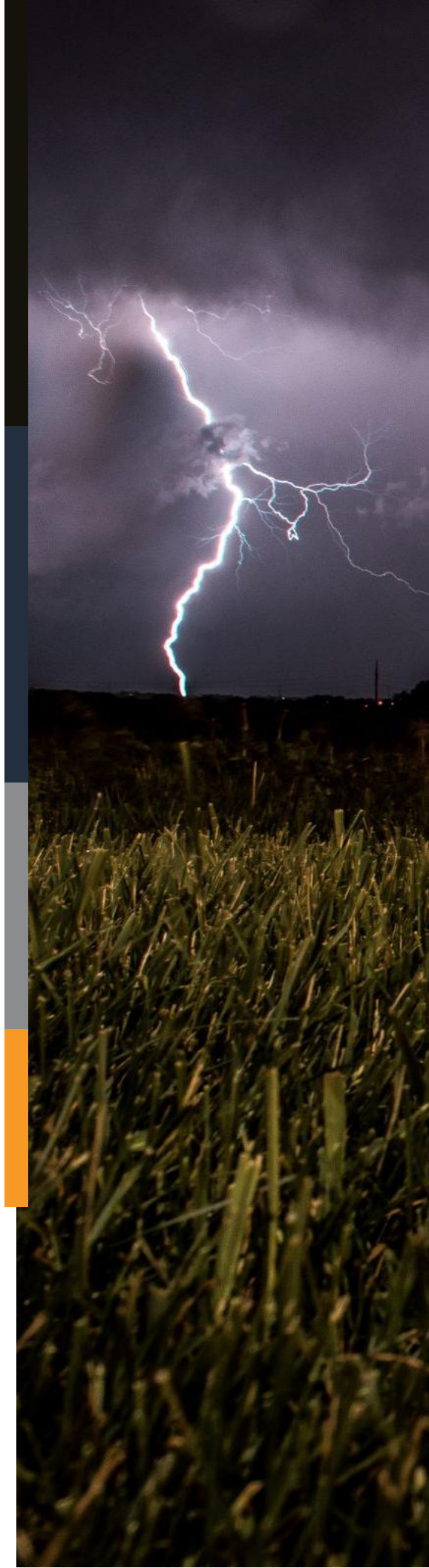
Seasonality and location

[Different seasons bring different kinds of threats](#), depending upon where you are. There are specific places and seasons where there is the danger of tornadoes, hurricanes, floods, blizzards, wildfires, and other possible ways the power might go out.

[Certain places are more prone to outages](#) as well, due to factors such as types of weather emergencies, population, and infrastructure conditions. Weather is the worst culprit causing 70% of power outages.

California is particularly prone to outages—a quarter of all outages in the US in 2022 happened there. Texas, New York, Ohio, and Michigan round out the top 5 States for having the power go down, although [Florida leads the pack](#) for how long the power goes out.

You know better than anyone the risks you face where you are. So keep in mind what the likely causes of your outages are, as well as when they will probably happen and for how long.



Portability

Do you want to have an emergency power supply you can move around or take with you in case of an evacuation? Solar generators are very handy things because they are quite portable, as are folding solar panels.

You can connect a solar generator to your home's electrical panel or take it into any room and plug your devices directly into it. You can also pop it into the back of your vehicle and take your power supply with you wherever you need to go. Indoors or outdoors, it's a solution that goes where you need it.

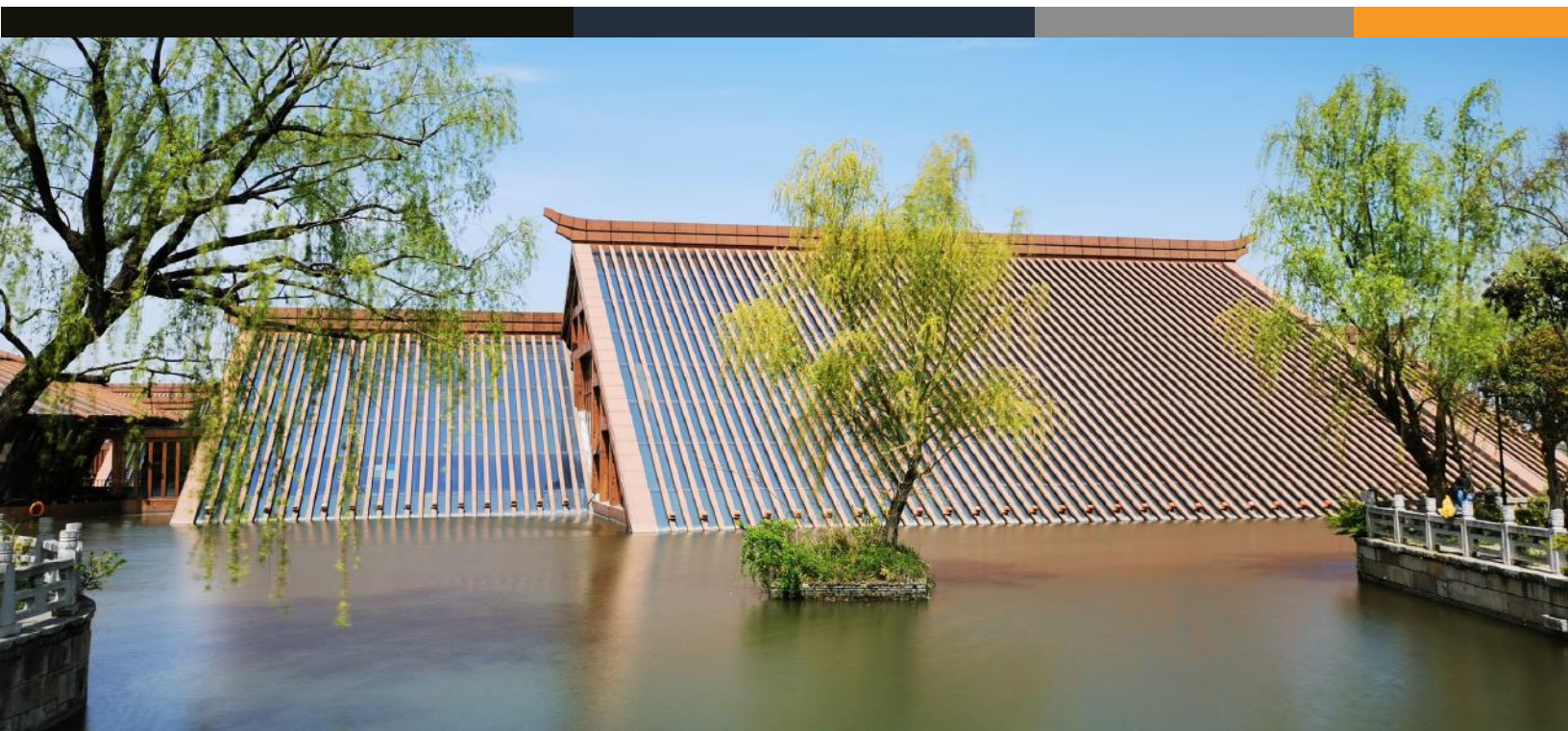
Versatility

In a lot of ways this goes hand in hand with portability. Your solar generator doesn't only have to be for emergencies. Sure you can take it with you on an evacuation, but that also means you can bring your power along on a camping trip or any other adventure where having electricity would enhance the experience. If the weather's so bad your solar panels can't recharge it, you can even plug it into your car and charge it that way. Or vice versa: if your car battery's dead you can charge it with solar power.

Dependability

There are many brands of solar equipment, and not all are created equal. Do your homework and ensure you're getting what you pay for. Check for good reviews, a competitive warranty, and professional recommendations on all the different parts of your emergency solar power system.

Good quality solar components require almost no maintenance and are covered by extensive warranties because hardly anything ever goes wrong with them.

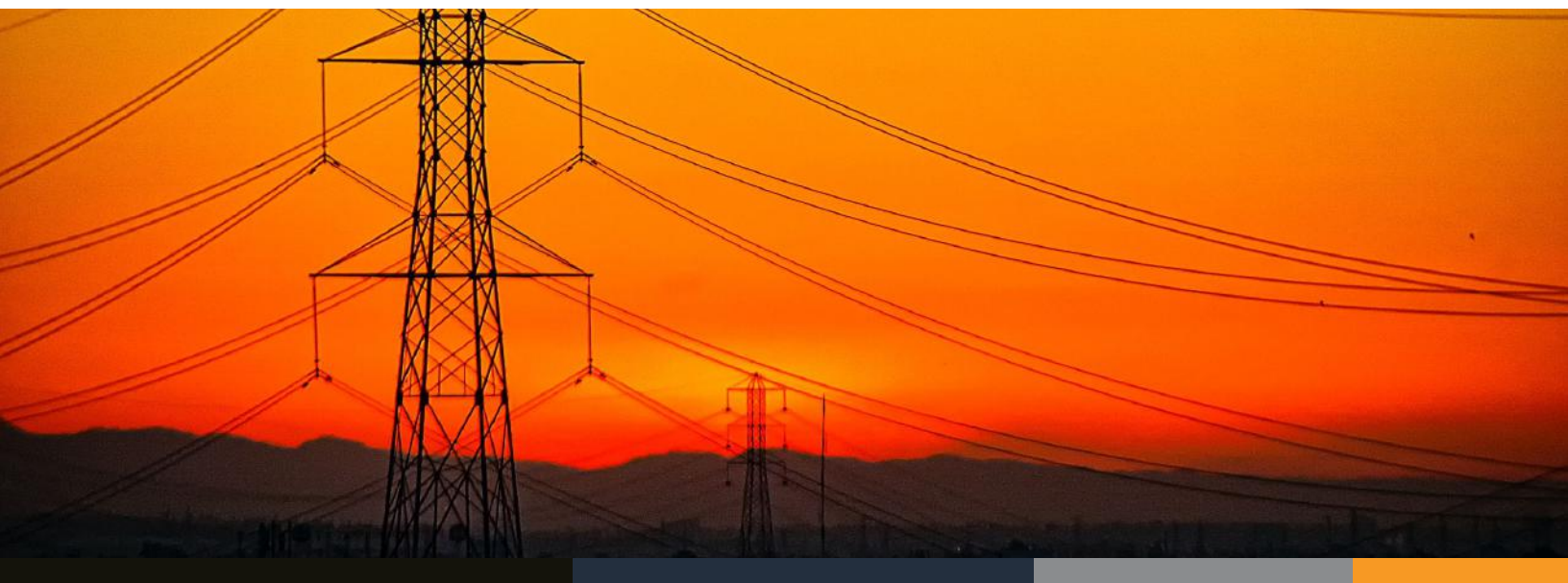


Simplicity

When you're in an emergency the last thing you want to do is muck about with a lot of complicated procedures. You want something that anyone can simply plug in and forget so you can move on to all the other important things you need to handle.

Affordability

For almost all of us cost is always a concern. We want to know we're getting the most bang for our buck. This may require a bit of a balance with the other factors, but you don't need to fork over a fortune to get a quality solar power system to see you through any emergency you may encounter.



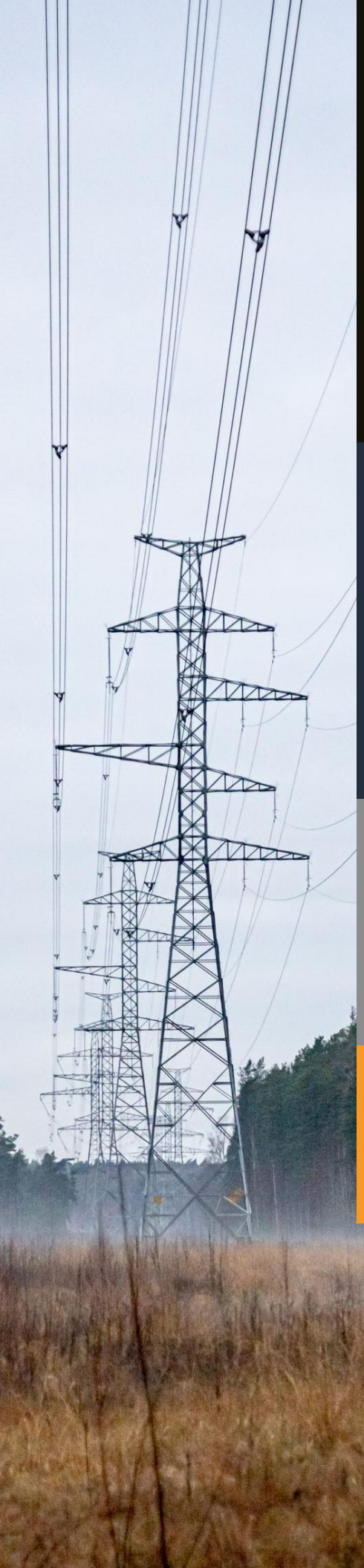
Solar emergency preparedness equipment

When it comes to preparing yourself for a power emergency with solar, there are two routes you can take:

1. Emergency backup
2. Total off grid protection

Emergency backup

If you're only looking for a backup power source in case of emergency, the system you need is relatively modest. You don't need to power every electric appliance in your house with it, only the essentials, and only for a limited period of time. This is the category most people fall under and the focus of this guide.



For simple emergency backup, a [solar generator](#) is the solution. The generator's battery is flexible enough to be charged using power from the grid, but where it really shines is when connected to [solar panels](#). If you don't have panels, you're limited to only the amount of power the battery can store in a single charge because in a blackout you can't recharge it. With panels, you can keep recharging it indefinitely, no matter how long the power's out.

In addition to the solar generator, the other equipment needed for this kind of emergency backup solar power system are solar panels and the cables and connectors to hook everything together.

The best way to build this system is with a [solar generator kit](#). Specially designed and thoroughly tested using top-quality components, these kits contain everything you need to prepare for emergencies.

Total off grid protection

If you're really serious about being prepared for any situation from a simple downed powerline to the complete failure of the nation's infrastructure and The End of the World As We Know It (TEOTWAWKI), what you need is to take yourself off the grid completely.

This is more than just a backup power source, this is total freedom and independence from the grid. You generate all your power, all the time, no matter what happens.

Being prepared for emergencies by going completely off the grid is a whole other beast. If this is more your jam, we have a comprehensive [guide to going off grid with solar power](#) that'll teach you everything you need to know about achieving total off grid energy independence.

How to create an emergency solar power system

By now you should have a general grasp on what kind of system you need for the type of emergencies you want to prepare for. We're ready to go deep into the weeds and figure out exactly what you need to create your emergency solar power system, which means figuring out how big you need your system to be.

There are two parts to figuring out the answer to that question and each relates to a different part of the system:

1. How much power you need to store determines the size of your generator
2. How quickly you want to be able to recharge the generator determines the size and number of solar panels

Emergency solar generator

Whether you call it a portable power station or a solar generator, it is exactly what it sounds like. We know what a gasoline-powered generator does and its solar cousin acts as the same kind of alternate source of electricity. You can hook it into your house's electrical panel or plug devices directly into it.

The difference is that a gas generator uses a motor to produce electricity as it's used, whereas a solar generator stores electricity in a battery that's charged with solar panels. You can have panels always attached to it to keep your solar generator fully charged at all times, or keep it with a full charge for when the need for it arises and only connect the solar panels when it needs to recharge.

Emergency solar generator size

The size of a solar generator relates to the capacity of the battery inside it: how much energy it can store. This is measured in watt-hours. You want a generator that stores enough power to keep the devices you want to keep running for as long as you think you might need to.

To make an educated guess about what size generator you need:

1. Figure out what you'd want to power with it during an emergency. Lights? Heater? Fridge or freezer? Microwave? Outlets? Write them all down.
2. Go online and consult an [energy consumption guide](#) to find the wattage of each one.
3. Estimate how many hours you want to be able to keep each one running before having to recharge the battery.
4. For each appliance, multiply the wattage by the number of hours to determine the watt-hours it needs.
5. Add all the watt-hours together to get the Wh you need in your generator.

For example, say all I wanted to do was have backup power for a short 4-hour blackout:

APPLIANCE	WATTS	HOURS / DAY	WATT-HOURS
Laptop	50	4	200
TV	85	2	170
Fridge	500	4	2000
Microwave	600	0.25	150
LED lights (3)	21 (7 each)	4	84

Adding up all the watt-hours you get 2,604. A nice 3600 Wh Ecoflow Delta Pro would do the trick. It's possible you'll have more appliances and you'll want them to run longer, but this gives you the basic idea: estimate your total power consumption of your essential appliances and how long you need to run them for, and size your generator accordingly.

You'll also want to allow for the unexpected and size your generator a bit larger, just in case. After all, this is all about being prepared.

Best emergency solar generators

[Solar generators](#) are an investment. The initial cost is more than you'd pay for a gas generator, but the benefits of solar are huge.

We can heartily recommend a number of brands that make excellent, reliable, high-quality solar generators with top-notch batteries inside them. All these companies are respected names in the solar industry and they specialize in solar batteries, generators, and panels.

EcoFlow

[Delta Pro](#) (3600 Wh) - \$3399

[Delta 2](#) (1300 Wh) - \$999

Bluetti

[AC300](#) - (3072 Wh) - \$3699

[AC200Max](#) (2048 Wh) - \$1899

Jackery

[Explorer 1000 Pro](#) (1002 Wh) - \$999

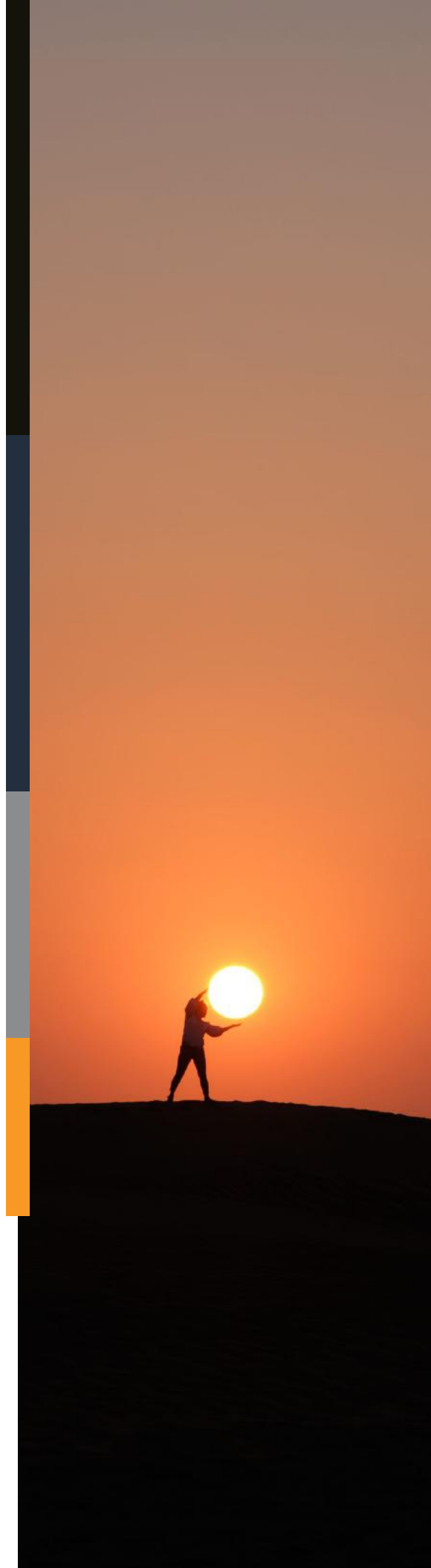
For a deeper dive into what makes these solar generators so good we have an article about the [best emergency solar generators](#) you will find helpful and informative.

Emergency solar panels

Solar panels are the most visible part of a solar power system, and the most recognizable. They contain photovoltaic cells that convert the sun's rays into electricity. When connected directly into a solar generator, they can charge its battery as long as the sun is shining.

A collection of solar panels working together is called an array. Odds are, you will want to have more than one solar panel otherwise it could take a long time to bring the battery up to full capacity.

For an emergency backup solar system, you are probably not going to permanently attach the panels, rather you will store them inside and set them up when needed.

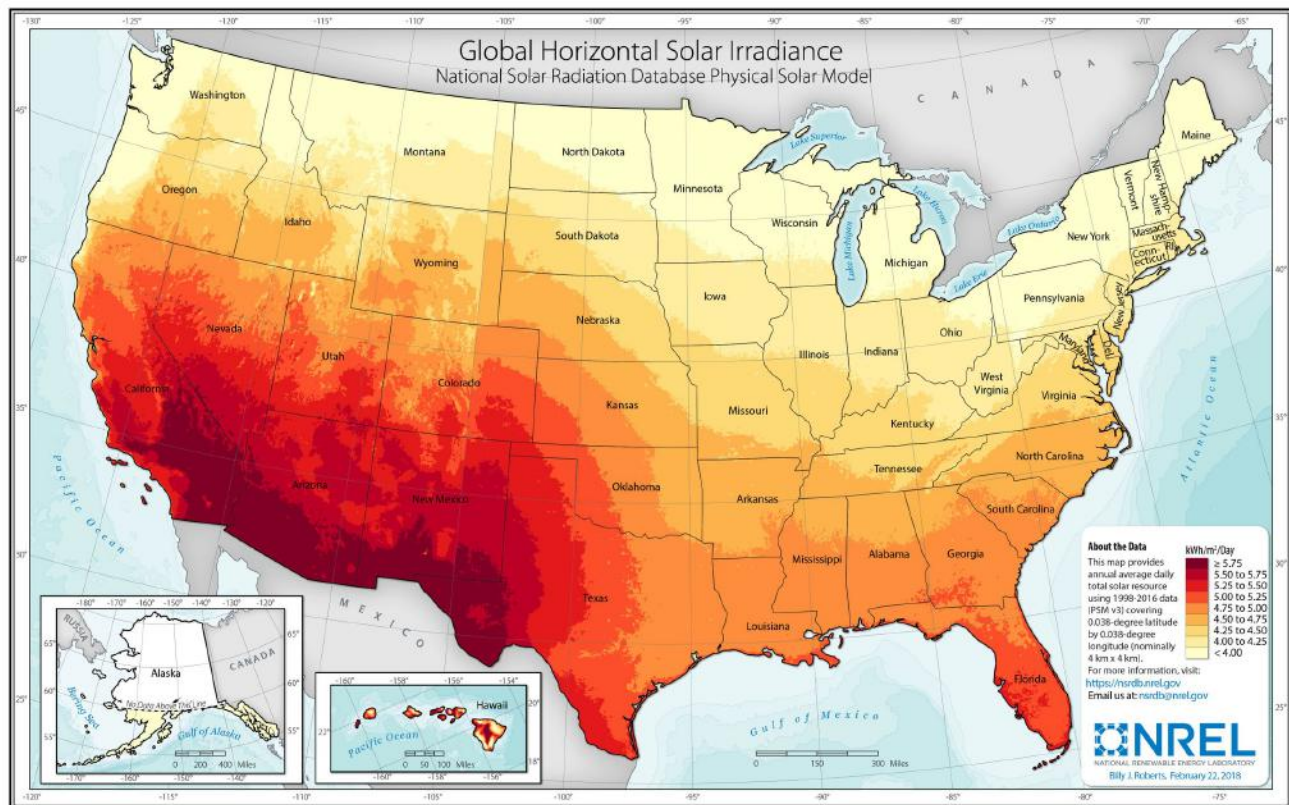


Solar array size

The size of your solar array refers to the amount of electricity it can produce in an hour of optimal sunlight, measured in watts. Generally, you want to be able to recharge your battery each day by the amount you used the previous day, so you need enough solar panels to produce that amount while the sun's shining.

Although any amount of sunlight can be converted into electricity by solar panels, when calculating the size of an array we typically use something called peak sunlight hours, which refers to the period of time when the sun is at its zenith and giving optimal sunlight.

The exact number of peak sunlight hours you get depends upon where you live: the further south you are, the more hours you get. The average in the US is about 4.5 hours. You can go online to determine exactly how many hours of peak sunlight you get where you are, or consult a map.



Source: National Renewable Energy Laboratory

To get an idea for the size of the solar array you want, take the size of your generator and divide by the number of hours you want it to take to fill it.

It's not an exact science. There are other considerations like where to store the panels when not in use, where to set them up when you need them, cost, and so on.

When in doubt, talk to a pro. (Honestly, you should talk to a pro regardless of how much doubt you're in.) An experienced solar professional can give you the guidance and help to find the right solar array for your needs.

Best emergency solar panels

Solar panels come in various sizes related to their output potential, measured in watts. The bigger the panels, the fewer you need to produce the desired amount of electricity. As technology advanced in recent years the size of panels has increased, but for an emergency backup solar system, the bigger panels aren't necessarily better.

Unless you're building a permanent array you really want to stick with the smaller panels because they are lighter and easier to store and maneuver around when you need to set them up. The 100 and 200 W panels are great.

If you're thinking about taking your solar system on the road you need the most portable panels, so consider the folding ones. They have a few drawbacks, such as being less efficient and taking up more surface space, but if versatility and portability are high on your list then folding panels are the way to go.

As with solar generators, we can recommend some very reputable brands, but the ones we consider the best choices for emergency backup solar systems are made by Rich Solar.

Folding solar panels

Folding solar panels are a very popular choice for emergency solar backup systems because of their flexibility, not only in a physical sense but also in the ways they can be used. They're normally stored somewhere safe and only brought out when needed.

Our top picks for folding solar panels for emergency backup power are:

- [200 Watt folding solar panel suitcase](#)
- [100 Watt folding solar panel suitcase](#)



Rigid solar panels

Rigid solar panels aren't as convenient or portable as folding ones, but they are more efficient. You'd typically find these ones permanently installed on a roof or ground-mounted on a rack.

Our top picks for rigid solar panels for emergency backup power are:

- [200 Watt high-efficiency solar panel](#)
- [100 Watt high-efficiency solar panel](#)



Want to know more? Check out our article devoted to the [best solar panels for emergency systems](#).

Emergency solar accessories

Being prepared for an emergency with solar power can include more than just a backup power system. There are other accessories and tools that could make the difference in an emergency situation, or at least make the ordeal less troublesome.

Lights

The old standbys of candles and flashlights still work, but there are better options out there. [Low-wattage LED lights](#) draw very little power so they won't drain your solar generator very much, even when [they come in a string](#). With a USB plug they're incredibly versatile because you can power them directly from the generator (good generators come with a variety of different types of outlet) or from a laptop or a normal power outlet with an adaptor.

Cables and connectors

Having a reliable, easily refillable source of electricity like a solar generator can do more than power lights and charge phones (although they are really handy for that too), you can use it to provide energy to anything that requires electricity, like boosting a car battery or even charge up an electric car. You do need the right cables, though, and you can always find one that will connect to whatever you need.

EMP protection

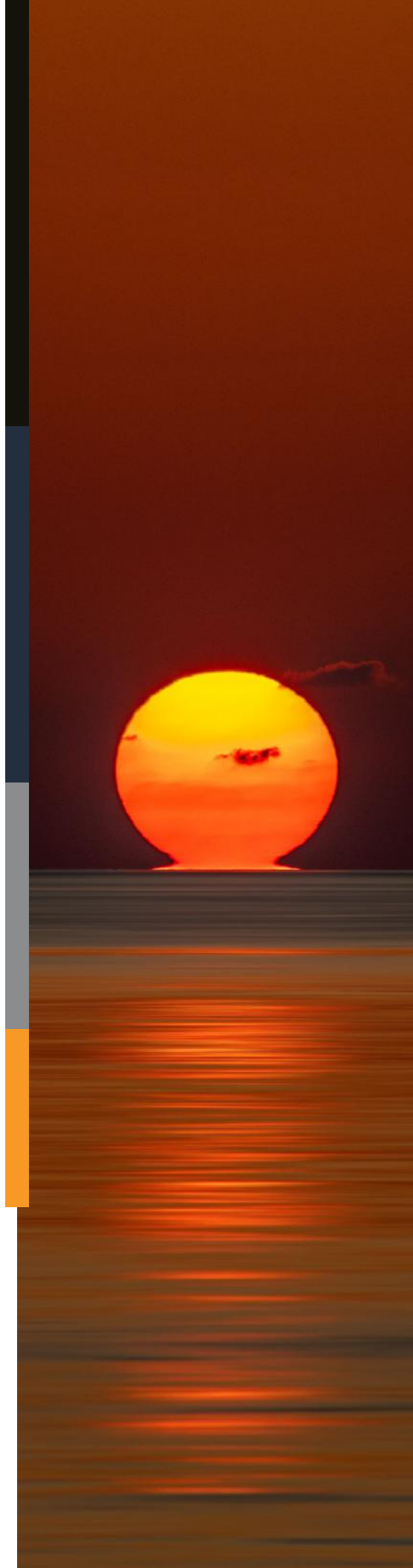
You know, it would really suck if you put all this effort into being prepared with a nice, fully-charged solar generator only to have it rendered useless by an electromagnetic pulse (EMP). [EMP shields](#) can protect sensitive equipment such as computers, cellphones, and—you guessed it—solar generators.

Fridges and freezers

You never know what unexpected emergency might bring but no matter what you've gotta eat, or maybe you have crucial medicine that must be kept cold. Protect yourself with a [solar fridge or freezer](#), a useful tool even when the power's on or you're on the road.

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Solar kits: the best way to be prepared

Sure, you could go to an expensive solar company and ask them to set you up with an emergency backup solar power system, if you want to pay a lot for someone else to do something you could do yourself for a lot less, that is.

And sure, you could go out and source the individual components of the solar system yourself, if you enjoy doing a lot of extra work and taking on extra risks, of course. I mean, it will cost less than if you use a solar company, but how can you be sure the equipment you get will work well together? What happens if you have a problem or need help with setup?

The smart, simple way to land yourself a great emergency solar power backup system at an affordable price is with a solar kit.

What is a solar kit?

A solar kit is what it sounds like: a prepared kit that contains everything you need to put together a solar power system yourself. It has been tested to ensure that you're getting maximum performance and efficiency from the different elements and that those elements are all of high quality from reputable brands.

There are a lot of different kits out there, each one tailored to a specific goal: a complete off grid system, a hybrid system using both solar and grid power, portable systems you can take anywhere, and, of course, emergency backup systems.

Solar kits also come in various sizes to meet the individual needs of the buyer with respect to how much power it generates and stores.



An emergency backup solar kit contains solar panels to harness sunlight and convert it into electricity, a generator to store and manage the flow of electricity and convert it from DC into AC power that your devices and appliances can use, and all the cables and wiring you need to connect it all together.

And if you get a solar kit from one of the better suppliers, you'll also get complete instructions and lifetime customer support to help you get your system set up and keep it running properly for as long as you own it.

Oh, and if saving money is your groove a solar kit also happens to be the least expensive option.



Benefits of using a solar kit

We just touched upon some of the reasons [why a solar kit is awesome](#), but it's worth emphasizing the benefits by putting a bow on them:

Solar kits save you money (and lots of it)

this is probably the biggest reason why so many people choose a solar kit over hiring a solar company or sourcing individual components themselves.

- A solar kit is typically half the price of what a solar company will charge, partly because solar companies have enjoyed many years of inflated prices due to a lack of competition, but also because they have to build a lot of soft costs into their pricing
- Solar kits are built using the highest quality materials so the system will work better and last longer so there's less chance of incurring additional costs through repairs or replacements
- Solar kits are also built with efficiency in mind to ensure that all the various parts—which may each come from a different brand supplier—work together in harmony and maximize performance
- Solar kits take advantage of volume using components that offer the best value through wholesale arrangements with manufacturers and this is passed along to you, the consumer, through competitive pricing



You know a solar kit is going to be efficient

You can usually be sure that a solar company's system is going to work but if you try to assemble a system yourself using parts bought from a big box store or gigantic online site that sells everything under the sun you could inadvertently choose pieces that don't play well together, and fixing this will not only be a massive headache but likely also incur added expenses.

Solar kits make solar easier

When you choose a solar kit you're not alone; experts at the solar kit retailer basically hold your hand throughout the process so you come away as an expert in your emergency solar system who's able to set up, troubleshoot, and use it confidently.

Solar kits come with a lot of support

The hand-holding that you get when purchasing a solar kit doesn't end there, the personal service continues throughout the lifetime of the system giving you peace of mind for as long as you own it.

The best solar kits for power emergencies

There are a lot of solar kits on the market and it can get confusing trying to parse out the differences. The name of a solar kit tells you all you need to know, if you know how to read it. For example, let's break down one of the [best solar kits for emergencies](#), the [EcoFlow DELTA PRO 3,600wH / 3,600W \[Hex Kit\]](#).

- **EcoFlow Delta Pro:** the core of each kit is the solar generator included so it's the first thing in the name. This one is the EcoFlow Delta Pro which we consider to be the best solar generator out there.
- **3600Wh / 3,600W:** these numbers refer to two aspects of the generator. The first is the capacity of the battery—how much electricity it can store—given in watt-hours, in this case a decent 3600wH. The second refers to the AC output, which is the limit of how much power it can push out at any given time, in this case 3600 watts. This means that if you max out the power output of 3600 watts you can do it for one hour because the unit can store 3600 watt-hours.

- Hex Kit: the last part of the generator name refers either to the number of panels included or describes its prime utility. This one is a hex kit so it comes with 6 panels.
 - Double - 2 panels
 - Quad - 4 panels
 - Hex - 6 panels
 - Dual - 2 generators
 - Nomad - designed for portability
 - Eclipse - 1 panel and designed for portability
 - Mini - designed for small power needs
 - Basecamp - designed for large power needs
 - Platinum - designed for off grid needs

We can make it easier for you by recommending kits containing the following solar generators as the best solar kits for power emergencies.



EcoFlow PRO



EcoFlow MAX



Bluetti AC200P



Bluetti AC500



Jackery Explorer 2000

Find them all at
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#1 Source for Off-Grid, Portable & Emergency Power



The boy scouts have it right: Be prepared

You never know when or where an emergency will strike, but when it comes to emergencies that knock out your power you can make some pretty safe estimates.

- Based on where you are you should know the kinds of weather emergencies that are likely to happen as well as roughly when, although climate change has rewritten the manual on this as these situations are occurring with greater frequency and new weather events are happening in places they never did before
- You probably also know how often the power goes out due to non-weather-related crises
- There's also the possibility of a catastrophic EOTWASKI disaster that takes down the electricity grid indefinitely.

It sucks to get caught without power, we rely on it for so much. Lights, heat, refrigeration, transportation, work, communication...without electricity we're left, well, powerless.

You don't have to be left in the dark when the grid collapses. With emergency solar backup power you're always ready for the next time the lights go out. A solar generator can quietly, cleanly, reliably, conveniently, and affordably keep you prepared to power your essential appliances and devices, and when paired with solar panels it can keep you up and running for as long as you need.

Protect yourself and your loved ones with an emergency solar backup power system and get the peace of mind you deserve. And while you're at it, do yourself a favor and choose an emergency solar kit to do it with.

Whether you end up using a solar kit or not, you should do your research by talking to a solar kit retailer anyway. Making solar easy and affordable is what they do—it's all they do—and their passion for solar power means they'll be happy to help you figure out what you need to be prepared.

Take advantage of their expertise and save yourself a whole lot of time and effort (and money); [talk to one of our experts](#) as your first (and probably only) step towards total emergency power preparedness.

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Want to know more about emergency backup solar?

You can explore specific aspects of backup solar power deeper through one of our many emergency solar articles:

- [Emergency solar FAQ](#)
- [Everything you need to know about emergency backup solar power](#)
- [DIY home solar systems](#)
- [How much does it cost to be prepared for emergencies with solar?](#)
- [Essential solar equipment for emergencies](#)
- [How many solar panels do I need to be prepared for emergencies?](#)
- [Why use a solar kit to prepare for emergency power outages?](#)
- [How to prepare for brownouts and blackouts with emergency solar power](#)
- [What's the best emergency solar generator?](#)
- [Top 5 best solar kits for emergency solar power](#)
- [Top 4 best solar panels for emergency solar power](#)
- [Using solar power for weather emergencies](#)
- [How to prepare for power outages: season by season](#)



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