Best 5 Options For Off Grid Batteries To Choose From

As renewable fuel technologies develop, more and more people are looking to use them in order to reduce reliance on commercial electricity and other fuels.

But both options can be quite expensive if you simply buy pre-fabricated power generation equipment and batteries for storage. That's why our reader's question makes a lot of sense:

> *"Have you any info about batteries for solar off grid? Especially inexpensive alternatives?*
>
> *Joe"*

Before you make a decision about which batteries to buy, think about all your options and try a few things out first.

Keep reading to find out more!

1. Pre-Fab Large Scale Batteries

Aside from being expensive, pre-fabricated large scale batteries will be ruined by an EMP blast if they are hooked up to wires or any equipment that can transmit the pulse to the battery.

Even if you use DIY windmills or other power generating equipment that can be easily repaired after an EMP, these batteries may still leave you without electricity. Therefore, it may not make sense to invest a lot of money in these batteries or put all your reliance on them for future power storage needs.

World's Smallest Battery Will Power Your House For More Than 2 Days!

Here are some other things you should know about large scale batteries so that you can have a clearer insight into how they compare to something you might build on your own.

Edison Batteries

Even though Edison batteries are some of the best insofar as deep cycling and constant use, they can also be very unreliable and break down easily.

Over the years, Edison Batteries have been discarded and may be very cheap to find in junk yards and scrap metal stations. If you can refurbish one and get it to work reliably, this will be your cheapest option. You can also make your own Edison batteries and make sure they are built to tolerate repairs.

Tesla Batteries

As with other Lithium Ion batteries, the Tesla Battery cannot be deep cycled as much as an Edison battery. They are also fairly new on the market, so there is relatively little information on how easy or difficult it is to repair them and the cost.

While a Tesla battery may appear more reliable in the short term, that does not mean it is better for long term needs, or that will be reliable enough in a time of major social crisis.

Flooded Lead Acid Batteries (FLA)

As with Edison batteries, the FLA batteries have been around for decades. They were also some of the first used for off gridding power needs.

These batteries tend to have problems in colder weather, and

may break down under constant deep cycling. That being said, if you are looking for a budget battery that has plenty of field experience, FLAs might be your best bet in the pre-fabs.

Lithium Ion Batteries

Even though lithium ion batteries are smaller and more durable than flooded lead acid batteries, they can still easily be damaged if something goes wrong with the inverters and controllers. Since they are also relatively new on the market, it is hard to say if they will last as long as older battery designs.

As with Tesla batteries, if a Lithium Ion battery breaks down, it is doubtful you will be able to repair it.

Lead-Carbon Batteries

These are relatively new batteries that use lead for the positive side of the battery, and activated carbon for the negative side. They are supposed to last much longer than Lithium Ion batteries and will take a lot more wear and tear.

While they are maintenance free batteries, you also will not be able to repair them if something goes wrong.

Flow Batteries

This is also a relatively new battery type that stores two electrochemical liquids in separate containers. From there, they are introduced into a central vessel separated by a membrane. As electrical charges build up, the electrons can be drawn off for use.

“Recharging” the battery is as simple as feeding energy into one tank or the other. These batteries are useful for meeting expanding energy needs because you only need to add larger storage tanks and equipment to upgrade the battery. Even though the electrochemical fluids can last for decades, they

still require pumps to move them around.

2. Small Scale Pre-Fab Batteries

There are many ways to scavenge lithium ion batteries from cell phones, tablets, and other devices, but some other small scale pre-fabricated batteries may also be of some interest to you.

As with larger batteries, these will also be destroyed during an EMP if the battery is hooked up to a device that is susceptible or one where the pulse can be transmitted by wire to the battery.

On the other hand, since these batteries are much smaller and lighter in weight, it is also easier to build Faraday Cages to store spare batteries. Just don't forget to rotate the batteries on a regular basis with the ones you are using for routine use so that they don't deteriorate from lack of use.

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You will also need to look for less power hungry appliances and devices so that you can use the smaller batteries more efficiently. Insofar as collecting power from generating sources, it will be of immense benefit to build smaller modules and then feed the power from each module into the smaller batteries.

If you are interested in exploring diverse power sources, or can produce limited amounts of power using different devices, then these batteries may be an ideal answer for you. For larger appliances, it may also be of use to shift to natural gas or some other fuel source instead of relying on electricity.

NiMH

These small, rechargeable batteries are used in high drain devices such as cameras. They will last a long time, and can withstand both deep cycling and a range of temperatures. Unfortunately, they cannot be repaired and can also be quite expensive to purchase.

Cotton Batteries

Even though Ryden Batteries are still not on the market, there is every indicator that they will be available for both large scale and small applications. As innovative as these batteries are, they do rely on complex technology for manufacture, and are not likely to be repairable.

Automobile Batteries

Standard wet cell and gel cell batteries can be used for low drain applications. They can also be scavenged and refurbished as long as the metal plates in the battery are still in good condition. Just remember that the average life of most automobile batteries is 2 – 5 years.

Even if there are plenty of batteries available now, you may find very few viable scavenge options within just a few years after a major social crisis occurs.

Photosynthesis Based Batteries

These batteries require a special pot, a plant, and some water. As the plant absorbs sunlight and carries out photosynthesis, an electrical current is generated. Even though these batteries are expensive and do not make much electricity, they can last for decades and require very little in the way of refurbishing or repair.

Gold Nano Batteries

The manipulation of molecular structures at that level is truly leading to some amazing innovations in batteries. For example, gold nano wires can be used to make a battery that can be recharged well over 200,000 times without showing wear or breaking down.

While these batteries are not yet on the market, they may quickly become popular with people that want reliable batteries that will last for a long time.

Graphene Batteries

Even though graphene was forgotten about for decades, it is still possible to make it at home. That being said, actually making a functional graphene battery takes considerably more effort. Today, graphene batteries are rapidly taking over, and being used to replace lithium ion batteries.

You can purchase small batteries as well as larger ones that can be used to power a motor vehicle. These batteries are known for durability as well as the capacity to work well in high drain situations. They also recharge in minutes when compared to lithium ion and other batteries.

Nano Batteries

Today, there are many batteries and power generation devices that take advantage of molecular manipulation to create lattices, honeycombs, and other patterns that accelerate energy flow, or achieve some other goal.

Nano technology is also being used to create new materials that have characteristics that are very different from the parent material by virtue of how the atoms and molecules are arranged. This is distinctly different from chemical reactions that cause an exchange of electrons, or replace atoms and

molecules for others of interest.

Many batteries are using these materials for making batteries, but the battery itself is not necessarily referred to as a “nano battery”. Rather, this designation is meant for batteries that are made up of tiny batteries that are joined together to make a larger battery. They tend to be more efficient and charge faster because the electrons do not have to travel as far.

If you are interested in the smallest possible size battery with the largest amount of power, nano batteries should be at the top of your list. Perhaps at some point, nano technology will even provide some answers for EMP proofing and deliver a battery that will not be damaged if an attached device transfers the pulse to it.

3. DIY Smaller Modules Using Simple Systems

If you build these batteries correctly, they can produce anywhere from 1 to 12 volts, which makes them comparable to small scale pre-fab batteries.

These batteries will be the best for long term prepping as you will be able to make them from scavenged materials in nature as well as from junk piles or other locations. Their main drawback revolves around the need for trial and error as well as the limitations on the amount of electricity you can store with them.

As with small scale pre-fab batteries, you may need to make smaller power generation systems such as CD Tesla Turbines or other devices that will generate smaller amounts of electricity that can be combined to power larger devices.

Flywheel Battery

Unlike conventional batteries, a flywheel battery stores mechanical energy instead of electricity. Since many power generators rely on mechanical motion to produce electricity, you should be able to do the same with a flywheel system.

Aside from being able to build these batteries from many different materials, you can also adapt them to different sizes. This includes expanding to large scale batteries.

Other Mechanical Batteries

Twisting ropes, variations of the ancient Chinese Trip Hammer, and even springs can be used to store mechanical energy and then convert it to electricity when needed.

Electrolyte Batteries

Salt water, and many other electrolyte solutions can be used to make wet cell batteries that will store and release electricity.

These batteries may require a good bit of maintenance, and you will always have to be concerned with replacing the electrolyte once it breaks down.

Even though you can also scale these batteries to larger sizes, it may not be worthwhile because of electrolyte availability, or what it will take to produce more.

Natural Batteries

Potatoes, lemons, mud, and even copper pennies can be used to generate and store electrical charges. Even though these batteries won’t last for very long or generate much electricity, they can be used in an emergency situation.

Video first seen on Two-Point-Four.

Leyden Jar

You can make a Leyden Jar from little more than a glass jar and some tin foil. Even though the Leyden Jar seems primitive by modern standards, it can still build up thousands of volts of electricity and work reliably for years on end.

You can also add salt water to the Leyden Jar to increase the amount of electricity it can store. Unlike other batteries, you store and concentrate static electricity to make it of use for a wide range of applications.

Aluminum Graphite Batteries

These batteries do not hold as much electricity as lithium ion batteries, but you may be able to make them from scavenged parts.

Since they recharge faster, you may also find them useful for low drain devices and other applications. Because these batteries do recharge very quickly, researchers are looking for ways to bring them to the market.

4. DIY Larger Scale Batteries

Contrary to popular belief, you don’t need to spend thousands of dollars on batteries that will power a household. Here are two battery types that you can build from scraps that will last for years and serve your needs well.

Even though it will take some hard work to set them up, it will be well worth the effort. Unlike pre-fab batteries, these will last a long time, require little or no maintenance, and are very easy to refill or repair as needed.

Earth Batteries

These batteries are some of the easiest and most versatile batteries that you can make from scavenged material and a place to bury it.

All you need is some soil, two different kinds of metal, and some wire. You can build small versions of Earth Batteries in ice cube trays, or larger ones in your backyard.

Video first seen on MrTeslonian

If you want to increase the yield from these batteries, just add salt water or some other electrolyte. Insofar a ease of building, you will find that no complex tools are required.

They are also very easy to repair and fairly easy to maintain. Start off with a small version and then put several of them together before creating underground versions.

Salt Water Batteries

While salt water batteries were available on the market, the company that made them, Aquinon, filed bankruptcy earlier this year. It is difficult to say at this time if salt water batteries will continue to be available on the market. It is also very hard to say how useful or durable a DIY version of a salt water battery will be.

That being said, if you live near an ocean or have access to plenty of salt, this may be a good option for you to pursue.

5. Highly Unconventional DIY Batteries

Chances are, if you are a fan of Nikola Tesla, then you know that he was working on finding ways to generate electricity

from the Earth. He was also very interested in transmitting electricity through the air.

While Earth Batteries may be far weaker than what Tesla envisioned, modern researchers are making some headway on transmitting electricity through the air. For example, devices exist now that utilize ultrasound, which is then converted to sound signals, and then transmitted to a receiver.

The receiver converts the sound to electricity, which powers the device. If you do some research, you will find many devices that work on similar principles, yet have never made it to the consumer markets. As such, you can adapt these ideas for your own use and see what you can come up with.

Each year, it seems like the types of batteries for off grid power usage expand in some interesting ways. Not so long ago, your choices were limited to Edison, FLA, and Lithium Ion Batteries.

Today, you can still take these batteries into consideration, or you can pursue DIY and unconventional models that will also serve your needs at a lower cost.

This article has been written by ***Carmela Tyrell*** *for Survivopedia.*

Further Reading

http://www.pocket-lint.com/news/130380-future-batteries-coming-soon-charge-in-seconds-last-months-and-power-over-the-air

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