Residential battery storage

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Are residential storage batteries a wise choice? The answer is, “It depends.” Canary Media, in cooperation with EnergySage, has put together a helpful guide that lists seven questions every homeowner needs to ask before making a decision to add a residential storage battery to their home.

Although lead-acid batteries will work (many CleanTechnica readers use them), either NMC or LFP lithium-ion batteries are the most popular choice. NMC is the most common battery chemistry, but LFP is gaining popularity. LFP batteries are less energy dense but have a lower risk of fire and have a longer service life — up to 20 years of daily use — and can be installed indoors with little to no risk. Lithium-titanate (LTO) batteries are fairly new to the market. They are more expensive but are reputed to be safer and have a longer useful life than LFP batteries.

Give careful consideration to where you will install the battery. Some have enclosures that are not rated to withstand the elements and need to be placed indoors. For batteries installed outdoors, do not put them in direct sun, which could make them overheat. The local environment may also influence what battery you choose and where you plonk it. If you live near the beach, saltwater can corrode a battery"s casings, voiding the warranty. Other batteries can"t handle the high altitudes of the Rocky Mountains. An experienced installer is your best guide to where your battery should go.

Fortunately, there are ways to reduce the cost of a backup battery system. It is now eligible for a federal 30 percent tax credit, even if there is no rooftop solar system involved. That credit can be rolled over to subsequent tax years until it is fully utilized. Many utility companies also have special programs if you are willing to let them use your battery to help stabilize the grid or send power back to them when the grid is under stress.

In the age of solar power, home battery backup systems provide safe and reliable energy security. As an advanced alternative to traditional backup systems, like gas and diesel generators, home batteries can increase your home"s energy independence in routine times and during emergencies. Having your own energy storage can decrease your property"s electricity costs and carbon emissions.

Home battery backups have debuted from many global manufacturers and are now being paired with home solar panels more frequently than ever before. This momentum is largely due to diminishing product costs, and battery prices are expected to continue falling through the end of the decade.

In the US, 14% of new solar systems had energy storage backup included in 2023. The number is expected to rise to 25% in 2024 according to research by Wood Mackenzie. From the fourth quarter of 2022 to the fourth quarter of 2023, battery installations rose 46%.

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