Large battery cheap residential storage

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Battery storage is the fastest growing market segment in solar, creating new markets as well as solar retrofit expansion opportunities across the USA for renewable projects large and small. Batteries allow the solar array to maximize savings on the electric bill and provide backup power during grid outages. Every offgrid solar array includes a battery, but an increasing number of grid-tied customers find them valuable as well. Energy independence has never been easier to achieve - even when the home remains connected to the grid.

Residential battery storage is necessary for a solar-powered home to remain operating during grid outages and will also work at night. But also, solar batteries improve system economics by storing solar electricity which would otherwise be sold back to the grid at a loss, only to redeploy that electricity at times when electricity is most expensive. Household battery storage secures the solar owner from grid outages and protects the system economics against changes in utility rate structures.

Homeowners expect their solar arrays to work during power outages, and adding a battery makes sure that customer expectations are satisfied. It also protects the customer against future changes to electric rate structures.

Home battery storage projects start at $20k and can get more expensive from there. Add in solar, and quality solar battery storage system cost by licensed professionals can start at $35k and can exceed $100k for whole house off-grid capability. Proper understanding of battery system design is critical in delivering a project that meets client expectations within budget.

Not all battery storage technology is equal - this section and each sub item below should explain what is worth considering when determining what battery technology to go with for one"s home.

Many lithium home battery storage systems come with ten year warranties, but not all come with throughput warranties that allow for full daily cycling within warranty term. It is particularly important for users with variable rate structures or those who lack net-metering to be able to use their battery daily, rather than solely as backup. Likewise battery cycles are difficult to track - a throughput warranty based on kilowatt hours is a better defined warranty.

The fire safety aspect is important as well - lithium iron phosphate combusts at a substantially higher temperature than lithium cobalt. The longer life and increased fire safety are the primary reasons lithium iron phosphate is preferred over lithium cobalt.

Ease of installation is also important. A larger battery can eliminates the need for combining smaller batteries together in the field. But smaller batteries offer more flexible installation options, which may justify the increased installation cost.

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The advent of new energy market technologies like Lumin have introduced a new hardware that can hook up to any electrical system. "Smart circuits" like Lumin can benefit any home battery system, especially one as robust as Fortress where whole home battery backup can become a reality by making the circuits that feed the batteries smarter.

Batteries with ten year warranties are protected against a variety of inrush and overcurrent scenarios as well as voltages fluctuation, through its internal battery management system. Ultimately the battery needs to be sized correctly for both total storage capacity as well as instantaneous power draw to ensure long-term, reliable performance. A common design error is to put too small a battery on too large a load, such as when designing a short duration, whole house backup system.

Batteries can degrade by exposure to moisture, dust, and temperature extremes. However, space constraints can still force the batteries outdoors. Luckily, home energy storage can be installed both indoor and outdoors.

When installing outdoors, it is important to consider the environmental rating of the battery itself. While the installers should do what they can to protect the battery, an IP65 rating means the battery can tolerate direct water spray and be installed in a dusty location. When installing indoors, protected locations inside the garage can offer easy access for larger batteries, whereas smaller batteries are more flexible for wall mounting in hard to reach locations such as basements.

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