

SOLAR WORKGROUP

of Southwest Virginia

Solar + Battery Storage for SWVA

Many solar energy systems are now installed with a battery storage system. Battery storage can add to the value of a solar energy installation by providing additional services to both the on-site customer and the electricity grid.

Benefits of Solar + Battery Storage:

Energy Resiliency

By installing a solar + battery storage system, customers can become “energy resilient.” Energy resiliency is the ability to maintain energy usage during outages caused by extreme weather or common utility line disconnections. Solar systems installed without storage typically shut off automatically during a power outage to prevent energy from going back onto the grid, which can be dangerous for utility workers. Installing a battery with solar allows a customer’s system to disconnect from the grid and operate independently. Therefore, a solar + battery storage installation allows customers to maintain the usage of critical equipment at night or at other times that solar power is not being generated. This can be a huge benefit to residents, commercial buildings and community shelters alike.

Load management

For large buildings, the cost of energy is not just measured by how much is used, but by when and how fast it is used. Commercial and industrial buildings can consume large amounts of energy at times of high electricity demand on the overall grid, so utilities often add a “demand charge” that is based on a customer’s highest rate of electricity usage during a specific length of time. Solar + storage systems can reduce these demand charges by storing energy generated from solar during the day and using that electricity during high-demand times to reduce the customer’s demand from the grid. This means that the customer has a reduced energy burden on the grid as well as a significantly lower energy bill.

Off-grid potential

Many people take pride in their self-reliance, and being independent from one’s utility is a strong way of displaying that self-sufficiency. Though costly, for some customers, going off-grid with solar + storage may be a viable way of getting off the utility’s system and becoming energy independent. By generating and using your own solar energy, you ensure that your home is completely powered by renewable green energy while avoiding monthly utility connections fees.



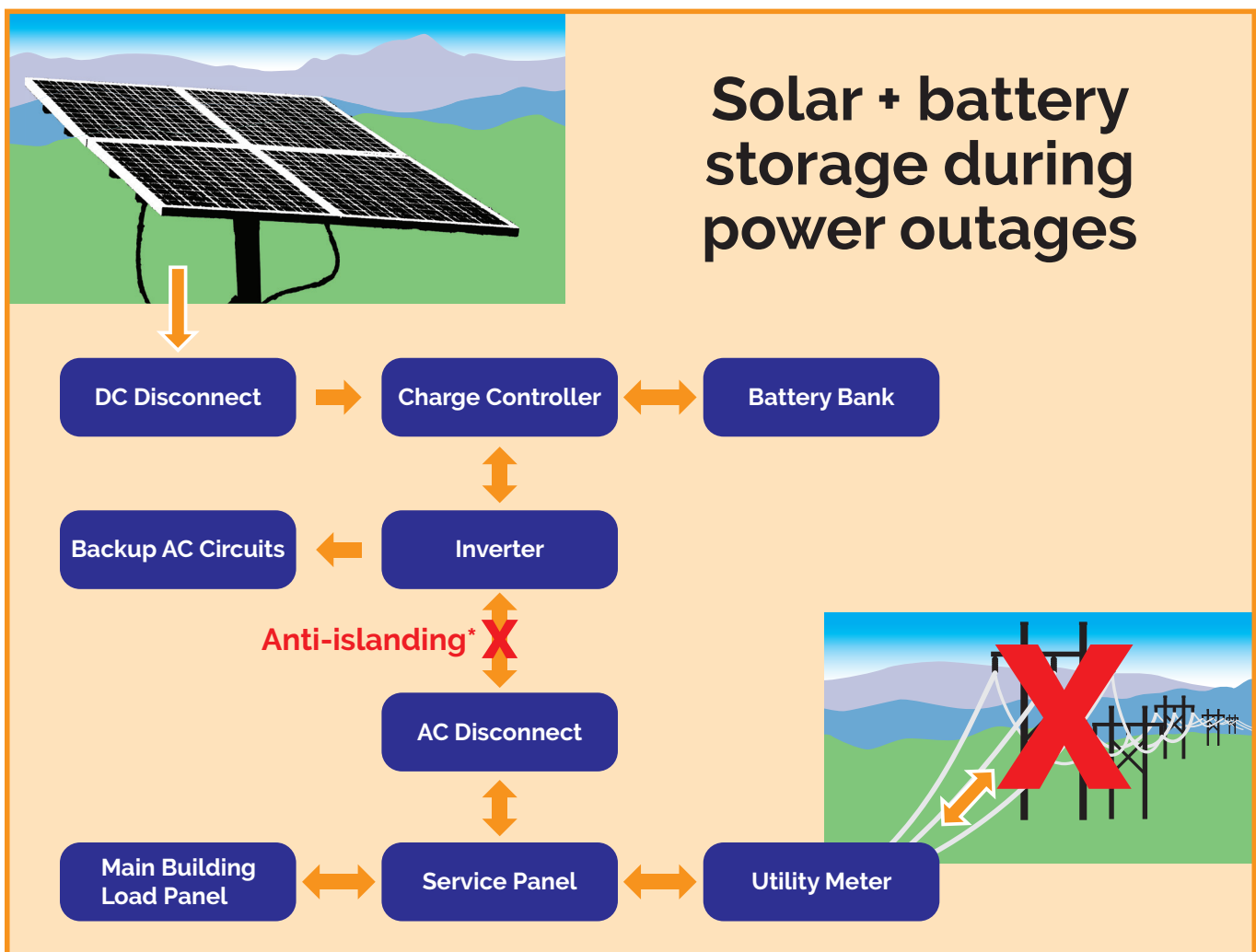
Considerations:

Cost

Having an economic solar + storage system requires taking into careful consideration the solar and battery system size, electricity demand, and utility rates and charges. Lithium-ion battery prices have declined more than 80% over the past 10 years but remain more cost-prohibitive than solar panels at this time. Because of the price of batteries, customers must work closely with project developers to carefully consider cost factors to ensure that the system has a promising return on investment.

Maintenance

On average, batteries used in solar + storage systems last up to half of the life of the solar panels. This means that during the 30-year lifespan of a solar system, you will likely need to replace the battery at least once. This increases the cost of the system and should be considered when determining the system's return on investment. Contracts for solar + storage systems will specify maintenance needs, costs, and responsibilities.



*Inverter must have an "anti-islanding" function to prevent electricity from flowing onto the grid from the solar panels when utility workers are working on the grid