Solar power plus storage cost

Solar power plus storage cost

Cost to install solar panels and battery storage

A solar-plus-storage system costs about $25,000-$35,000, depending on the size ...

The PV-plus-battery technology uses the same 10 resource categories as the utility-scale PV technology. See the Resource Categorization section of the utility-scale PV page for a description of these 10 resource categories.

Technology innovation scenarios for PV-plus-battery are a combination of utility-scale PV and utility-scale battery technology innovation scenarios (e.g., the Conservative Scenario for PV-plus-battery technology uses the Conservative Scenarios of both utility-scale PV and utility-scale battery technologies). For details, see the scenario descriptions for utility-scale PV and the scenario descriptions for utility-scale battery storage.

Components of a DC-coupled PV-plus-battery system

Source:(Ramasamy et al., 2021)

This section describes the methodology to develop our reported CAPEX, O& M, and capacity factor values. For assumptions that are standardized for all technologies in the 2022 ATB, seelabor cost,regional cost variation,materials cost index,scale of industry,policies and regulations, andinflation.

Utility-scale PV-plus-battery projections are driven primarily by CAPEX cost improvements, along with improvements in energy yield, operational cost, and cost of capital (for the Market + Policies Financial Assumptions Case). For more information, see the Financial Cases and Methods page.

Though CAPEX is one driver of cost reductions over time, R& D efforts continue to focus on other areas to lower the cost of energy from utility-scale PV-plus-battery, such as longer system lifetime and improved performance. Three 2030 projections are developed for scenario modeling as bounding levels:

A primary motivation for utility-scale PV-plus-battery systems is the potential for the battery component to qualify for the federal investment tax credit (ITC). The battery component"s ability to qualify for the ITC (partially or fully) affects both its costs and its capacity factor, so we briefly describe its application here.

We assume 75% of the energy used to charge the coupled 4-hour battery storage (on an annual basis) is derived from the local PV, which corresponds to the minimum charging requirement for the battery component"s ITC qualification. We assume only partial (as opposed to full) ITC qualification in order to represent a more realistic capacity factor over the lifetime of a project--ITC-related operational requirements

apply only to the first 5 years of operations, after which charging from the grid may represent an important source of value. Following from this assumption, LCOE projections under the Market + Policies Financial Assumptions Case reflect capital cost savings and financing terms shown in the following figure and capacity factors that follow from our charging assumptions.

ITC qualification of PV-plus-battery systems

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