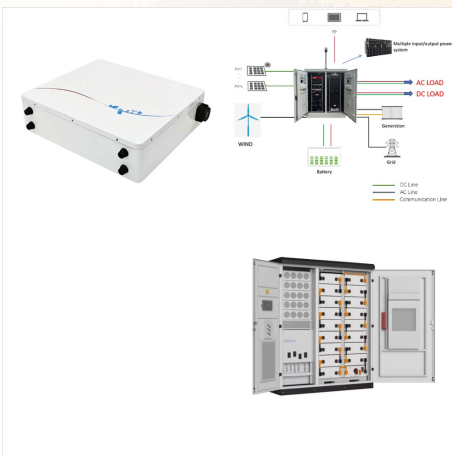




??? Pump Storage Hydropower (NREL) ??? In the US, there are currently 40 pumped storage plants in operation with a combined capacity of 22 GW, accounting for 95 percent of all energy storage capacity in the ??? Renewable Energy Investment Tax Credit (ITC) ??? U.S. Department of Treasury ??? Renewable Energy Grants (Section 1603)



NREL's Solar Plus Storage Techno-Economic Analysis Portfolio. shown on the top in addition to the kilowatt-hours shown is any incentives that can be monetized like tax credits are relevant in the U.S. for Year 1. Also, depreciation incentives using a tax shelter there can have benefits for PV systems. Higher energy yield is going to



carbon capture, utilization, and storage (CCUS) credit ??? "Base" \$17/ton Bonus ITC: 40. 0: 3.00 * = 1992 dollars ** = 2022 dollars. ITC = investment tax credit. PTC = production tax credit. NREL | 14. Example Systems that Have Been or (2) provide a high-level overview of NREL's hybrid energy systems research and capabilities, and

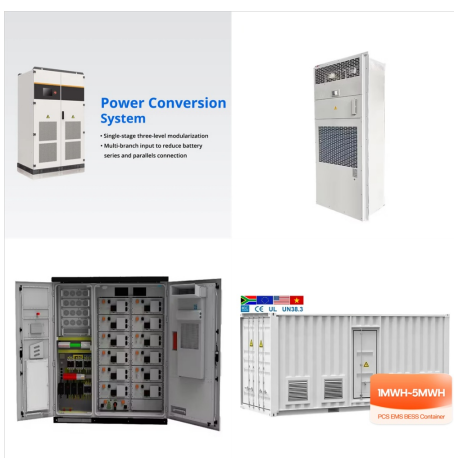
NREL ENERGY STORAGE TAX CREDIT



Though projects receiving tax credits might have lower leverage, and thus a higher WACC, they benefit from the tax credits, which overall, reduce the LCOE. Likewise, Wind Speed Class 1 would have a higher WACC than Wind Speed Class 10, but that is because the cost of energy of Wind Speed Class 10 is much higher, and so can support a higher



The analysis does not provide policy guidance but represents policy using preliminary assumptions made prior to the release of proposed regulations for the tax credit. In the first scenario, an offshore wind plant generated electricity that was transmitted via high-voltage cables to an onshore site.



Impacts of Tax Credit Extensions. Prospective RPS Cost, Benefits, and Impacts. Standard Base year costs and performances estimates are data obtained from NREL's 2020 Cost of Wind Energy study (Stehly and Duffy 2022). Utility, residential, and commercial Costs for utility -scale battery energy storage systems (BESS) are based on a

NREL ENERGY STORAGE TAX CREDIT



The tax credit transfer market for renewable energy projects unlocked by the US Inflation Reduction Act (IRA) has started to thrive as predicted with several types of deal, including innovative



The study is structured around two scenarios to evaluate the potential impacts of both laws on the power sector: 1) No New Policy: A counter-factual scenario that reflects all Federal and state policies enacted as of September 2022, with exception to IRA and BIL, and assumes load growth consistent with the Energy Information Administration's

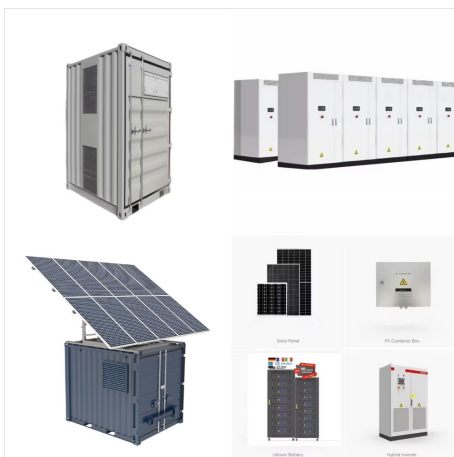


Units using capacity above represent kW AC.. 2024 ATB data for utility-scale solar photovoltaics (PV) are shown above, with a base year of 2022. The Base Year estimates rely on modeled capital expenditures (CAPEX) and operation and maintenance (O& M) cost estimates benchmarked with industry and historical data.Capacity factor is estimated for 10 resource ???

NREL ENERGY STORAGE TAX CREDIT



Deployment-Related Tax Credits. The . residential clean energy credit (25D) can be taken on the costs of a residential solar PV system installed during the tax year. - This includes PV panels, balance-of-system equipment (such as racking or inverters), installation costs (including permitting fees and inspection costs), sales tax on eligible .

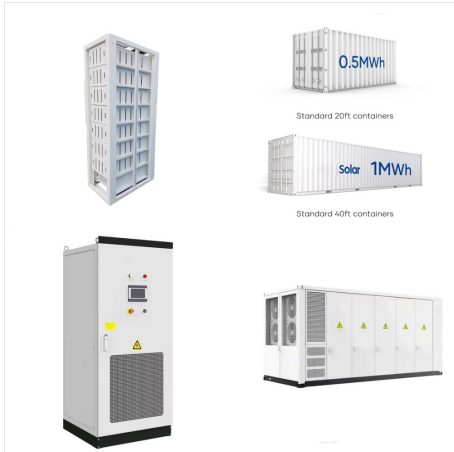


The U.S. Treasury Department issued a notice of proposed rulemaking Dec. 14, 2023, for the Internal Revenue Code (IRC) Section 45X Advanced Manufacturing Production Tax Credit (PTC), created under the Inflation Reduction Act of 2022 to bolster domestic production of equipment, components and critical materials related to clean and renewable energy.



Long-Duration Energy Storage: Resiliency for Military Installations Jeffrey Marqusee, Dan Olis, Xiangkun Li, and Tucker Oddleifson National Renewable Energy Laboratory Suggested Citation Marqusee, Jeffrey, Dan Olis, Xiangkun Li, and Tucker Oddleifson. 2023. Long-Duration Energy Storage: Resiliency for Military Installations. Golden, CO

NREL ENERGY STORAGE TAX CREDIT



First Report Outlines Four Phases of Utility-Scale Energy Storage Deployment, Providing a Potential Roadmap to 100+ Gigawatts of Installed Capacity in the United States SFS project lead and group manager of the Distributed Systems and Storage Group in NREL's Strategic Energy Analysis Center. "The Storage Futures Study" specifically this



provisions within the Inflation Reduction Act, including: labor rules, bonus credits (1,2,3), direct payment, and transferability of the Investment Tax Credit (ITC) and Property Tax Credit (PTC), as well as the Advanced Energy Project Credit (48C). At the end of 2022, more than 263,000 U.S. employees spent most of their time on solar.



The Inflation Reduction Act modifies and extends the clean energy Investment Tax Credit to provide a 30 percent credit for qualifying investments in wind, solar, energy storage, and other

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Units using capacity above represent kW AC.. 2023 ATB data for utility-scale solar photovoltaics (PV) are shown above, with a Base Year of 2021. The Base Year estimates rely on modeled capital expenditures (CAPEX) and operation and maintenance (O& M) cost estimates benchmarked with industry and historical data. Capacity factor is estimated for 10 resource ???

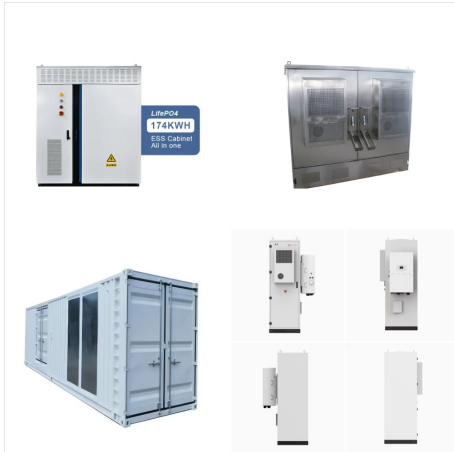


-3000 ??? The Potential for Energy Storage to Provide Peaking Capacity in California under Increased Penetration of Solar Photovoltaics Paul Denholm and Robert Margolis . 3 The Need to Analyze Energy Storage's Capacity Credit under Increasing Storage and PV



provide a 30 percent credit for qualifying investments in wind, solar, energy storage, and other renewable energy projects that meet prevailing wage standards and employ a sufficient The Inflation Reduction Act modifies and extends the Renewable Energy Production Tax Credit to provide a credit of 2.5 cents per kilowatt-hour in 2021 dollars

NREL ENERGY STORAGE TAX CREDIT



Units using capacity above represent kW DC.. 2024 ATB data for commercial solar photovoltaics (PV) are shown above, with a base year of 2022. The base year estimates rely on modeled capital expenditures (CAPEX) and operation and maintenance (O& M) cost estimates benchmarked with industry and historical data. The 2024 ATB presents capacity factor estimates that encompass ???



fuel generators and energy storage. We capture the impact of existing federal tax credits, including the 40% investment tax for energy communities detailed in the main report, but assume no other changes to state or federal policies. We assume load growth resulting from



The Energy Community Tax Credit Bonus within IRA offers an additional benefit of either up to 10% production credits or an increase of 10 percentage points for investment credits. This bonus is specifically applicable to projects, facilities, and ???

NREL ENERGY STORAGE TAX CREDIT



levels of renewable energy from variable renewable energy (VRE) sources without new energy storage resources. 2. There is no rule-of-thumb for how much battery storage is needed to integrate high levels of renewable energy. Instead, the appropriate amount of grid-scale battery storage depends on system-specific characteristics, including:



Definitions Parameters Levelized Cost of Energy. Levelized cost of energy (LCOE) is a summary metric that combines the primary technology cost and performance parameters: capital expenditures, operating expenditures, and capacity factor is useful for discussing technology advances that yield future projections because it illustrates the combined effect of the primary ???



ReEDS modeling and analysis team at the National Renewable Energy Laboratory (NREL) was active in developing and testing the ReEDS model version 2020. We also acknowledge the vast CAES compressed-air energy storage . CAIR Clean Air Interstate Rule . PTC production tax credit . PV photovoltaic . RCP representative concentration pathway .