

# LATEST ENERGY STORAGE INVESTMENT COST FORECAST



How will record electricity prices affect the residential storage market? Record electricity prices are forcing consumers to consider new forms of energy supply, driving the residential storage market in the near term. The significant utility-scale storage additions expected from 2025 onwards align with the very ambitious renewable targets outlined in the REPowerEU plan and a renewed focus on energy security in the UK.



What will energy storage be like in 2024? In 2024, the global energy storage is set to add more than 100 gigawatt-hours of capacity for the first time. The uptick will be largely driven by the growth in China, which will once again be the largest energy storage market globally.



What is the growth rate of industrial energy storage? The majority of the growth is due to forklifts (8% CAGR). UPS and data centers show moderate growth (4% CAGR) and telecom backup battery demand shows the lowest growth level (2% CAGR) through 2030. Figure 8. Projected global industrial energy storage deployments by application



Is large-sized energy storage a good investment? The overall installed capacity in the United States continued to exhibit steady quarter-by-quarter growth. In the realm of the U.S. energy storage market, the spotlight is on large-sized energy storage, renowned for its impressive economic viability and diverse profitability models, offering substantial potential.



Which energy storage technologies are included in the 2020 cost and performance assessment? The 2020 Cost and Performance Assessment provided installed costs for six energy storage technologies: lithium-ion (Li-ion) batteries, lead-acid batteries, vanadium redox flow batteries, pumped storage hydro, compressed-air energy storage, and hydrogen energy storage.

# LATEST ENERGY STORAGE INVESTMENT COST FORECAST



What drives energy storage investment? Much of the growth in energy storage investment is being driven by mandates and targeted subsidies, ranging from solar and wind co-location mandates in China, to the Inflation Reduction Act and state-level policies in the US. New support schemes are also emerging across Europe, Australia, Japan, South Korea, and Latin America.



This year's Outlook comes against a backdrop of escalating risks in the Middle East and heightened geopolitical tensions globally, and explores a range of energy security issues that decision makers face as they proceed with clean energy transitions. With rising investment of clean technologies and rapid growth in electricity demand, the WEO



Therefore, despite lower fuel costs, average US retail electricity prices are forecast to rise 1.9% YoY by year-end 2023. 6 For the residential segment, the YoY price jump could be even higher???at about 4.7%???and that follows a roughly 10% increase in 2022.



The New Energy Outlook presents BloombergNEF's long-term energy and climate scenarios for the transition to a low-carbon economy. Anchored in real-world sector and country transitions, it provides an independent set of credible scenarios covering electricity, industry, buildings and transport, and the key drivers shaping these sectors until 2050.

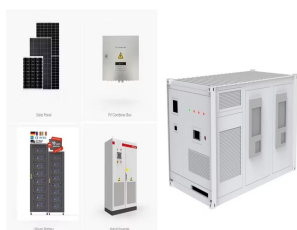


Bloomberg New Energy Finance significantly increases its behind-the-meter energy storage forecast. attracting \$620 billion in investment over the next 22 years. BNEF's latest Long-Term Energy Storage Outlook sees the capital cost of a utility-scale lithium-ion battery storage system sliding another 52% between 2018 and 2030, on top of the

# LATEST ENERGY STORAGE INVESTMENT COST FORECAST



The Energy Storage Technology and Cost Forecast (ESTAC) is a biannual report for which PVEL and Exawatt/CRU have jointly developed a methodology that leverages bottom-up cost analysis, based on data gathered from more than 180 publicly traded companies throughout the lithium-ion cell supply chain, combined with a manufacturing model that contains over 100 ???



Latest trends in energy storage | 2019 . ENERGY STORAGE MONITOR (ESM) 1 ABOUT THE FUTURE ENERGY LEADERS -FEL- Cost Comparison and Forecast 13 3. Available financial tools 14 CHAPTER 4: 15 REGULATORY FRAMEWORK 15 crippling investment. Energy storage systems provide different functions to their owners and the grid at



This is reflected in our Key Projects Data (KPD), where costs for planned BESS are lower than pumped-hydro storage and Compressed Air Energy Storage (CAES) technologies. The average cost of BESS projects with planned completion dates between 2024 and 2028 is around USD270/kW, compared to USD1,100/kW for pumped hydropower and USD1,350/kW ???



Future Years: In the 2024 ATB, the FOM costs and the VOM costs remain constant at the values listed above for all scenarios. Capacity Factor. The cost and performance of the battery systems are based on an assumption of approximately one cycle per day. Therefore, a 4-hour device has an expected capacity factor of 16.7% ( $4/24 = 0.167$ ), and a 2-hour device has an expected ???



The report analyzes the battery energy storage market in terms of value and volume, classified by various technologies for the period 2018-2027 with a specific focus on installations up to 2018

# LATEST ENERGY STORAGE INVESTMENT COST FORECAST



3 ? November 11, 2024. InfoLink Consulting ??????,??????. ???



Rystad Energy, "Claims of underinvestment in the global oil and gas industry are overblown amid efficiency gains," press release, July 6, 2023. View in Article; IEA, World energy investment 2023, October 2023. View in Article; Deloitte analysis of data from Rystad Energy's Ucube database, accessed September 2023. View in Article



Battery energy storage ??? a fast growing investment opportunity  
Cumulative battery energy storage system (BESS) capital expenditure (CAPEX) for front-of-the-meter (FTM) and behind-the-meter (BTM) commercial and industrial (C& I) in the United States and Canada will total more than USD 24 billion between 2021 and 2025.



The North America and Western Europe (NAWE) region leads the power storage pipeline, bolstered by the region's substantial BESS segment. The region has the largest share of power storage projects within our KPD, with a total of 453 BESS projects, seven CAES projects and two thermal energy storage (TES) projects, representing nearly 60% of the global ???



The emergence of Storage as a Service models are anticipated, allowing businesses to access the benefits of energy storage without upfront costs. This innovative financial model will allow manufacturers to retain ownership and full visibility of their batteries through the entire life cycle, ensuring compliance with their environmental obligations whilst still realising ???

# LATEST ENERGY STORAGE INVESTMENT COST FORECAST



Battery energy storage systems (BESS) will have a CAGR of 30 percent, and the GWh required to power these applications in 2030 will be comparable to the GWh needed for all applications today. China could account for 45 percent of total Li-ion demand in 2025 and 40 percent in 2030???most battery-chain segments are already mature in that country.



This report updates those cost projections with data published in 2021, 2022, and early 2023. The projections in this work focus on utility-scale lithium-ion battery systems for use in capacity ???



Capital cost of utility-scale battery storage systems in the New Policies Scenario, 2017-2040 - Chart and data by the International Energy Agency. Analysis and forecasts to 2030. Fuel report ??? October 2024 The Energy Mix. Get updates on the IEA's latest news, analysis, data and events delivered twice monthly.



In the main case forecast in this report, almost 3 700 GW of new renewable capacity comes online over the 2023???2028 period, driven by supportive policies in more than 130 countries. Solar PV and wind will account for 95% of global renewable expansion, benefiting from lower generation costs than both fossil and non???fossil fuel alternatives.



: To capture renewable energy gains, Africa must invest in battery storage. 11 Oct 2024: The crucial role of battery storage in Europe's energy grid. 8 Oct 2024: Germany could fall behind on battery research ??? industry and researchers. 4 Oct 2024: Large-scale battery storage in Germany set to increase five-fold within 2 years

# LATEST ENERGY STORAGE INVESTMENT COST FORECAST



Browse our energy storage market reports at Wood Mackenzie to identify opportunities and empower your strategic decisions. Visit the store online. Europe energy storage investment outlook 2024. This report analyses the cost of lithium-ion battery energy storage systems (BESS) within Europe's grid-scale energy storage segment



High financing, balance of plant, labor, and land costs outweighed commodity and freight price falls in 2023, pushing up the levelized costs of energy (LCOEs) for wind and utility-scale solar, especially projects with trackers that account for 80% of installed solar capacity. 7 Inflation and interest rates disproportionately impacted offshore

## Commercial and Industrial ESS

- Air Cooling / Liquid Cooling
- Single-Phase Solution
- Removable Energy Integration
- Modular Design for Flexible Expansion



3 ? InfoLink has released its Supply Chain Price and Cost Forecast Report, a crucial resource designed to support companies in the fast-evolving global energy storage market. In ???



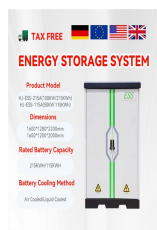
We used data-driven models to forecast battery pricing, supply, and capacity from 2022 to 2030. EV battery prices will likely drop in half. of an automotive cell is likely to fall from its 2021 high of about \$160 to \$80 by 2030, driving substantial cost reductions for the use of battery systems to provide energy storage and demand



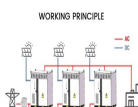
By Nelson Nsitem, Energy Storage, BloombergNEF. The global energy storage market almost tripled in 2023, the largest year-on-year gain on record. Growth is set against the backdrop of the lowest-ever prices, especially in China where turnkey energy storage system costs in February were 43% lower than a year ago at a record low of \$115 per



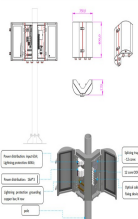
# LATEST ENERGY STORAGE INVESTMENT COST FORECAST



Energy storage system costs stay above \$300/kWh for a turnkey four-hour duration system. In 2022, rising raw material and component prices led to the first increase in energy storage system costs since BNEF started its ESS cost survey in 2017. Costs are expected to remain high in 2023 before dropping in 2024.



D. Feldman, et al., "U.S. Solar PV System and Energy Storage Cost Benchmark," NREL/TP-6A20-77324 (2021). Each tracker has a horizontal axis of rotation with a north-south orientation, providing east-to-west tracking of modules mounted to occupy a single geometric plane. Trackers are spaced to avoid excessive inter-row shading.



1 ? Cornwall Insight: October Ofgem energy price cap hike "a blip"  
Commenting on its latest set of predictions, the energy consultancy said the 10% rise in bills under the current price cap appeared



The market for battery energy storage systems is growing rapidly. Commercial and industrial (C& I) is the second-largest segment, and the 13 percent CAGR we forecast for it should allow C& I to reach between 52 and 70 GWh in annual additions by 2030. backup applications, and the provision of grid services. We believe BESS has the



- TELECOM CABINET
- BRAND NEW ORIGINAL
- HIGH EFFICIENCY

Assess the global energy storage outlook with our comprehensive forecasts. Evaluate emerging trends, business opportunities and market challenges with cutting-edge data. We're here to support decision-making with unrivalled ???

# LATEST ENERGY STORAGE INVESTMENT COST FORECAST



As part of the U.S. Department of Energy's (DOE's) Energy Storage Grand Challenge (ESGC), this report summarizes published literature on the current and projected markets for the global ???



Technology costs for battery storage continue to drop quickly, largely owing to the rapid scale-up of battery manufacturing for electric vehicles, stimulating deployment in the power sector. After solid growth in 2022, battery energy storage investment is expected to hit another record high and exceed USD 35 billion in 2023, based on the