

# EUROPEAN ENERGY STORAGE Q1



How much energy storage will Europe have in 2023? Europe has seen its first year when energy storage deployments by power capacity exceeded 10GW in 2023. The eighth annual edition of the European Market Monitor on Energy Storage (EMMES) was published last week by consultancy LCP Delta and the European Association for Storage of Energy (EASE).



How many new battery energy storage systems will be installed in Europe? The latest analysis by SolarPower Europe shows that 17.2 gigawatt hours (GWh) of new battery energy storage systems (BESS) will be installed in Europe in 2023, supplying 1.7 million additional European households with electricity - an increase of 94% compared to 2022.



What is the future of energy storage in Europe? The European energy storage market contracted in 2019 to 1 GWh, with a cumulative installed base of 3.4 GWh across all segments. However, the future of energy storage in 2020 in Europe remains positive as the energy transition progresses.



Are European energy storage systems on the rise? Europe's utility-scale energy storage systems (ESS) are on the rise, boasting a robust revenue model. The European large storage market is starting to shape up. According to data from the European Energy Storage Association (EASE), new energy storage installations in Europe reached approximately 4.5GW in 2022.



How many energy storage projects are there in Europe? The database of over 2,600 projects includes detailed data on current installations by customer segment (residential, C&I and front-of-meter) across 24 European countries, future projects and forecasts to 2030. The Market Monitor is based on the most extensive database of European energy storage projects.

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How important is utility-scale energy storage in Europe? Among these, utility-scale ESS installations accounted for 2GW, representing 44% of the total power. EASE predicts that in 2023, new European energy storage installations will surpass 6GW, with utility-scale ESS installations expected to be at least 3.5GW. This points to the growing significance of utility-scale energy storage in Europe.



Europe's biggest battery storage system earned \$2.3 million (US\$2.85 million) revenues in the first quarter of 2023. data provided as part of Harmony Energy Income Trust's Q1 2023 trading update shows that revenues for 2-hour duration BESS assets in the GB fleet were consistently higher and at times almost double the amount earned by



While US installations look poised to break a metaphorical 10GW ceiling this year for the first time, Europe already did in 2023, with 10.1GW of additions across all segments, according to an edition of the European Market Monitor on Energy Storage (EMMES) published by consultancy LCP Delta and the European Association for Storage of Energy



The latest edition of the U.S. Energy Storage Monitor saw utility-scale storage installations increasing 101% from Q1 2023 to reach 993 MW, with Texas, California and Nevada accounting for 90% of



Six Energy Storage Companies Driving The European Market: Northvolt. Founded in 2016 and based in Stockholm, Sweden, Northvolt is an operator of lithium-ion battery plants intended to produce batteries for variety of solutions, including EVs and battery storage. Why Q1 is the Best Time to Hire: Insights and Strategies for 2024. Darren

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The report tracks the grid-scale (aka utility-scale), commercial and industrial (C& I), including community storage and residential battery storage market segments in the US, with the latest edition published this week covering Q1 2024 numbers and trends. New additions included 993MW/2,952MWh of grid-scale storage, which was a 101% jump from the same ???



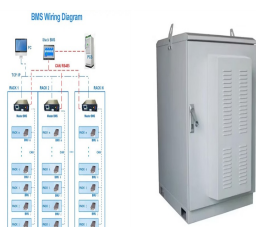
SolarPower Europe has published its new market intelligence report, the European Market Outlook for Battery Storage 2024-2028. The report illustrates the state of play of battery storage across Europe, with updated figures on annual and total installed capacities up to 2023 and a forecast of future installations under three scenarios until 2028.



4 | European Energy M& A and Investment Outlook 2024 Market research  
After a lacklustre start to the year, M& A activity in Western Europe's energy sector is set to pick up the pace. In H1 2023, just USD 12.6bn worth of deals were announced, less than half the USD 29.9bn logged in the same period in 2022. Yet



According to statistics from the European Energy Storage Association (EASE) in 2022, the new installed capacity of energy storage in Europe reached 4.5GW, with large-sized energy storage accounting for 2GW. Breaking it down by regions, the UK market claimed 42% of the large-sized energy storage installations in Europe, solidifying its position



New battery energy storage systems (BESS) could be the solution to constraints in power grids across Europe while also offering an opportunity for investors. Savills preliminary data for Q1 2024 indicates that average European vacancy rates remained stable at 8.4%, prime rents rose by 3.6% YoY, and take-up rose by 2% YoY, buoyed by a

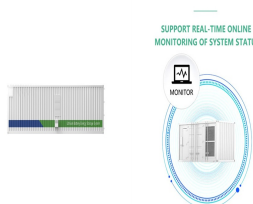
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WoodMac's data reveals that from Q1 to Q2 in 2023, residential storage installations in the U.S. reached 293.2MW/769.4MWh, experiencing a slight 1.9% decrease but a significant 8.5% year-on-year increase. As new energy continues to claim a substantial share of the energy consumption landscape in Europe, the demand for energy storage is



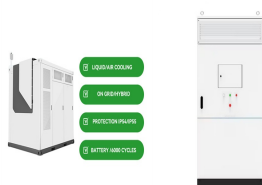
Latest analysis from SolarPower Europe reveals that, in 2023, Europe installed 17.2 GWh of new battery energy storage systems (BESS); a 94% increase compared to 2022. This marks the third consecutive year of doubling the annual market. By the end of 2023, Europe's total operating BESS fleet reached around 36 GWh.



Gross annual capacity additions of energy storage in Europe (MW) 10 EU policy, accelerated renewable buildout and strong fundamental drivers Q1 2019 Q2 2019 Q3 2019 Q4 2019 Q1 2020 Q2 2020 Q3 2020 Q4 2020 Q1 2021 Q2 2021 Q3 2021 Q4 2021 Q1 2022 Q2 2022 Q3 2022 Q4 2022 Americas Asia Pacific EMEA



European Energy saw progress in both power and asset sales in Central and South Europe making the basis for a record quarter. The EBITDA for the company Battery storage; Project sales; AM; PPAs; Innovation; Investors. IR-material; Green financing; Financial calendar; European Energy sold more than 229 GWh of renewable energy in Q1 2022



European Energy inaugurates its first green hydrogen facility. Oct 28, 2024. Press release. European Energy receives EU Innovation Fund grant for Green Methanol facility in Denmark. Oct 23, 2024. Press release. EuroNASCAR and European Energy enter collaboration on renewable energy in motorsports. Oct 21, 2024. Press release. European Energy



Delta-EE's European energy storage market forecasts . A few select national markets are driving the battery energy storage deployments for 2021 and 2022, namely Great Britain, Germany, Ireland and Italy, according to EMMES 6's data. They will account for over three quarters of

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the 5GW-plus battery energy storage deployments this year, as

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The European Energy Storage Association (EASE) predicts that it is expected to continue to grow in the next two years. In the first half of 2024, the installation capacity of the British Big storage was temporarily affected by the pace of the project. According to data, the installed capacity of Q1 energy storage in Italy in 2024 reached



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suitable for seasonal energy storage. High temperature (molten salt or sodium) batteries ??? well-established sodium-sulfur and sodium metal halide batteries, combine high energy and power ???



Their application in European energy storage projects is expected to grow as the technology matures. 4. **\*\*Hydrogen Storage\*\*** Hydrogen is garnering attention as an energy carrier and storage medium. Green hydrogen produced through electrolysis powered by renewable energy is seen as a viable option for long-term energy storage and sector coupling.



Shaniyaa looks into the buildout of battery energy storage in Q1 2024. 184 MW of new capacity becoming operational in Q1 2024, the lowest since Q3 2022. The new capacity came from six new battery energy storage units. These range from 19 MW to 50 MW in rated power and one to two hours in duration.



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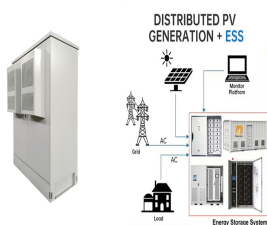
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European energy storage installations will surpass 6GW, with



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Notably, China remains at the forefront of global demand for energy storage. Europe: At the forefront of global energy transformation planning, Europe is gearing up for significant changes. TrendForce anticipates that the new installed capacity of energy storage in Europe will hit 16.8 GW/30.5 GWh in 2024, showing a robust year-on-year growth



This marks the highest storage capacity ever installed in a first quarter in the country, representing an 84% increase from Q1 2023. When compared to the last quarter of 2023, however, the figure



The European region leads the world in planning for the new energy transition, and TrendForce projects that the fresh installed energy storage capacity in Europe will hit 16.8 GW/30.5 GWh in 2024, marking a robust year-on-year growth of 38% and 53%.



??? How can energy storage compete with other resources for specific applications (e.g. resource adequacy)? PLANNED RESEARCH REPORTS ??? Energy Storage System Cost Report ???2019 ??? UK Energy Storage Report ??? European Energy Storage Report ??? Energy Storage Alternative Technology Report ??? Residential Energy Storage Report ???USA ???2020



European renewable power purchase agreement (PPA) prices surged 8.1% in Q1 2022 and 27.5% year-over-year as the effects of the war in Ukraine further deepened the region's energy crisis and



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In three months, 1 GW of renewable energy permits has been secured across several key markets. At the same time, European Energy has successfully grid-connected 182 MW of projects during the quarter compared to 69 MW in Q1 22. For the first six months of 2023, European Energy is expecting to grid connect more than 500 MW of new production capacity.