



Tesla megapack specifications

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The Tesla Megapack is a large-scale rechargeable lithium-ion battery stationary energy storage product, intended for use at battery storage power stations, manufactured by Tesla Energy, the energy subsidiary of Tesla, Inc.

Launched in 2019, a Megapack can store up to 3.9 megawatt-hours (MWh) of electricity. Each Megapack is a container of similar size to an intermodal container. They are designed to be deployed by electric utilities. The energy stored can be used as required, for example during periods of peak electricity demand or when grid power is disrupted.

On April 30, 2015, Tesla announced that it would sell standalone battery storage products to consumers and utilities. Tesla CEO Elon Musk stated that the company's battery storage products could be used to improve the reliability of intermittent renewable energy sources, such as solar and wind.

Tesla acquired a former JC Penney's distribution center in Lathrop, California, in 2021 and converted it into a battery plant called Megafactory, with a target capacity of 40 GWh/year when finished. Next-generation Megapacks use prismatic lithium iron phosphate cells, for example in the 585 MWh Kapolei, Hawaii facility.

Tesla's record energy deployment was achieved in Q1 2023, adding 3.9 GWh in a single quarter, a 360% year-over-year increase.

Each Megapack comes with a 15-year "no defect" and "energy retention" warranty. A 10 or 20 year "performance guarantee" is available for an additional cost. Once a Megapack has reached the end of its useful life, Tesla says they can be returned for recycling.

Megapacks are pre-assembled, including "battery modules, bi-directional inverters, a thermal management system, an AC main breaker and controls."

Tesla requires customers to purchase a maintenance service agreement. Each Megapack receives a minor annual service, and a major service every ten years. The annual maintenance includes inspections and cleaning. The ten-year maintenance includes activities such as replacing the pump and fan for the thermal management system and refilling the coolant fluid. Maintenance is expected to take about an hour per Megapack.

The Megapack thermal management system is located at the top of each unit. It uses coolant fluid, made of an equal-parts mixture of ethylene glycol and water, to keep the battery at operating temperature.

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Each Megapack weighs approximately 51,000 pounds (23,000 kg) and the enclosure is built to a similar size as an intermodal container and includes twistlock fittings to allow automated handling.

Megapacks are designed for large-scale energy storage. Megapacks are used by utilities to replace peaker power plants,[20] which generate energy during periods of peak demand. Megapacks store grid energy rather than generating it from fuel.[21]

Powerpacks continue to be used by utilities to meet smaller-scale grid energy storage requirements. For example, a 25 MW / 52 MWh deployment of Powerpacks is in use at the Lake Bonney Wind Farm in South Australia.[22]

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