

North America Thermal Energy Storage Market Forecast to 2030 – Regional Analysis – by Technology (Sensible Heat Storage, Latent Heat Storage, Thermochemical Storage), Storage Material (Water, Molten Salt, PCM, Others), Application (Power Generation, Process Heating and Cooling, District Heating and Cooling), and End User (Utility, Nonutility)

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Abstracts

The North America thermal energy storage market is expected to grow from US\$ 4,716.91 million in 2022 to US\$ 7,179.17 million by 2030. It is estimated to grow at a CAGR of 5.4% from 2022 to 2030.

Rising Renewable Energy Share Fuels North America Thermal Energy Storage Market

The revolution of the global energy system following the Paris Agreement which was introduced in 2015 and entered into force in 2016, is boosting the application of renewables among the end-users of energy. The adoption of thermal energy storage is growing due to increasing concern towards more sustainable and green energy alternatives, rising climate change concerns, and government initiatives towards boosting the usage of renewable energy across the globe. The renewable industry includes power sources, primarily wind, hydroelectric, and solar. According to IEA, solar PV generation grew by 270 TWh than 2021 and reached almost 1,300 TWh in 2022. Wind electricity generation increased by a record 265 TWh than 2021 and accounted for more than 2,100 TWh in 2022.

Thermal energy storage (TES) technology is one of the alternatives like battery storage, which can aid the integration of renewable energy in sectors such as power generation,

commercial, and residential. Deploying TES technologies in these sectors can help reduce the heating and cooling demand created by instant power generation from supply resources. TES decreases the requirement for expensive grid reinforcements for PV. It also aids in meeting periodic demand for power and supports the shift to a primarily renewable-driven energy system. Thermal storage technology can also ease the process of load shifting, resulting in better deployment of renewables and improved grid congestion. By assisting the transition to renewables and boosting electrification, TES technologies can aid in meeting long-term climate and sustainability goals. Thus, the rising deployment of renewable generation technologies is driving the thermal energy storage market.

North America Thermal Energy Storage Market Overview

North America is one of the leading thermal energy storage markets. The US holds the major market share in terms of revenue in North America, followed by Canada and Mexico. The growing presence of renewable energy in the power mix is one of the prime reasons behind the increasing proliferation of thermal energy storage technologies across North America. The increasing government focus on boosting the energy shift from conventional to green energy sources positively impacts the thermal energy storage market. Favorable regulatory policies and increasing green energy incentives are the major driving forces behind the growing application of thermal energy storage facilities in different industrial, commercial, and residential sectors. For instance, in section 203 of the Energy Policy Act of 2005, the federal government must utilize at least 7.5% of its renewable energy each fiscal year. In order to attain the goal of net-zero carbon emissions by 2050, coupled with a net-zero power industry by 2035, actions have been commenced by each country of North America, individually following their conditions, specific legal frameworks, and national clean energy goals. The US Inflation Reduction Act was presented into law in 2022, and it declared long-term plans for renewable energy development and energy storage installations. The new law corresponds to growing investment in energy and climate change schemes to facilitate the transition of the US economy toward more ecological energy reserves.

North America Thermal Energy Storage Market Revenue and Forecast to 2030 (US\$ Million)

North America Thermal Energy Storage Market Segmentation

The North America thermal energy storage market is segmented into technology, storage material, application, end user, and country.

Based on technology, the North America thermal energy storage market is segmented into sensible heat storage, latent heat storage, and thermochemical storage. The sensible heat storage segment held the largest share of the North America thermal energy storage market in 2022.

Based on storage material, the North America thermal energy storage market is segmented into water, molten salt, PCM, and others. The water segment held the largest share of the North America thermal energy storage market in 2022.

Based on application, the North America thermal energy storage market is segmented into power generation, process heating and cooling, and district heating and cooling. The district heating and cooling segment held the largest share of the North America thermal energy storage market in 2022.

Based on end user, the North America thermal energy storage market is segmented into utility and nonutility. The utility segment held a larger share of the North America thermal energy storage market in 2022.

Based on country, the North America thermal energy storage market is segmented into the US, Canada, and Mexico. The US dominated the North America thermal energy storage market in 2022.

Baltimore Aircoil Co, Burns & McDonnell Consultants Inc, Calmac Corp, Evapco Inc, Goss Engineering Inc, Kelvin Energy Inc, MAN Energy Solutions SE, Steffes LLC, and Sunamp Ltd are some of the leading companies operating in the North America thermal energy storage market.

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