GLOSSARY OF TECHNICAL TERMS

This glossary of technical terms contains explanations of certain technical terms used in this Document. As such, these terms and their meanings may not correspond to standard industry meanings or usage of these terms.

"Ah"	amp-hour, battery capacity unit
"AC"	alternating current, an electric current which periodically reverses direction and changes its magnitude continuously with time
"AI"	artificial intelligence
"ancillary service"	includes frequency regulation, peak shaving, reserves, reactive power control, and black start to ensure grid stability
"battery pack"	an assembly of interconnected batteries designed to store and supply electrical energy for various applications
"BMS"	battery management system, a system that monitors, manages, and protects batteries, ensuring safe operation, optimal performance, and extended lifespan
"BOM"	bill of materials
"CAGR"	compound annual growth rate
"capacity markets"	refers to a market-based mechanism that provides economic compensation for future power generation capacity
"C&I"	commercial and industrial
"DC"	direct current, an electric current which flows only in one direction
"demand side response"	refers to a mechanism where electricity consumers proactively adjust their usage based on price signals or incentives to optimize supply-demand balance and enhance grid flexibility
"energy density"	the amount of energy that can be contained within a given volume or given mass

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"EPC"	engineering, procurement and construction
"ESG"	environmental, social and governance
"ESS"	a system designed to store energy in various forms, such as chemical, thermal, or mechanical, for later use
"GB"	the national standards of China, established to ensure consistency, quality, and safety across various industries
"GB/T 29490"	Chinese national standard providing the requirements for enterprise intellectual property management, enabling organizations to establish, implement, and improve intellectual property management systems to enhance innovation and competitiveness
"GB/T 36276"	Chinese national standard defining safety and technical requirements for lithium-ion batteries used in electric bicycles
"grid dispatchability"	the ability of a power generation system or resource to provide electricity to the grid in a reliable and controlled manner, based on demand
"grid integration"	the process of connecting and synchronizing various energy sources, including renewable and conventional power generation, with the existing electricity grid
"GW"	gigawatt, a unit of power, one GW equals to 1 billion watts. Together with other units of power, it is the primary metric used in the energy industry to measure load capacity, shipment volume, etc.
"GWh"	gigawatt hour, a unit of energy representing one billion watt hours
"IEC 62619"	international standard specifying safety requirements for secondary lithium batteries used in industrial applications
"ISO 14001:2015"	international standard defining the requirements for an effective environmental management system, enabling organizations to enhance environmental performance and comply with regulations

"ISO 14064-1:2018"	international standard defining the principles and requirements for quantifying and reporting greenhouse gas emissions and removals, enabling organizations to measure, manage, and reduce their carbon footprint
"ISO 45001:2018"	international standard defining the requirements for an occupational health and safety management system, enabling organizations to improve workplace safety, reduce risks, and enhance employee well-being
"ISO 9001:2015"	international standard defining the requirements for a quality management system, enabling organizations to consistently meet customer and regulatory requirements
"kWh"	kilowatt-hours, a unit of energy representing 1,000 watt hours
"LCOE"	levelized cost of electricity, a measure of the average net present cost of electricity generation for a generator over its lifetime. It is used for investment planning and to compare different methods of electricity generation on a consistent basis
"LDES"	long-duration energy storage, refers to energy storage technology that can store electrical energy and continuously release it for more than 4 hours
"LFP"	lithium iron phosphate ($LiFePO_4$)
"life cycle" or "cycle life"	the number of cycles a battery can charge and discharge until its retirement
"lithium"	a metal chemical element, of which the element symbol is Li, and the atomic number is 3
"lithium-ion battery"	rechargeable battery that composes of cells in which lithium ions move from the negative electrode through electrolytes to the positive electrode during discharge and back when charging

"load shifting"	the practice of changing the timing of electricity consumption from peak demand periods to off-peak periods, by shifting electricity usage to times when demand is lower, load shifting helps to balance grid capacity, improve efficiency, and potentially lower costs
"MACSE bidding mechanism"	an auction-based procurement in Italy that offers a 15-year contracts with fixed premiums to bid winners, aiming at fostering the growth of energy storage capacity
"MES"	manufacturing execution system, a system that monitors, tracks, and controls manufacturing processes in real-time
"MRO"	maintenance, repair and overhaul
"MWh"	megawatt hour, a unit of energy representing one million watt hours
"NOx"	nitrogen oxides
"peaking shaving"	the practice of reducing the highest level of electricity demand during peak periods, typically done by utilizing various strategies to either reduce consumption during peak times or increase the supply of electricity to meet demand without overloading the grid
"pure-play"	a company or business that focuses exclusively on a single product, service, or market segment, without diversifying into other areas
"PV," "Photovoltaic"	PV stands for photovoltaic, which refers to the technology that converts sunlight directly into electricity using semiconductor materials
"R&D"	research and development
"SDG"	sustainable development goal
"SEI"	solid electrolyte interface
"separator"	a permeable membrane placed between a battery's anode and cathode, keeping the two electrodes apart to prevent electrical short circuits while also allowing the transport of ionic charge carriers needed to close the circuit during the passage of current in an electrochemical cell

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"sodium-ion battery"	batteries that utilize sodium ions as conductive ions that move between the anode and cathode, and charge and discharge through the mutual conversion of chemical energy and electrical energy
"solid state battery"	a type of rechargeable lithium-ion batteries that use solid state electrolyte
"SOx"	sulfur oxides
"TWh"	terawatt hour, a unit of energy representing one trillion watt hours
"UL 1973"	safety standard specifying the requirements for battery systems used in stationary, vehicle auxiliary power, and light electric rail applications, released by Underwriters Laboratories Inc., ensuring reliability and risk reduction
"UL 9540A"	test method standard evaluating the thermal runaway characteristics of battery energy storage systems, released by Underwriters Laboratories Inc., enabling manufacturers to assess fire and explosion hazards for improved safety
"UN 38.3"	the prevailing United Nations standard that lithium batteries must meet to receive certification for safe transport, which refers to Section 38.3 of Part 3 of the "United Nations Manual of Tests and Standards for the Transport of Dangerous Goods"
"V"	basic unit of voltage
"virtual power plant (VPP)"	refers to a system that aggregates decentralized distributed energy resources using information technologies and software platforms
"volumetric energy density"	the amount of energy that can be contained within a given volume
"Wh/kg"	watt hour per kilogram
"Wh/L"	watt hour per liter