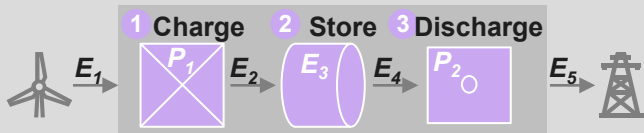


# What is electricity storage?

Corresponds to the storage of energy from electricity in different ways. The discharging phase can be done delivering electricity or heat.

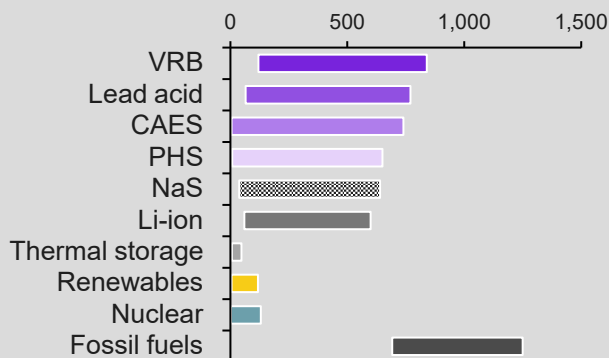


Electricity storage enables stationary storage, mobility, and consumer electronics applications.

- Regulations in each market have an impact on electricity storage participation in electricity markets. Policies are key in the participation of electricity storage in the balancing, capacity or wholesale markets.

- Integrating variable renewable energy sources with storage can sometimes result in a higher GHG footprint compared to conventional energy sources.

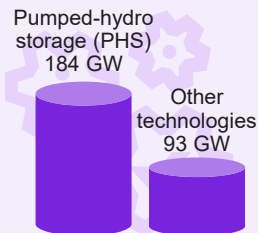
GHG footprint (gCO<sub>2</sub>e/kWh, 2023)



## Market status

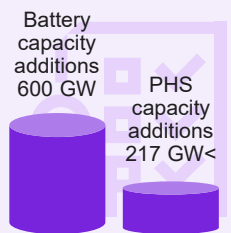
### Operating stationary

In 2023, global capacity reached 276 GW, with li-ion batteries accounting for 78 GW.



### Upcoming capacity additions

China and the US will continue leading on new capacities until 2030.



### Lithium-ion battery demand

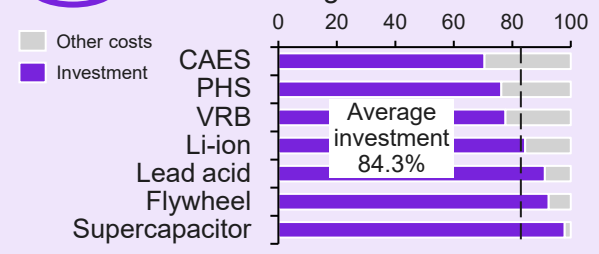
Battery storage growth is focused on li-ion batteries, driven by mobility applications.



## Technologies

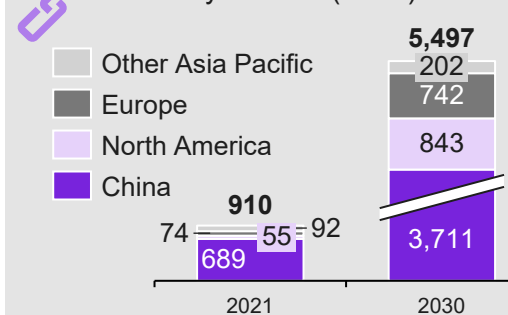
<b>Electrical</b>	Supercapacitor, superconducting magnets
<b>Electrochemical</b>	Classic batteries (e.g., Li-ion, lead acid), flow batteries
<b>Mechanical</b>	PHS, flywheels, CAES, geothermal pump storage
<b>Thermal</b>	Sensible heat, latent heat, thermochemical
<b>Chemical</b>	Power to X

Investment accounts for 84% of total expenditure compared to 59% for traditional generation.

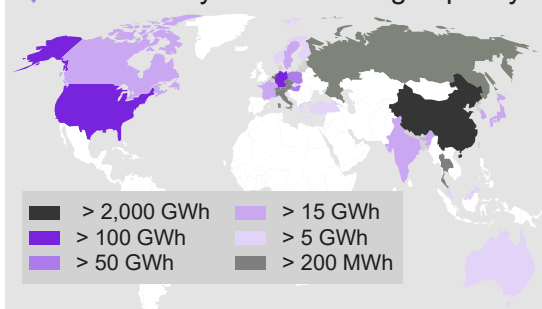


## Battery value chain

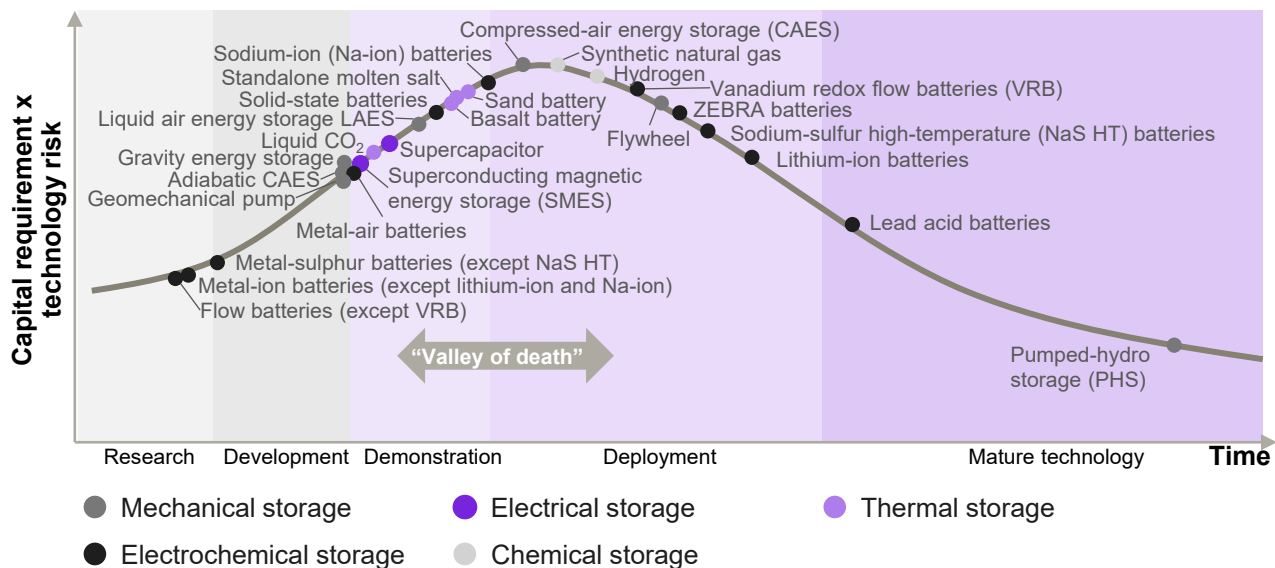
Announced projects by major battery makers (GWh)



Today, China accounts for more than 70% of the lithium-ion battery manufacturing capacity.



## Technology maturity curve



## Business models

At current costs, storage projects must "stack" revenues to create a profitable business case.

