



CLIMATE ENERGY FINANCE

China's Power Sector Trends: 2025 Insights

A snapshot of the remarkable ongoing transformation of China's power sector, driven by the rapid expansion of energy storage capacity and renewable energy sources.

5 August 2025, Australia-China ACBC Green Economy Forum

Overview of China's Power Sector H1 2025



Proportion of non-fossil power capacity reached 60% for the first time by the end of May

☀️ 212GW new solar capacity added in 1H2025 – up 107% y-o-y

🌬️ 51GW new wind capacity added – up 99% y-o-y



Renewable electricity reaches record high 40% of total power generation

🔥 Thermal generation fell 1.9% y-o-y in 1H 2025; utilisation rate hit record low of 45%



Over 40% of the world's battery energy storage installations are in China

21.9GW / 55.2GWh of new battery storage installed in 1H 2025 – +69.4% / +76.6% y-o-y



Coal and refined oil consumption decline

Coal consumption declined slightly, primarily due to warm winter weather and a significant increase in renewable energy output.

In May 2025, China installed in two days what Australia installed in the whole of 2024.

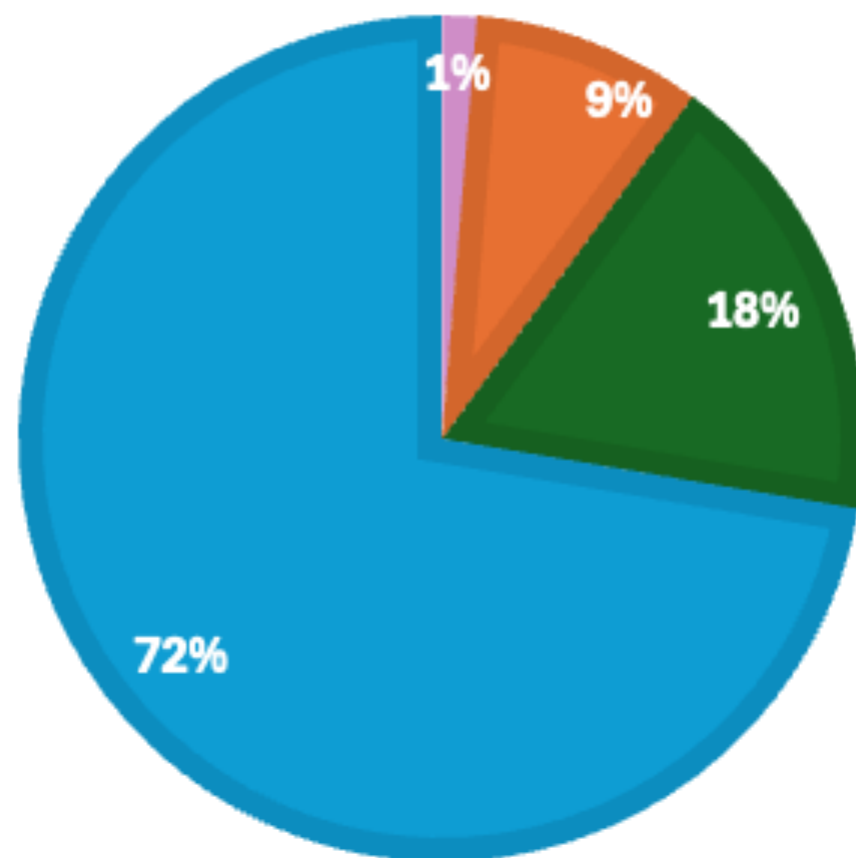
New Capacity Installed in China in Jan-Jun 2025

		Jan-Jun 25	% Share of new adds	% yoy change	Jun-25	% Share of new adds
Thermal Power	GW	26	9%	41%	8.2	29%
Hydropower	GW	4	1%	-21%	0.7	2%
Nuclear Power	GW	-	0%	0%	-	0%
Wind Power	GW	51	18%	99%	5.1	18%
Solar Power	GW	212	72%	107%	14.4	51%
Total capacity added	GW	293	100%	92%	28.4	100%
Renewable Energy adds	GW	268	91%	101%	20.2	71%
Zero Emissions Capacity Adds	GW	268	91%	99%	20.2	71%
YTD power grid investment	US\$bn	41		15%		

Source: National Energy Administration; CEF Estimates

TOTAL INSTALLED (JAN-JUN 2025)

Hydropower Thermal Power Wind Power Solar Power



Total Installed Capacity in China as of Jun 2025

		As of Jun- 2025	Share of Capacity	Change (yoy %)	As of Jun- 2024
Thermal Power	GW	1,475	40%	5%	1,405
Hydro Power	GW	440	12%	3%	427
Nuclear Power	GW	61	2%	5%	58
Wind Power	GW	573	16%	23%	467
Solar Power	GW	1,100	30%	54%	714
Total Installed Capacity	GW	3,648	100%	19%	3,071
Renewable Energy Capacity	GW	2,113	58%	31%	1,607
Zero Emissions Capacity	GW	2,174	60%	31%	1,665

Source: National Energy Administration; CEF Estimates

China's Power Generation Mix in Jan-Jun 2025

		Jan-Jun 25	% Change yoy	Share of generation	Jun-25	% Change yoy
Thermal Power	TWh	2,862	-1.9%	58%	481	1.6%
Coal	TWh	2,723	-1.9%	56%	458	1.6%
Gas	TWh	132	-1.9%	3%	22	1.6%
Other Thermal	TWh	8	-2.0%	0%	1	1.6%
Bioenergy	TWh	91	-1.9%	2%	16	1.6%
Hydropower	TWh	546	-1.8%	11%	140	-3.3%
Nuclear Power	TWh	236	11.3%	5%	39	10.3%
Wind Power	TWh	592	15.5%	12%	81	10.2%
Solar Power	TWh	567	39.5%	12%	113	41.3%
TOTAL POWER GENERATION	TWh	4,894	4.2%	100%	870	5.8%
Variable Renewable Generation	TWh	1,159	26.1%	24%	194	26.5%
Zero Emissions Power Generation	TWh	2,032	14.2%	42%	389	11.4%

Source: Ember; CEF Estimates

New installed new energy capacity in H12025 +69.4% y-o-y

2023-2025 June China New Energy Storage Installed Capacity



lithium iron
phosphate is
20.58GW/48.52GWh
(including hybrid
energy storage
projects), accounting
for 94% (power)/88%
(capacity)