Cost trends of the different solar power technologies

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Global renewable power capacity in the tripling pledge, 2022 and 2030



Global annual new capacity additions of renewable power, 2010-2023



2022-2023 Capacity additions increased +54%

Solar PV accounted for 73% of new installed capacity

Other significant contributors were: Onshore and Offshore Wind, Hydropower and Bioenergy



Current expectations of global cumulative renewable power capacity to 2030

Solar PV is likely to hit the level needed under the tripling goal by 2030 of around 5.5 TW

Others RE are projected to grow linearly, which it is not good enough for tripling

Acceleration is needed



Surplus/deficit relative to tripling goal



Global LCOE of utility-scale renewable power generation technologies, 2010–2022



Cost reductions over the last 12 years

Solar and wind power now offer very competitive electricity

PV and on-shore wind are under cutting the LCOE from new fossil fuel projects

Solar Photovoltaic



Global utility-scale solar PV project LCOE and range, 2010-2022



2010-2022

Total installed costs fell by -83%

LCOE decreased by -89%

Solar PV Modules and Polysilicon Prices, 2020 to Q1 2024



The oversupply of polysilicon accelerated the module price downtrend during 2023

PV total installed cost breakdown by country, 2022

Prices are not only related to modules...

BoS cost reductions relate to competitive pressures and increased installer experience, which has led to improved installation processes and soft development costs



Concentrating Solar Power



Global weighted average total installed costs, capacity factors and LCOE for CSP, 2010-2023



2010-2023

Total installed costs fell by

-37%



LCOE for CSP projects by technology and storage duration, 2010-2023



Average project size and average storage hours of CSP projects, 2010-2023



2010-2023

Storage capacity increased



Battery Storage



Projected battery storage growth to 2030

The global energy storage market is growing...

It is being used to accelerate solar and wind deployment in response to grid-related challenges





-82%



Energy storage deployment by application



Energy shifting is the main application of electricity storage since 2019

National energy storage targets are needed to promote the deployment of energy storage applications

Based on BNEF 2024, Energy Storage Market Outlook

Costs decrease in the last years of PV, CSP and Battery storage projects

PV deployment is expected to meet the Tripling Goal requirement

3

CSP market remains small and strong policy support is needed

4

Accelerated deployment of battery storage is needed to increase the flexibility of electricity systems







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