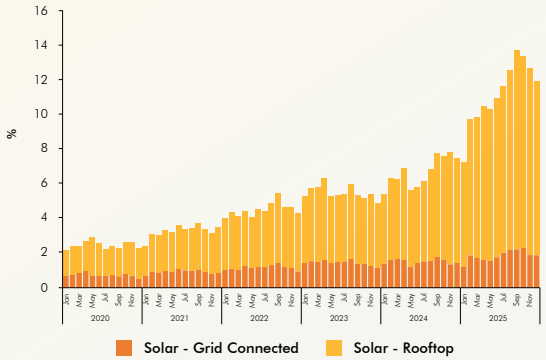
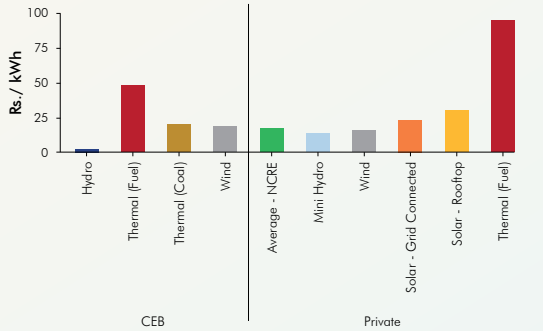
Featured Chart 1.3

Expansion in Solar Power Generation

Share of Total Electricity Generation[1]



Average Cost of Electricity at Generation Point - 2025



Source: Ceylon Electricity Board

Note: Grid-connected solar refers to large-scale, ground-mounted systems, whereas rooftop solar denotes typically small-scale installations on building rooftops

The increasing adoption of renewable energy, particularly solar and wind, is reshaping electricity markets globally. In Sri Lanka, although the transition towards such non-conventional renewable energy sources commenced nearly a decade ago, it has only gained significant momentum following the removal of energy subsidies through the Government's efforts in moving towards a more cost-reflective pricing mechanism for utilities in 2022. This policy decision created financial incentives for both the private sector and households to invest in their own renewable energy sources, thereby fulfilling energy needs with low-cost options and supporting the growing demand for electricity.

Accordingly, capacity expansions were seen in the renewable sector, particularly in solar energy, driven by the rapid investments in rooftop solar panels which accounted for nearly 9.4% of total electricity generation[1] in 2025. This growing adoption of rooftop solar panels has reduced the reliance on relatively costly thermal generation amidst rising electricity demand.

However, this rapid expansion in solar power presents several challenges. Particularly, the mismatch between daytime solar power generation and nighttime peak demand creates complications in grid management and grid stability. This shortcoming can be resolved to a greater extent through battery storage systems. Offering higher feed-in tariff for the battery installed solar systems which supply electricity to the grid at peak hours and gradual transition into Net Plus System[2] and Time of Use tariffs[3] are several solutions to promote investments in battery storage. Exploration of novel business models such as aggregators or community energy cooperatives to procure rooftop solar energy could be useful in grid management amidst rapid expansion in small scale solar energy producers. Meanwhile, with the rapidly increasing tendency towards solar power generation, it is prudent to make futuristic plans on safe disposal/recycling of solar panels as well as batteries at the end of their life span.

Timely and coordinated actions remain essential for this transition to continue and fully harness the potential of solar energy. Further, advancing this transition and supporting the growth of renewable generation is essential in light of growing volatility in costs for thermal based electricity generation and to meet the targets under Sri Lanka's Carbon Net Zero 2050 Roadmap and Strategic Plan.

1 Does not include rooftop solar connected to Lanka Electricity Company.

2 A rooftop solar arrangement where total generation is supplied to the national grid and paid for by the utility company while the electricity consumption of the solar energy producer is billed separately.

3 Tariff is determined based on the time of use.