

Plenary

New X-factors: Rooftop Solar and Electric Mobility

19 July 2019 | 1400 - 1530 hrs

Hyatt Regency, New Delhi

India is urbanising at an exponential rate with about 34 percent of the population already living in urban areas. This figure is expected to increase to 40 percent by 2030. A growing urban population with its increasing per capita income will also fuel car ownership in India. Total vehicle ownership is expected to be around 175 cars per 1000 people in 2040 from the current 20 cars per 1000 people. Increased energy and mobility demands of urban India Rapid urbanisation and car ownership puts households at the centre of India's clean energy revolution. Without their participation and adoption of rooftop solar and electric vehicles, India cannot achieve a higher share of clean electricity and mobility.

Together, rooftop solar and electric vehicles (EVs) offer multiple benefits to consumers, discoms, and the economy as a whole. End consumers would benefit from increased employment opportunity, a clean local environment, as well as a reduced cost burden over the lifetime of the clean energy applications. Rooftop solar sector alone would create employment opportunity for 240,000 people if India achieves the 40GW target. Further, CEEW analysis suggests that a high level of indigenisation (90 percent of EV powertrain components) could result in about 1.57 million jobs in four-wheel powertrain manufacturing (excluding battery pack assembly) by 2030, at 30 per cent EV penetration.

Integration of solar and EVs together with the grid would contribute to demand balancing, congestion of the distribution network, avoided energy procurement requirements, realisation of Renewable Purchase Obligations (RPO), and a decline in transmission and distribution losses.

India has already set an ambitious target to achieve 40 GW of rooftop solar capacity by 2022. The current rooftop solar capacity stands at 3.8 GW, of which residential rooftop is a meagre 13 per cent. Similarly, for electric vehicles, India has targets to achieve 30 percent of new sales of cars and two-wheelers to be electric by 2030. However, the rooftop PV and electric vehicle sectors are still at a nascent stage and face many on ground challenges including lack of consumer awareness, high upfront cost, ill-suited policy and regulatory regime, inadequate charging infrastructure, and skewed incentives structures.

The plenary hosted as part of Energy Horizons 2019, CEEW's annual flagship event and has been designed keeping this context in mind. This panel will discuss the market drivers, opportunities, and barriers to advance the rooftop and mobility transitions. The discussion will focus on the different regulatory and policy levers that can be used to accelerate this scale up in emerging economies.

In this plenary we aim to accomplish the following:

- Debate the market opportunity offered by the rooftop and EV sector in emerging economies
- Establish the critical role that utilities will play in advancing these consumer demand led transitions in solar rooftop, and electric mobility
- Identify the lessons from the utility scale renewable energy markets to accelerate the pace of adoption of solar rooftops and electric mobility solutions