



# E-MOBILITY

## Solar Appliance Snapshot

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EFFICIENCY FOR ACCESS COALITION

**Electric mobility (e-mobility) encompasses transport modes that are battery-powered, eliminating the need for an internal combustion engine. Micro mobility, including 2- and 3-wheelers, is the fastest growing form of transport in emerging markets due to their size and affordability.**

### MARKET INSIGHTS

Direct comparisons between Sub-Saharan and South Asia markets are difficult to make due to regional differences in government support, use cases and environments. However, data suggests that the Indian e-mobility market is the most advanced, after the Chinese market. Other Asian countries (excluding China) have demonstrated uptake of electric 2-wheelers (e-2w) and electric 3-wheelers (e-3w) but have faced barriers in performance. In Sub-Saharan Africa, East Africa is the hub for most recent activity and innovation. Business models are evolving to address challenges in affordability and access to mobility.

### CONSUMER IMPACTS

E-mobility brings immediate environmental and health benefits to communities by reducing localised air pollution. User-centric business models and vehicle technologies can also enable inclusivity by empowering women and increasing their autonomy. Cargo-friendly e-mobility solutions in rural areas can strengthen food systems and increase incomes of small-holder farmers in poorer areas. Since powering an e-2w is significantly cheaper per kilometre than a fuelling a conventional 2-wheeler, riders can reduce their expenditure, enabling them to save and make them more financially stable.



**8 – 9 Million**

Projected electric 2-wheeler sales in India by 2030.



**11B tonnes**

Estimated tonnes of CO<sub>2</sub> that could be avoided by 2030 if 90% of global 2-wheeler sales were electric by 2030



**18**

Companies active in the Kenyan e-mobility sector, 16 of which are focused on electric 2-wheelers or 3-wheelers.



**40%**

Estimated cost reduction if moto-taxi drivers in Sub-Saharan Africa switched to electric 2-wheelers.

## CURRENT SUCCESSES

There has been increasing private sector investment and donor interest in e-mobility. Despite a nascent market, private sector financing is enabling the R&D and scale-up of innovative vehicle technologies and business models. Programmes in India have shown that supportive government policies can boost local assembly and manufacturing. There has also been a rise in new business models offering inclusive pricing, such as battery swapping and hub models. These business models target affordability and enable access to other services alongside solar charging.

## REMAINING CHALLENGES

There is a lack of sufficient and reliable data in the e-mobility sector for influential stakeholders such as financiers or companies looking to expand into emerging markets. Without sufficient data, it is challenging stakeholders to catalyse impact and scale and provide patient capital. The nature of rural areas, with a lack of charging infrastructure, presents challenges for the integration of open and interoperable software and hardware communication. It could limit e-mobility users moving freely from one part of a country to another unless it is addressed.

## RECOMENDATIONS AND PATHWAYS TO SCALE

**Forward-thinking approaches are required to ensure an affordable and accessible transition to electric powered mobility, in both urban and rural areas. Integrating the use of e-mobility with compatible local infrastructure and business models for lowest incomes is key.**



### Ensuring clean and reliable power supply

A clean energy transition to e-mobility needs to be realised through the use of appropriate energy systems, such as hybrid or smart solutions.



### Consideration of circular economy

Ethics, sustainability, and e-waste are all crucial aspects to establish into systems as the production and uptake of batteries increases.



### Promote specialisation

Specialisation within the value chain will support economies of scale and acceleration within the e-mobility sector, as well as commercial viability.



### Financing for the entire value chain

A combination of both equity and debt financing can aid companies to deploy pilot testing of new technologies and business models and scale up.