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INDIAN ELECTRIC VEHICLE INDUSTRY

Charging up the EV revolution

AUGUST 2022

Highlights

EV battery demand in India (in relation to domestic sales) expected to touch ~15 GWh by 2025 and ~60 GWh by 2030

ICRA estimates investments in cell manufacturing to exceed ~Rs. 70,000 crore by 2030

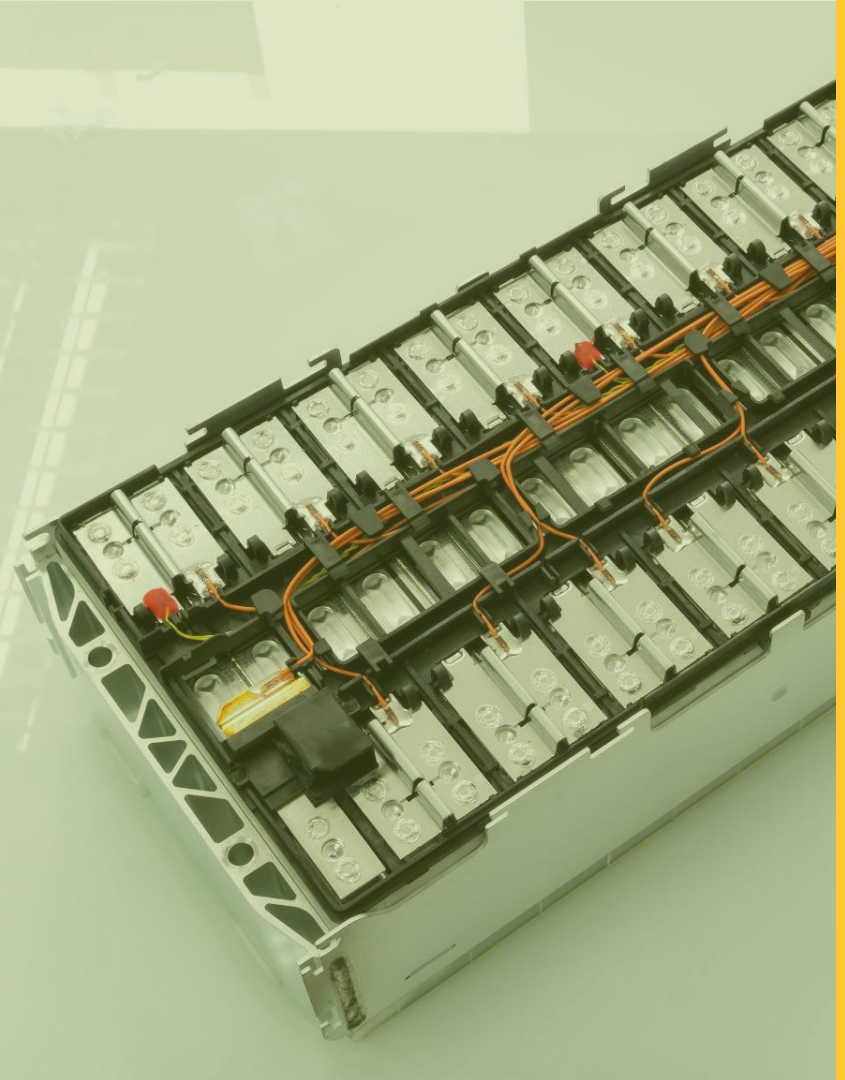
Electric Vehicle (EV) penetration across automotive segments is expected to grow exponentially over the next decade, spurred by Government support, enhanced awareness and increasing product launches. With battery remaining the most critical and costly component of an EV, the battery manufacturing segment has garnered a lot of attention in the recent past.

India currently remains dependent on imports to meet its battery requirements, with domestic capabilities limited to battery pack assembly. Given the need to invest in cell manufacturing units to keep pace with the expected surge in battery demand for both EV and stationary applications, numerous entities have already committed significant investments in this segment.

The Government of India (GoI) recently signed agreements with three companies for incentives under its Production-Linked Incentive (PLI) Scheme for Advanced Chemistry Cell (ACC) Battery Storage. The policy lays a lot of emphasis on enhancing domestic value addition and is expected to support capability development in this sunrise sector.

Multiple challenges exist on the road to establishment of a cell manufacturing ecosystem, primary ones being technology complexity, high capital intensity and raw material availability. The ability of battery manufacturers to enter into agreements/alliances with players across the value chain to mitigate these risks, coupled with the creation of a robust framework for recycling would remain key.

Lithium-ion batteries have emerged as the battery of choice for EVs, given their high energy efficiency, decent thermal stability and low self-discharge. While Lithium Nickel Manganese Oxide (NMC) is the most prevalent cathode chemistry currently, Lithium Iron Phosphate (LFP) chemistry is expected to gain increased acceptance going forward, given its higher thermal stability.



Agenda

- Electric Vehicle Battery - The new oil
- Case for Advanced cell manufacturing
- Government’s Policies to drive investments
- Key Challenges and Way Forward
- Electric Vehicle Batteries – Industry Primer
- Key Battery Chemistries

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Thank You!