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INDIAN ELECTRIC VEHICLE INDUSTRY

PM e-Drive scheme to fast charge electric vehicle adoption

SEPTEMBER 2024

Highlights

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Multi-pronged strategy adopted to promote the development of an electric vehicle (EV) ecosystem; continuation of incentives under the scheme is a timely boost for the EV sector.

Healthy investment outlay for mass mobility and approval of the payment security mechanism for buses procured under the Gross Cost Contract model likely to spur e-bus penetration.

On September 11, 2024, the Union Cabinet approved the Ministry of Heavy Industries' (MHI) proposal for implementation of the scheme titled 'PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM e-Drive)' with a view to promoting electric mobility in the country. The scheme has a total outlay of ~Rs. 10,900 crore for a period of two years**.** Along with demand incentives aimed at lowering the cost of acquisition, it has also allocated healthy investment outlays for electrifying mass mobility and creation of charging and testing infrastructure.

A total outlay of ~Rs. 3,679 crore has been set aside for demand incentives for e-2Ws, e-3Ws, e-ambulances, e-trucks and other emerging EVs, though electric cars have been left out of the scheme. Even as the quantum of incentives available per vehicle appears to have been lowered and points to a gradual phasing out of the subsidy support environment, its continuation helps address uncertainty and is a timely boost for the EV industry. The same, coupled with softening in battery prices seen over the recent past, is likely to support EV adoption, going forward.

The scheme has provided for an investment outlay of ~Rs. 4,391 crore to boost mass mobility by procurement of ~14,028 buses by the State Transport Undertaking/public transport agencies. While the provision of subsidy under the Gross Cost Contract model will help reduce capital costs (thereby making e-bus projects viable), the simultaneous approval of the Payment Security Mechanism Scheme by the Union Cabinet is a key step in helping address the concerns of prospective bidders for these contracts in relation to payment delays/defaults, through the establishment of a dedicated fund.

There is enhanced focus on creation of charging infrastructure under the PM e-Drive scheme, with a budgeted investment outlay of ~Rs. 2,000 crore. It proposes the installation of 22,100 fast chargers for e-4Ws, 1800 fast chargers for e-buses and 48,400 such chargers for e-2W/3Ws, with the primary targets being cities with high EV penetration and select highways. The expansion in charging infrastructure is likely to help reduce range anxiety and drive adoption of EVs going forward.

PM E-Drive scheme the latest in a series of initiatives to promote electrification

EXHIBIT 1: EV policies evolution timeline

2024

PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM E-Drive)

- Focus on expediting EV adoption through demand incentives and creation of charging infrastructure
- Total outlay of Rs. 10,900 crore for a period of 2 years

2024

Electric Mobility Promotion Scheme

- Announced as an interim scheme to extend benefits post expiry of FAME II.
- Total outlay increased to Rs. 778 crore in July 2024; offered demand incentives

2021

Production-Linked Incentive (PLI) Scheme

- PLI Schemes for the automobile and auto component Industry; budgetary outlay of Rs. 25,938 crore
- PLI scheme for Advanced Cell Chemistry (ACC) battery manufacturing; outlay of Rs. 18,100 crore

2019-24

FAME-II Scheme

- Launched in April 2019 initially for a period of 3 years (extended by 2 years till March 2024)
- Total outlay of Rs. 11,500 crore (enhanced from initial Rs. 10,000 crore)

2015-18

FAME-I Scheme

- Launched in April 2015, by the Department of Heavy Industry
- Total outlay of Rs. 795 crore for demand incentives

2013

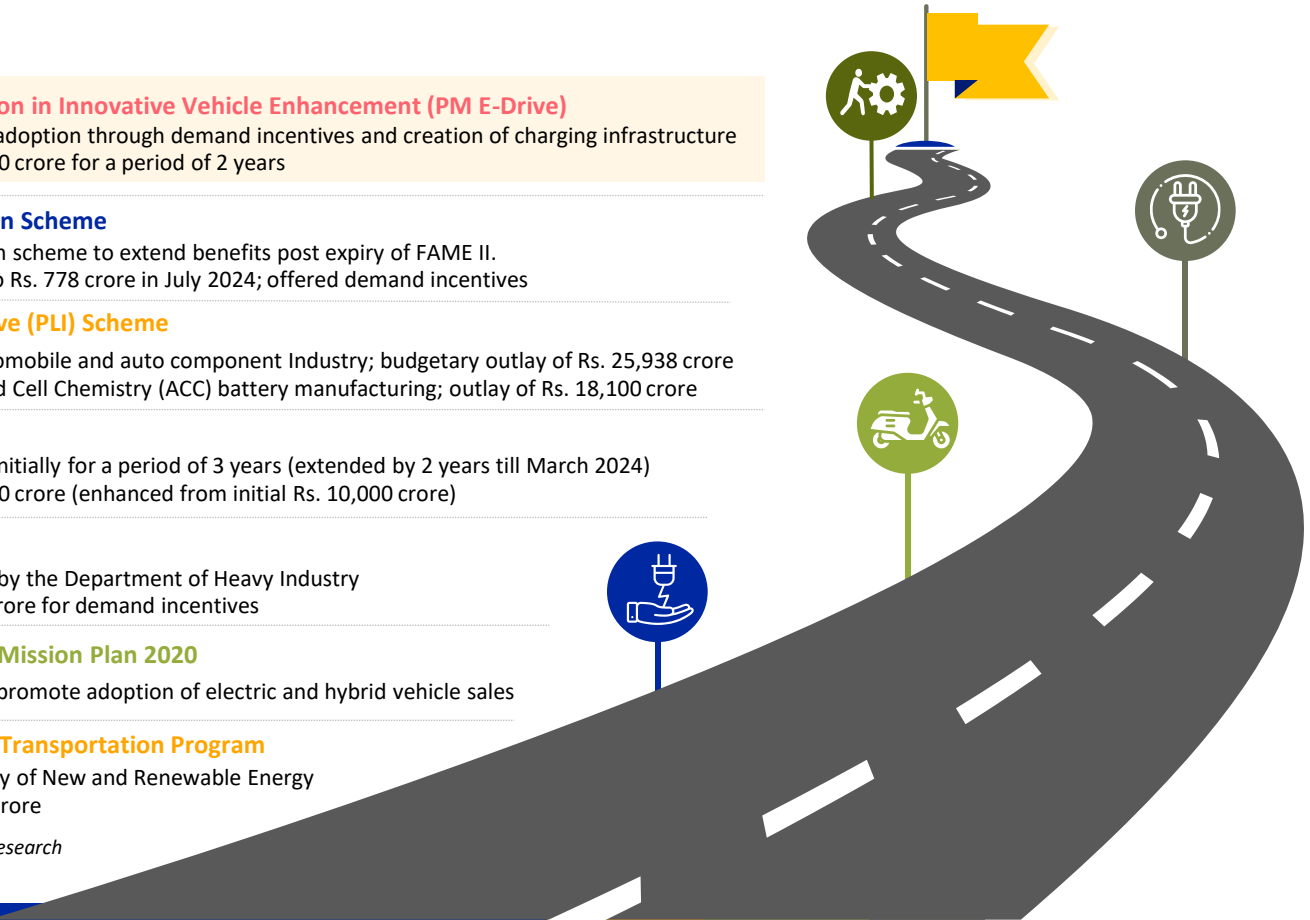
National Electric Mobility Mission Plan 2020

- Mission plan formed to promote adoption of electric and hybrid vehicle sales

2010-12

Alternate Fuel for Surface Transportation Program

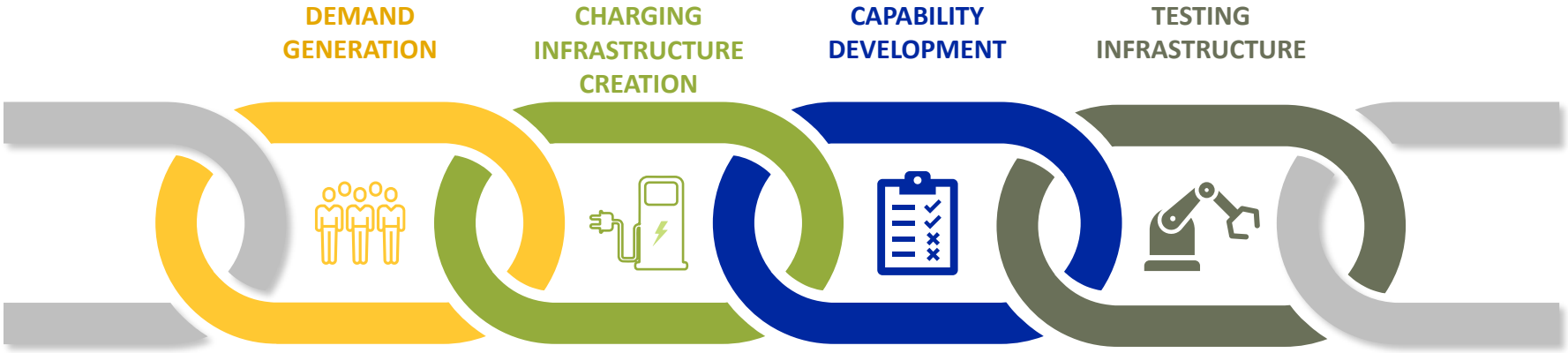
- Implemented by Ministry of New and Renewable Energy
- Total outlay was Rs. 95 crore



Source: Press Information Bureau, Govt of India, ICRA Research

Multi-pronged approach aimed at development of a supportive ecosystem

EXHIBIT 2: Focus areas of PM e-Drive scheme

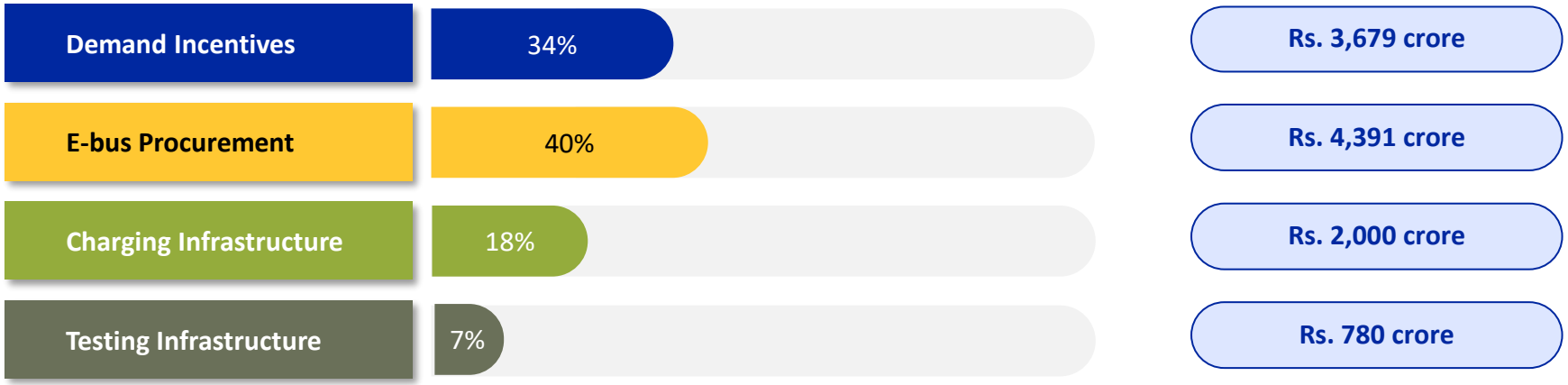


- The Government of India's (GoI's) efforts to enhance EV adoption through policy support have been instrumental in helping increase the electrification adoption over the past few years.
- Under the PM e-Drive scheme, the Government has again adopted a multi-pronged strategy to promote the development of an EV ecosystem. Along with demand incentives aimed at lowering the cost of acquisition, the GoI also remains focused on electrifying mass mobility and creation of adequate charging and testing infrastructure. Moreover, it aims to promote the creation of domestic manufacturing capabilities and strengthening of the EV supply chain, with manufacturers required to adhere to a phased manufacturing programme (which prescribes norms for domestic value addition) to be eligible for benefits.

Source: Press Information Bureau, Govt of India, ICRA Research

Healthy split in investment outlay across various initiatives

EXHIBIT 3: Investment Allocation under PM E-Drive scheme

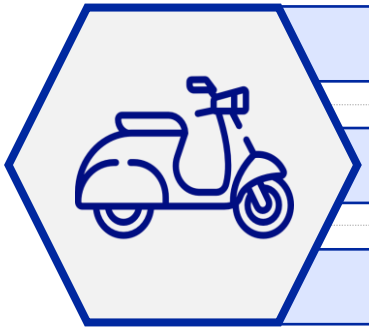


- A total outlay of ~Rs.3,679 crore has been set aside for demand incentives for e-2Ws, e-3Ws, e-ambulances, e-trucks and other emerging Evs, however, electric cars have been left out of the scheme. ~Rs. 500 crore each has been set aside for promotion of e-ambulances and e-trucks (incentives available for users having an approved scrapping certificate.
- An outlay of ~Rs. 4,391 crore has been provided to promote mass mobility through procurement of e-buses; preference would be given to buses being procured by cities/states after scrapping old buses through authorised centres.
- To address range anxiety concerns, a healthy outlay of Rs. 2,000 crore has been set aside for installation of EV public charging stations. Additionally, an outlay of ~Rs. 780 crore has been provided for modernisation of test agencies of the Ministry of Heavy Industries.

Source: Press Information Bureau, Govt of India, ICRA Research

Extension of demand incentives a timely boost for EV industry

EXHIBIT 4: Demand incentive evolution timeline for e2w



Key Changes	Initial FAME II guidelines	Revised FAME-II guidelines (Jun 2021)	Revised FAME-II guidelines (May 2023)	EMPS (Mar 2024)
Cap on demand Incentive *(Percentage of Ex-Showroom price)*	20%	40%	15%	Rs.10,000/e-2W
Demand Incentive *(Rs. per kWh)*	10,000	15,000	10,000	5,000
FAME II Allocation for E2W *(In Rs. Crore)*	2,000	2,000	3,500	330*

- The availability of demand incentives has been instrumental in driving EV adoption over the past few years. With the FAME-II subsidy having ended on March 31, 2024, the GoI had launched the Electric Mobility Promotion Scheme (EMPS) in a timely manner to support adoption of EVs.
- With the EMPS extension valid till the end of September 2024, there was heightened uncertainty with regard to the continuation of demand incentives. Given that a reduction in subsidy benefits under the EMPS scheme (vis-à-vis earlier available benefits) had already curtailed the pace of adoption to an extent, the expiry of incentives would have acted as a major setback for the industry. Even as the quantum of incentives available per vehicle appears to have been further lowered (details to be available in the Government notification) and points to a gradual phasing out of the subsidy support environment, the continuation of incentives (to be available via Aadhaar authenticated e-vouchers for buyers) is a timely boost for the EV industry. The same, coupled with softening in battery prices seen over the recent past, is likely to support EV adoption, going forward.

Source: Press Information Bureau, Govt of India, ICRA Research; FAME - Faster Adoption and Manufacturing of Hybrid and Electric Vehicles

Subsidy incentive, coupled with payment security mechanism to aid e-bus adoption

EXHIBIT 5: Trend in electric bus sales in India

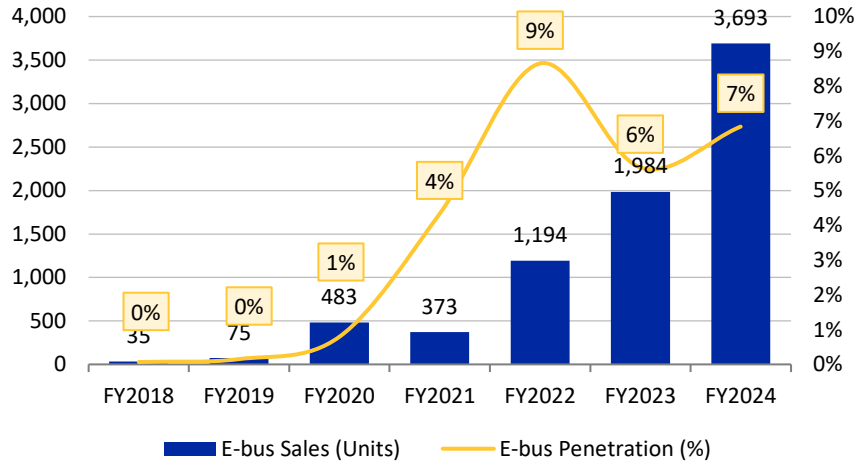


EXHIBIT 6: Key facets of PM-eBus Sewa-Payment Security Mechanism Scheme

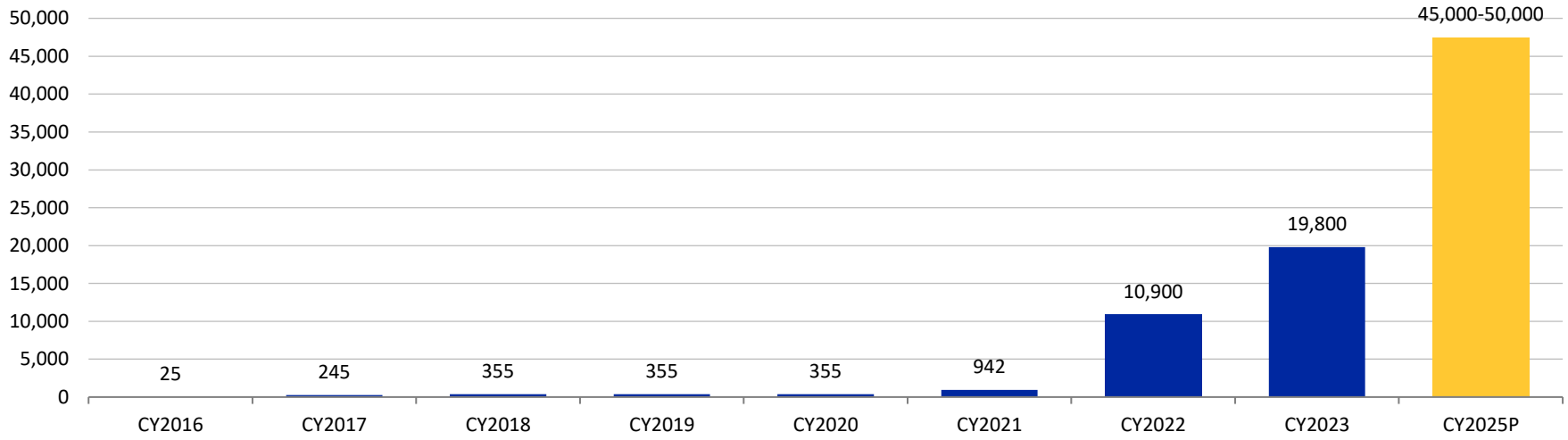
Total outlay	Rs. 3,435 crore
Number of e-buses	38,000
Implementation Period	FY2025 – FY2029

- The outlay provided under the scheme targets procurement of ~14,028 buses by the State Transport Undertaking/public transport agencies. In line with recent tenders, Convergence Energy Services Limited (CESL) shall be the nodal agency to aggregate demand in nine leading cities.
- While the provision of subsidy under the Gross Cost Contract model will help reduce capital costs (thereby making e-bus projects viable), the approval of the payment security mechanism scheme is a key step in helping address the concerns of prospective bidders for these contracts, in relation to payment delays/defaults through the establishment of a dedicated fund.

Source: Press Information Bureau, VAHAN Dashboard, Research

Charging infrastructure expected to ramp up materially over next few years

EXHIBIT 7: Total Number of Public Charging Stations in India



- The total number of public charging stations in India at the end of CY2023 as per the International Energy Agency were ~19,800; though the number has increased at a rapid pace over CY2021-CY2023, it continues to remain low. In this regard, the enhanced focus on creation of charging infrastructure under the PM e-Drive scheme was imperative. It proposes the installation of 22,100 fast chargers for e-4Ws, 1800 fast chargers for e-buses and 48,400 fast chargers for e-2W/3Ws, with cities with high EV penetration and select highways to be targeted.

Source: International Energy Agency (IEA), ICRA Research

Expansion in charging infrastructure likely to drive adoption

EXHIBIT 8: EV Sales trend in China, US and Europe ('000)

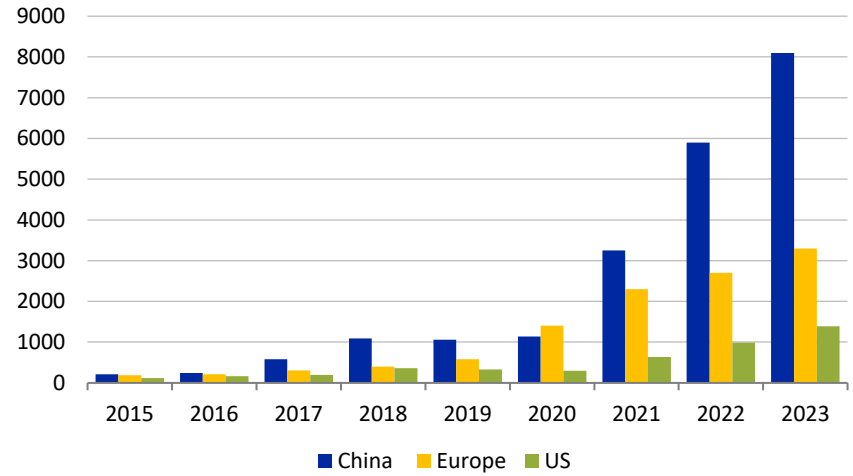
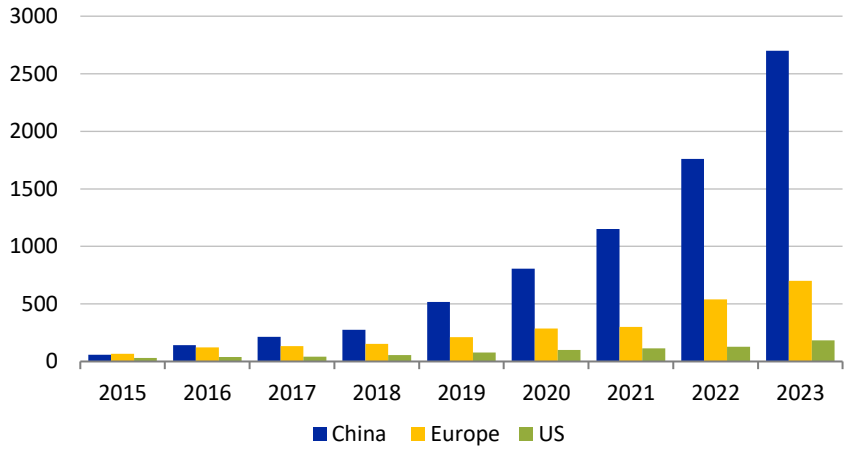


EXHIBIT 9: EV charging point trend in China, US and Europe ('000)



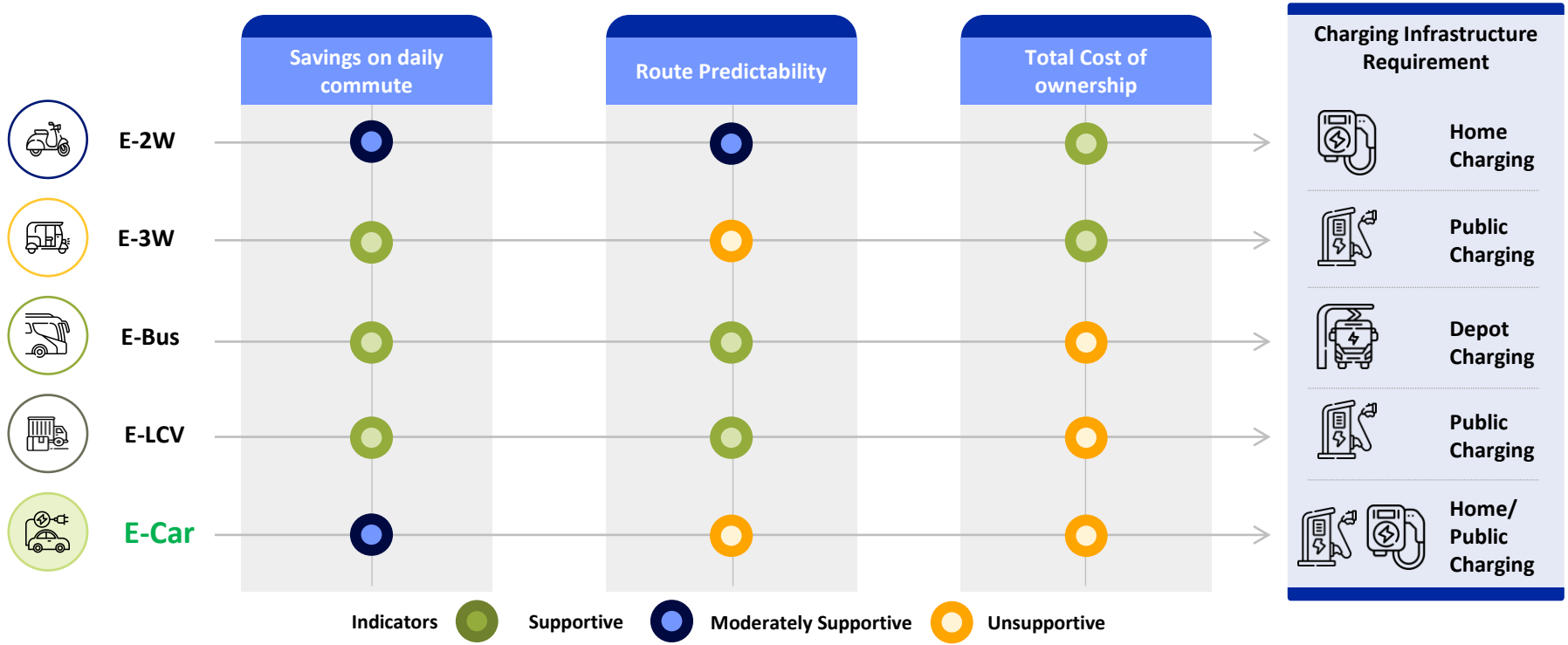
- In addition to availability of demand incentives, the healthy pace of EV adoption in China was also supported by timely investments in expansion of its charging infrastructure.
- The number of charging stations in China almost trebled from 2018 to 2020 and continued to increase materially over CY2021-CY2023, thereby propelling EV adoption.

Source: International Energy Agency (IEA), ICRA Research

OUTLOOK

Pace of EV adoption across automotive segments to be varied

EXHIBIT 10: Key determinants for EV adoption



Source: ICRA Research

Confluence of factors to support EV adoption over medium term

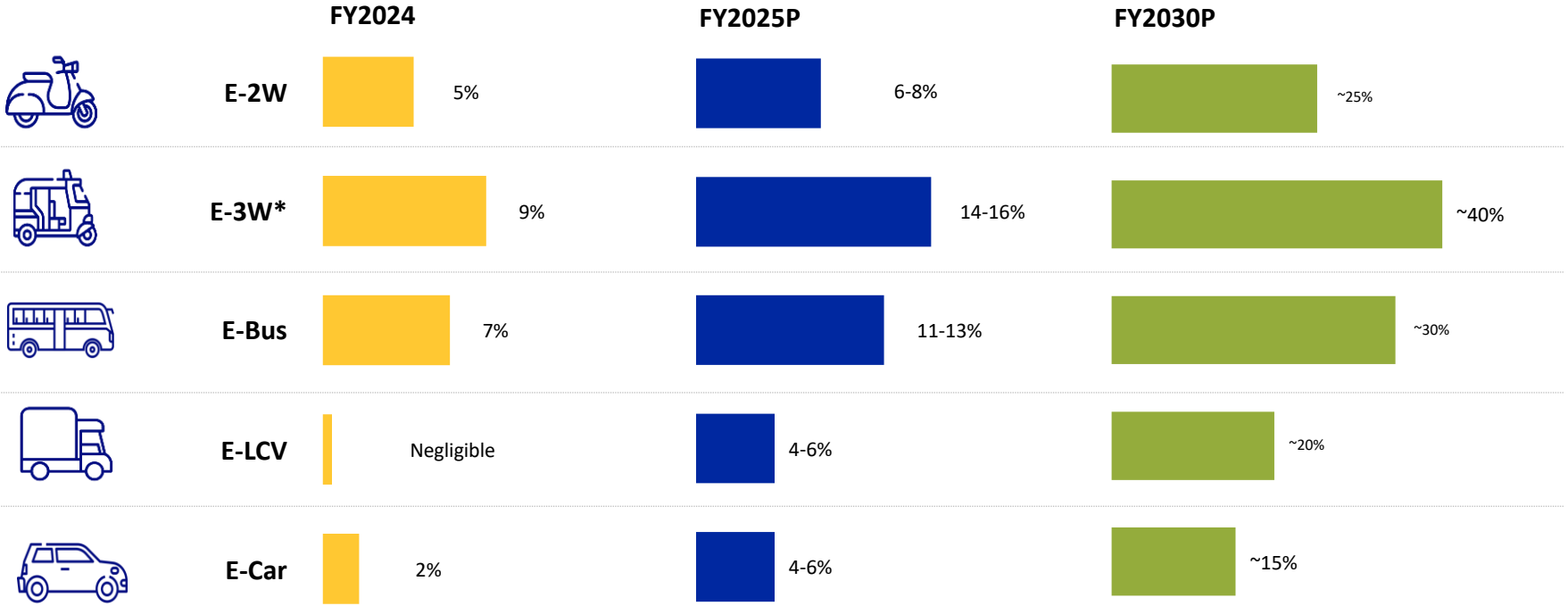
EXHIBIT 11: Key growth drivers for electrification across all segments

E-3W	E-2W	Electric Bus	Electric Car	E-LCV
Improving technology/ product portfolio	Government subsidies	Government Subsidies	Lower running cost	Improving technology
Lower ownership cost	Price parity with ICE 2Ws	Demand aggregation by govt backed entities	Improving technology/ product portfolio	Lower running cost
	Improving technology/ product portfolio	Lower ownership cost	Improving charging infrastructure	Decline in battery prices
	Commercial Usage/Lower dependence on charging infra		Decline in battery prices	

Source: ICRA Research

EV penetration across segments to gradually ramp up

EXHIBIT 12: Trend in Electrification across All Segments



Source: ICRA Research; Note – Penetration measured in terms of new vehicle registrations
**Excludes rickshaw segment, which is already electrified to a large extent*

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