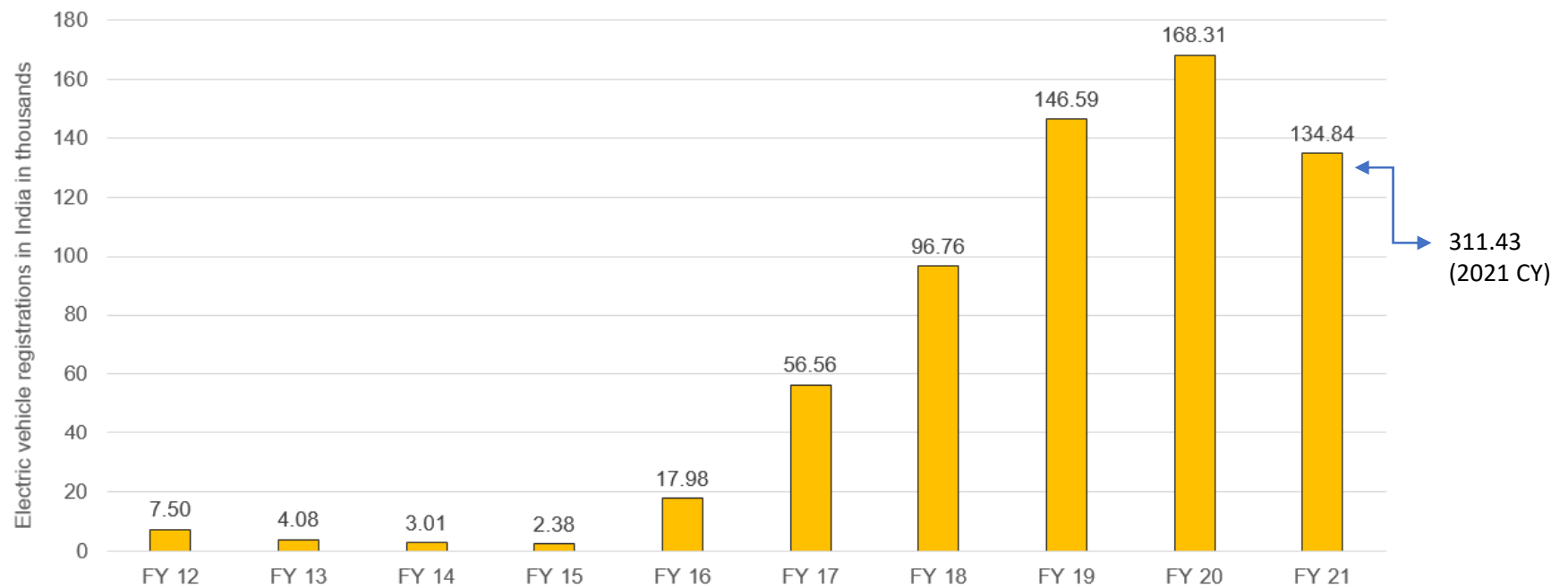




ANIL AGARWAL DIALOGUE 2022

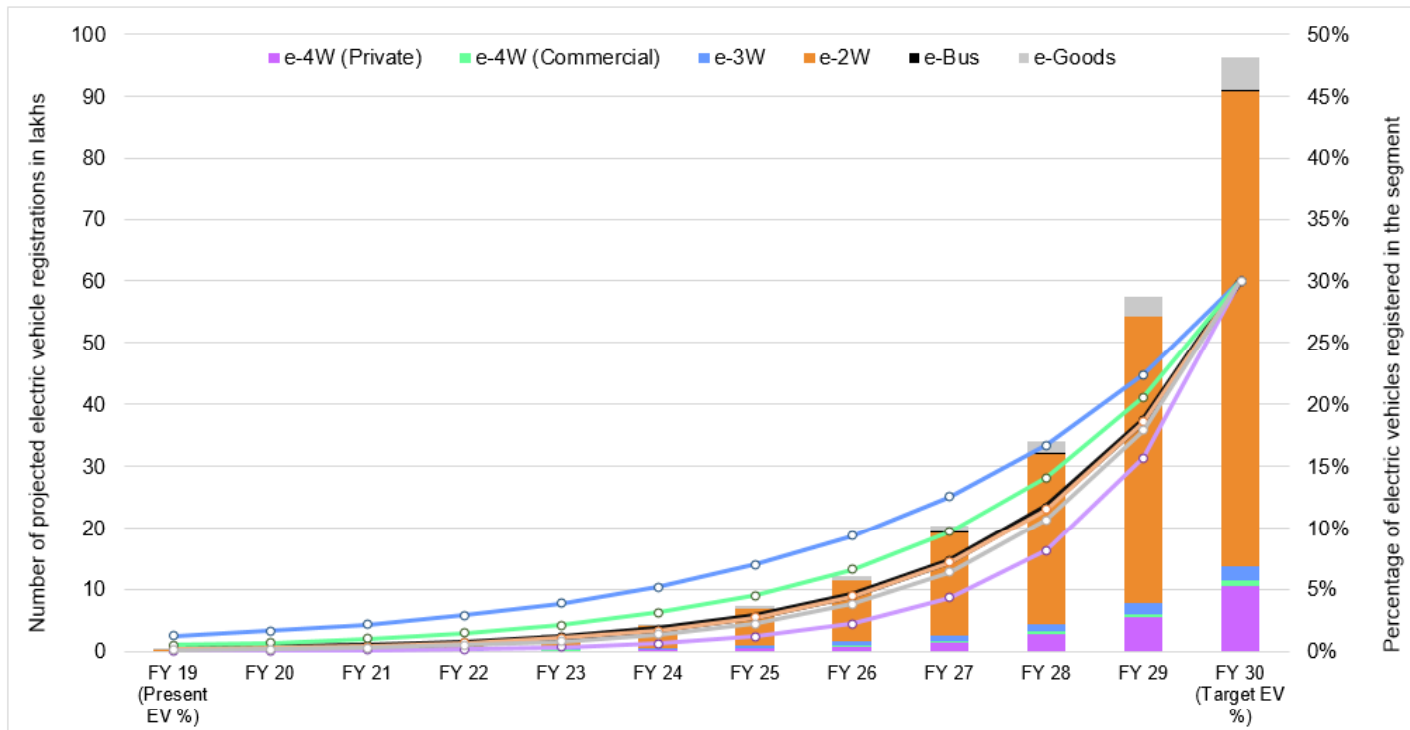
Electric Vehicles and the Future

Current Status of e-vehicles in India



Source: SMEV, Vahan

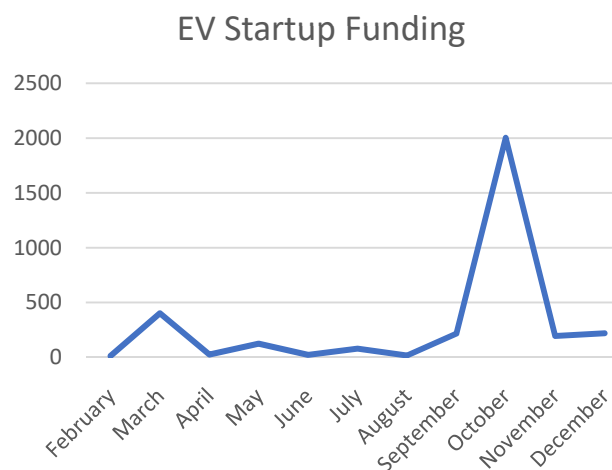
Projection for 2030: CAGR of 46%



Need to maintain minimum average CAGR of 46% going forward

Policy support

- Policy intent: Ministerial announcements -- 30@30
 - NITI Aayog 2019: 70% electrification of all commercial cars, 30% of private cars, 40% of buses, and 80% 2/3 -wheelers by 2030
- Not backed by any regulatory mandate and long-term policy roadmap
- FAME II revision in June 2021
 - E2W
 - E3W
- PLI outlay of Rs 42,500 crore



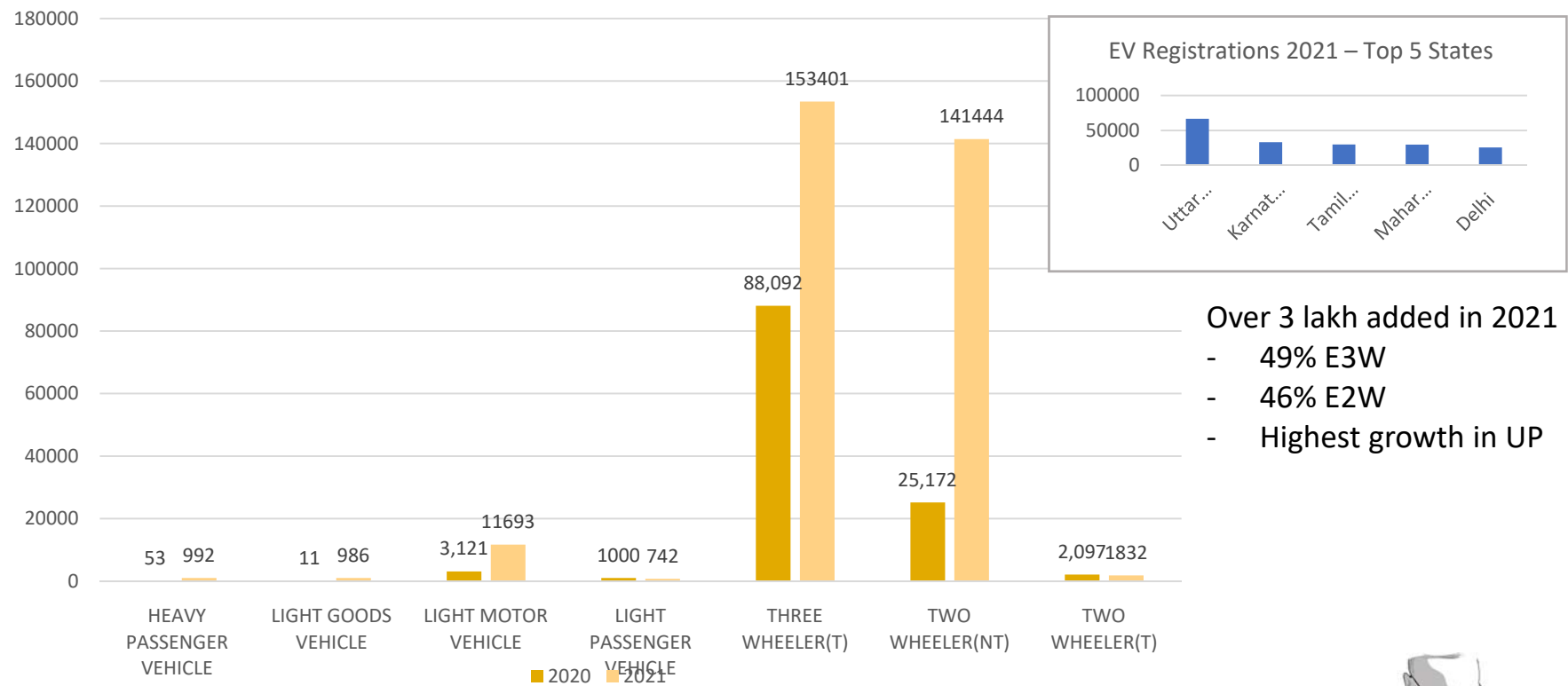
But against minimum target of 30@30

- Original target of National Electric Mobility Mission Plan of 2013: 60-70 lakh electric vehicles by 2020
- 2012-2021: India registered has 6.3 lakh E-vehicles (4.9 lakh e-rickshaws)
- 2012–2019: EV numbers -- an average CAGR of 45% from very tiny stock
- FAME incentive scheme: Corpus of Rs 10,000 crore -- to support only 15.6 lakh vehicles – (10 lakh 2-wheelers, 5 lakh 3-wheelers, 55,000 passenger cars and 7,000 electric buses)
- E2W and E3W account for more than half of the FAME subsidy Package; Charging infrastructure and four-wheelers are fourth and fifth in the pecking order

Policy and other interventions for growth

- Policy support for demand creation and supply
- Reduced cost of batteries with scale manufacturing (\$132/kWh)
- Setting up infrastructure – charging stations and batteries
- Stringent fuel economy standards that incentivize e-vehicles
- Zero-Emission Vehicle (ZEV) Mandate and Credit System that set targets for introduction of these vehicles

Demand is growing in 2-3 wheeler segments



Over 3 lakh added in 2021

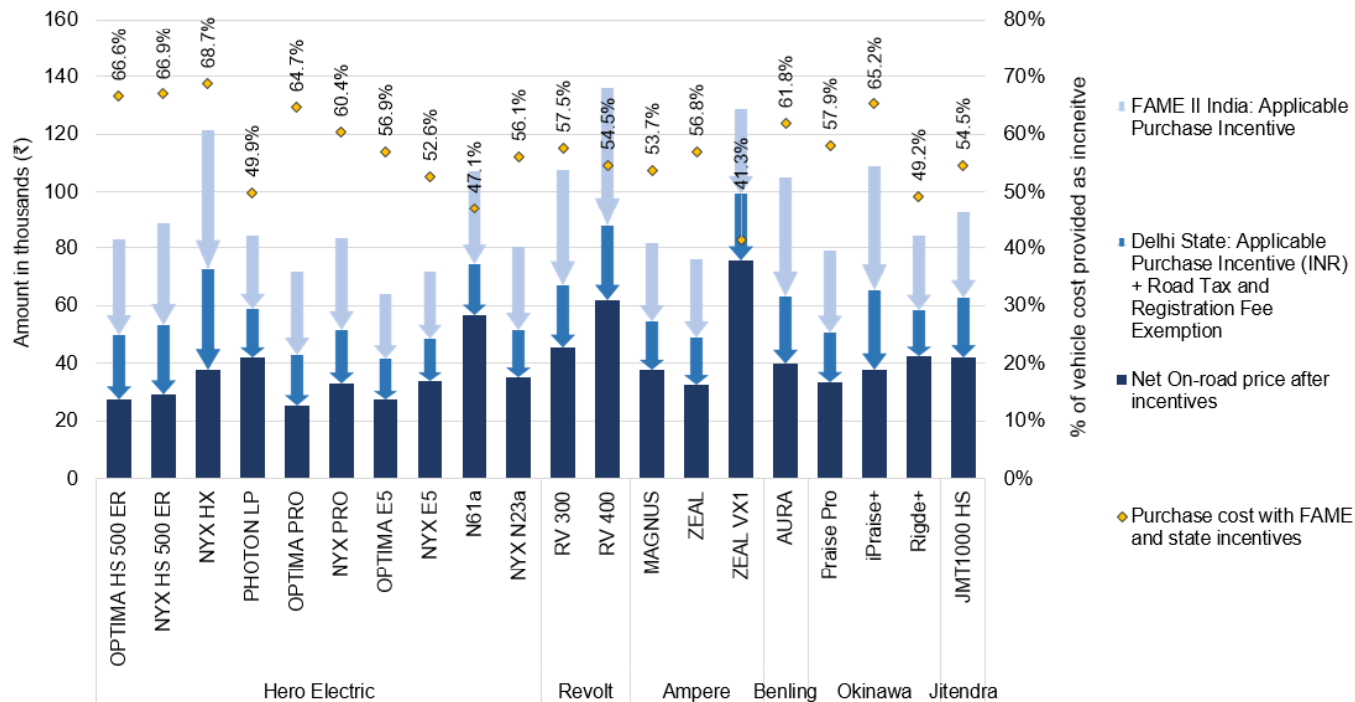
- 49% E3W
- 46% E2W
- Highest growth in UP

E2W subsidy: Central+Delhi is flattening price by 57% in 2-wheelers: pushing sales

On-road price of 2Ws with and without incentives in Delhi

FAME II lowered average price by 35%;

FAME + Delhi government incentives can reduce on an average by 57% from the onroad price (13 vehicle models in Delhi)



E-Buses for e-mobility: policy is promoting but still numbers are not adding up

- Department of Heavy Industries: India could be the second-largest e-bus market by 2030 if 4 out of 10 buses sold are electric
- FAME I: less than 500 buses registered; FAME II - target of 7,000 buses
- FAME II - tendering of 2,450 buses - could not be procured during pandemic
- Union Budget of 2021–22: funding 20,000 buses – not linked with electrification.

But we need even more than e-vehicles we need e-mobility: growth of this segment is crucial for air pollution gains in cities and for improving access

Infrastructure: Charging stations

- MoP notification on charging
- Battery swapping
- Building ready - MoHUA – Building Byelaws (2019)
- Increased FAME II support for charging to 10% of Rs 10,000-crore outlay
- Reduced GST on charging stations from 18% to 5%. But not extended to battery swapping
- Access to capital a challenge
- Need for robust EV charging standards

1,800 charging stations in India as of March 2021 (SMEV)

Needed: 4 lakh charging stations by 2026 (CSE)

State level policy is pushing E-vehicles

Need larger bottom up pressure

- 21 states have either notified or drafted EV policies
- Delhi Electric Vehicle Policy-- EV sales share increased from all India average of 1.6% to 9% in Q2 2021.

Varying scope of state policy

Differential policies: for manufacturing and for markets

But no state yet has provided a ZEV mandate – which makes it mandatory for vehicle manufacturers to sell a certain number of ZEV vehicles

Globally, this has been the biggest driver to push for e-vehicles

Impact of ZEV Mandate: Electric vehicle market shares, 2018-2020

● 2018 ● 2019 ● 2020

Data source: IEA, 2021

