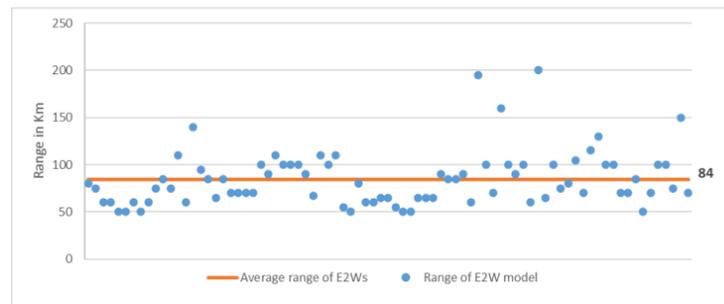


# BREAKING DOWN EV MYTHS IN INDIA

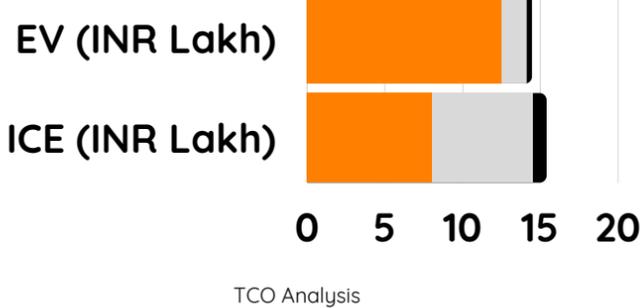


## CHARGING

## TECHNOLOGY

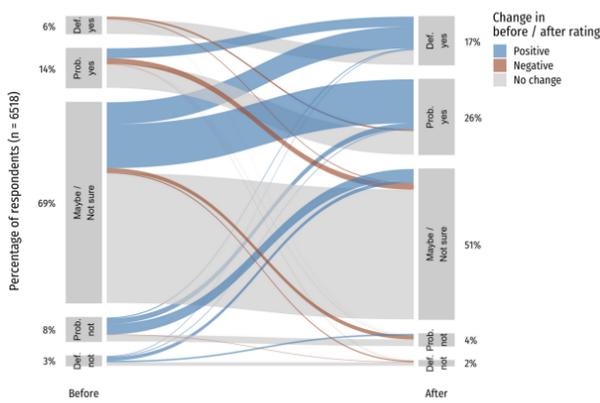
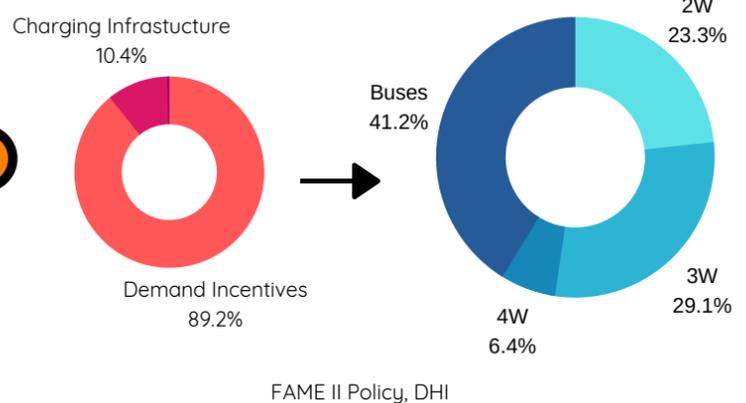


Average e-2W range, JMK Research



## ECONOMICS

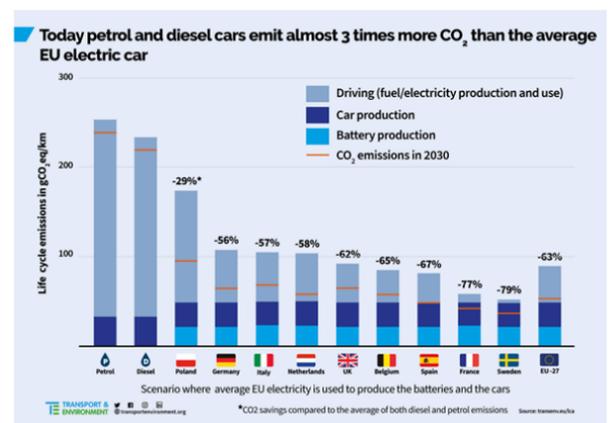
## POLICY



Laura A. Roberson et al 2020 Environ. Res. Lett. in press

## VEHICLE EXPERIENCE & SHARED MOBILITY

## EMISSIONS



## RANGE

**Myth:**  
**EVs have limited range**

### Fact:

From a sample size of 85 e-2-wheeler models and 5 e-car models on the Indian market today, average range was 84 kms and 300 kms per charge respectively, which is more than enough for day-to-day use.

## CHARGING

**Myth:**  
**There is no consensus around Charging Protocols**

### Fact:

There are 5 different DC charging protocols globally and a few more for AC charging. To ensure cost optimization and efficiency of charging infrastructure, the market is moving towards consolidation and is aligning to a single protocol which is becoming generic.

## CHARGING

**Myth:**  
**EV transition requires a dense public fast-charging network**

### Fact:

EV Charging shouldn't be likened to ICE vehicle refuelling. From global examples, regular home or destination slow AC charging infrastructure which has nominal costs should suffice most (70-80%) usage. DC fast charging would be required only in cases of highway charging or commercial charging where vehicle utilization is high and vehicle idle time is low.

## TECHNOLOGY

**Myth:**  
**EVs are slow**

### Fact:

Electric cars and high-speed electric two-wheelers have advanced high-performance powertrains. These vehicle systems can actually offer better acceleration in comparison to IC-Engine powertrains and allow comfortable speeds for intra-city driving.

## TECHNOLOGY

**Myth:**  
**Lithium ion batteries have low life**

### Fact:

Most automakers offer a battery warranty of up to 3 years for e-2-wheelers and 8 years for e-cars. After this period, battery replacement costs (if required) will be much lower as costs continue to drop. Used batteries from EVs can also be used for second-life applications like UPS, inverter batteries and stationary energy storage.

## ECONOMICS

**Myth:**  
**Electric vehicles are more expensive than ICE vehicles**

### Fact:

The cost of owning a vehicle can broadly be broken down into three categories – upfront cost (cost of purchasing the vehicle), fuel costs (cost of running the vehicle) and maintenance costs (cost of servicing and general upkeep). Running EVs for more kms/day results in substantial fuel cost savings over ICE vehicles, making EVs much cheaper over their lifetimes.

# BREAKING DOWN EV MYTHS IN INDIA

## POLICY

### Myth:

**There is no government support for electric vehicles in India**

### Fact:

In India, central and state governments have consistently promoted manufacturing as well as adoption of EVs. Capital subsidies are being provided for purchase of EVs under Faster Adoption and Manufacturing of Electric Vehicles II (FAME II), Goods & Services Tax (GST) on EVs has been reduced from 12% to 5%, an income tax deduction of INR 1,50,000+ can be claimed on the interest paid on loans taken for EVs.

## POLICY

### Myth:

**Policy support for EVs only means government fiscal subsidies**

### Fact:

A healthy set of policies is a mix of both subsidies and mandates. While the government already provides several financial incentives on EVs (FAME II), it is also imposing strict fuel and efficiency standards on ICE vehicles through mandates like Bharat Stage VI emissions norms. Other initiatives could include Corporate Average Fuel Efficiency norms, ZEV mandates.

## VEHICLE EXPERIENCE

### Myth:

**Electric Vehicle adoption could lead to unsatisfactory consumer experiences**

### Fact:

Today's new-age electric vehicles are adequately powered and can achieve speeds similar to ICE vehicles. The EV transition has allowed automakers to integrate technology like AI and IoT, thereby enhancing user experience. Research shows that just a short 3-5 minute ride in an EV can result in a significant, positive shift in people's acceptability of EVs.

## SHARED MOBILITY

### Myth:

**Electrified shared mobility could lead to range anxiety**

### Fact:

Shared e-mobility is an essential solution to solve congestion. The average daily run of a vehicle in a city is several multiples lower than the corresponding average EV range. With tech-enabled shared e-mobility infrastructure, the user is always aware of the estimated remaining range and nearest charging/battery-swapping station, making range anxiety a non-issue.

## EMISSIONS

### Myth:

**Charging EVs with India's electricity grid is worse than driving ICE vehicles**

### Fact:

Transport and Environment finds that EVs manufactured and charged with Poland's electricity reduce CO2 emissions by ~29% compared to average of petrol and diesel CO2 emissions. India, in fact, has a slightly better grid emission factor than Poland, which means EVs already reduce emissions. India's high renewable energy targets (175 GW by 2022, 450 GW by 2030) continue to make EVs even more clean.

In its long-term vision towards a successful economic recovery, India must look to include electric mobility as a critical socio-economic element.

## VERDICT

Electric mobility, today, is ready for accelerated adoption by individuals, businesses and governments at scale.

As we enter a new decade of recovery and climate action, it is critical for us to take steps towards making EVs the new normal by 2030.