THE NEED FOR DEMAND SIDE INCENTIVES TO SUPPORT EV FOUR WHEELER SALES IN DELHI

CLIMATE TRENDS

I. EXECUTIVE SUMMARY

The e-mobility revolution has taken roots in India, with electric vehicles progressing from being experimental to a mainstream choice among certain segments such as the two and three wheelers. Decarbonising India's transport sector is integral to achieving the country's international commitment of net zero emissions by 2070, as well as addressing air pollution. India has set itself ambitious e-mobility targets, and the central and state governments have made noteworthy progress in establishing a supportive policy landscape that sets a strong foundation to achieve them. Close to 25 states have notified or draft EV policies with clear targets for 2030 and demand and supply side incentives to accelerate sales, manufacturing, infrastructure and investments. These efforts have yielded good results, with EV sales surging 163% in 2021 and making up 1.32% of all vehicle sales.

One can say without a doubt that India's e-mobility era has begun. However, it is also at a point of inflection where continued policy support is critical to drive EV penetration till the e-mobility ecosystem is robust enough for sales to be market driven and EVs to become a mainstream choice across all vehicle segments. Despite a drop in battery prices, high up-front cost of EVs continues to be a significant barrier to their sales, particularly in the four-wheeler segment. This is evident by their market share, which stands at a mere 4% of all EV sales.

In this report, Climate Trends considers Delhi's Electric Vehicle policy and analyses the demand side incentives offered under it. The report aims to establish the effect of the purchase incentive subsidy offered to the first 1,000 EV four wheelers, on the costs of ownership of EVs, and by extension its effect on consumer choice. It argues for the need for continued subsidy support to drive private ownership of four wheeler EVs in Delhi.

1. **Delhi and the NCR region make up for the highest four wheelers sales in India:** Delhi has more than 1.18 crore vehicles on its roads, of which cars and jeeps make up 28%. Electric four wheelers stand at a miniscule 1,952 vehicles as of 2021. Delhi also has the second highest car sales in the country, and more than one in two people own a cehivle, showing high ambition in the average Delhiite to be a vehicle owner. With such high volumes of vehicles, including growing four wheeler sales, increasing the share of four wheeler EVs on its roads is critical to address air pollution and meet its policy targets.
2. **Demand side subsidy will bring the upfront cost of seven EV models within a Delhiite's purchasing power:** At the time that Delhi's EV policy was launched in August 2021, only two EV four wheelers met the criteria for the early bird purchase subsidy. In 2022, of the 13 new EVs expected to be launched, at least five will meet the early bird subsidy criteria. Reintroducing this subsidy will bring the upfront cost of seven EVs within the purchasing power of the average Delhi citizen and therefore increase chances of their sales.
3. **Early bird incentive makes the Total Cost of Ownership 35 – 65% cheaper for upcoming EV models:** Given that these EV variants would already be in the purchasing power of an average Delhiite with subsidy support, having an ownership and operations cost 35 - 65% cheaper than petrol will make for a strong sales pitch to consumers.

We also present international best practices from countries where EV four wheelers are becoming a mainstream choice. A study of various initiatives introduced in different geographies and markets to increase EV sales confirms the significant effect that subsidies or purchase incentives can have on consumer choice and EV adoption, thereby highlighting the importance of incorporating a phased and progressive medium- to long-term subsidy strategy for the adoption of EV four-wheelers.

II. INTRODUCTION | THE E-MOBILITY REVOLUTION IN INDIA

The transport sector around the world is going through a paradigm shift by switching to less energy intensive modes of power. E-mobility is quickly becoming the new normal in many countries[i] for transport and electric vehicle (EV) sales are surging in several geographies, with 2021 witnessing a sharp increase of 109% globally[ii].

India's e-mobility era has also begun, with electric vehicles progressing from being experimental and limited to early adopters, to becoming mainstream in certain segments such as the two- and three- wheeler markets. At the recently held COP26 in Glasgow, India announced its target of achieving net zero emissions by 2070 and integral to that would be decarbonizing its transport sector. To that end, India has committed to selling only electric cars and vans by 2040[iii], and also declared national targets of achieving EV sales penetration of 30% for private cars, 70% for commercial cars, 40% for buses and 80% for two and three-wheelers by 2030.

This acceleration in transition is motivated by a combination of factors, including rising costs of oil imports and fuel prices, rising air pollution and carbon emissions from the transport sector especially road, international commitments towards net zero emissions and climate action, and advancement in EV technology that is leading to falling battery prices and upfront vehicle cost, as well as robust charging infrastructure.

The central and state governments have made noteworthy progress in establishing a supportive policy landscape that provides incentives to accelerate sales, manufacturing, infrastructure and investments in EVs. States have shown remarkable leadership with more than 25 of them having notified or draft EV policies[iv] – each with clear targets for 2030. The Central Government's critical move of extending and modifying FAME II subsidies[v] and various other incentives has also given impetus to the growing movement.

The Indian consumer and automotive industry have responded positively to these efforts. The country registered a 163% surge[vi] in sales in 2020, constituting 1.32% of all vehicle sales. With a combined market share of 90%[vii], two- and three-wheeler EVs are the driving force behind rising sales, with the former emerging as the preferred mode of transport for short personal trips.

There is no doubt that an EV revolution has taken roots in India. However, it is also at a point of inflection where continued policy support is critical to drive EV penetration till the e-mobility ecosystem is robust enough for sales to be market driven and EVs to become a mainstream choice across all vehicle segments. Despite a drop in battery prices, high up-front cost of EVs continues to be a significant barrier to their sales, particularly in the four-wheeler segment. This is evident by their market share, which stands at 4% of all EV sales[viii], and still represents a mere fraction of all four-wheeler sales.

The Delhi government has taken cognisance of this in its proposed policy for aggregators, which will likely include EV mandates covering 10% of all newly inducted two-wheelers and 5% of all new four-wheelers in commercial fleets within six months of notification of the policy. Two years from the notification, the policy proposes 50% of all new two-wheelers and 25% of all new four-wheelers to be electric.

However, support for private ownership of four-wheeler EVs through subsidy provisions from Delhi's EV policy has been rolled back following the lapse of the early-bird window in November 2021. How this will impact sales and mass adoption of electric vehicles is yet to be clear, particularly as a range of new releases of EV four wheelers are set to enter the market over the next year. In this report, Climate Trends considers Delhi's Electric Vehicle policy and analyses the demand side incentives offered under it. The report aims to establish the effect of removal of the subsidy on costs of ownership of EVs, and by extension its effect on consumer choice.

III. DELHI'S EV POLICY | THE NEED TO EXTEND DEMAND SIDE SUBSIDY FOR FOUR WHEELERS

Delhi introduced its Electric Vehicle policy[ix] in August 2021, which aims to increase EV registrations in the city to 25% of total sales by 2025, and register 5 lakh EVs by 2024. It also focuses on increasing charging infrastructure and creating jobs in the EV market. To accelerate EV sales, the policy offers subsidies and incentives over and above the Central Governments FAME II scheme. Since the policy's launch, Delhi has been catapulted to the position of the EV Capital of India[x], with EV's achieving 10% share in the total vehicle sales – 6 times higher[xi] than national average.

As on March 2022, Delhi has 10,98,410 registered EVs[xii], with two and three wheelers leading sales at 3,64,431 units and 6,95,715 units respectively. This success can be attributed to two and three wheelers achieving price competitiveness with its ICE counterparts, in part as a result of continued subsidy support from Delhi EV policy and FAME II.

The same is not the case for four-wheelers, which are lagging far behind at 36,025 registered vehicles. One of the demand side subsidies offered under the Delhi EV policy, was the early-bird purchase incentive for four wheelers, wherein consumers could avail a discount of Rs 10,000/- per kWh subject to a maximum of Rs 1,50,000/- per EV. This provision, however, was offered only to the first 1,000 registered four-wheeler EVs and was only applicable to indigenous vehicles with advanced batteries listed as being eligible under FAME II. This subsidy now stands discontinued, and four-wheeler EVs can only avail road tax and registration cost exemptions under Delhi's policy.

We assess the effect of demand side incentives on consumer choices and present international best practices that have driven demand for EVs among consumers.

1. Delhi and the NCR region make up for the highest four wheelers sales in India

While Delhi may have achieved a considerable share of EV sales in its vehicle mix from two and three wheeler EV sales, it cannot solve its problem of rising air pollution and carbon emission without focusing on pushing four wheeler EV sales. In 2021, Delhi recorded a 19.1% increase in sale of personal cars[xiii], with close to 1,40,000 registered cars. Of this number, electric four wheelers in 2021 stood at a miniscule 1,952 vehicles[xiv].

Delhi had the second highest car sales in India[xv] in 2021, and is known to be the hub for personalized motorized vehicles. As on 2020, Delhi has 1.18 Crore vehicles on road and cars and jeeps making up 28% of this[xvi]. In the last decade, the number of vehicles per 1,000 people has gone up to 643 units, meaning more than one in every two people own a vehicle, highlighting the average Delhiite's ambition to be a vehicle owner. Long-term trends suggest that four-wheeler share in Delhi's vehicle inventory can be expected to continue growing in coming years. The road transport sector has emerged as the biggest and most constant source[xvii] of year round air pollution in Delhi and transforming it is a viable sustained solution to ease air pollution in the capital. Therefore, continuing to offer demand side incentives to push EV four wheeler penetration is critical not only for the success of Delhi's EV targets, but also to bring down tailpipe and carbon emissions.

2. Demand side subsidy will bring the upfront cost of seven EV models within a Delhiite's purchasing power

In 2022, 13 new models of electric four wheelers are expected to be launched in the price range of Rs 9,00,000 to Rs 60,00,000 (Table 1). Of these, five EV models would meet the existing eligibility criteria of the early-bird subsidy previously offered under Delhi's EV policy. If this subsidy was reintroduced, the upfront cost of these five new EV models along with the existing two models would fall within the price range of Rs 5 to 15 lakhs (Table 2), which represents nearly 75% of all vehicle sales[xviii] in the country, and is the most important price segment for mass adoption. Therefore, the average Delhi consumer would have seven models of EVs to choose from over their petrol counterparts, compared to just two variants that existed when the early-bird subsidy was launched. With more options in the market within the consumers purchasing power, there are higher chances of sales for EV four wheelers.

3. Early bird incentive makes the Total Cost of Ownership 35 – 65% cheaper for upcoming EV models.

We conducted an analysis of the Total Cost of Ownership (Table 3) over eight years for the ICE and EV variants of six upcoming and existing models. This reveals that the upfront and operational cost of the EV variants, with the support of Delhi's early bird subsidy, would be 35-65% cheaper to own in the long run than their ICE counterparts. Given that these EV variants would already be in the purchasing power of an average Delhiite with subsidy support, having an operations cost so much cheaper than petrol will make for a strong sales pitch to consumers.

Table 1: Upcoming EV four wheeler models to be launched in 2022

S. No.	EV model	Expected price ex showroom	Eligible for subsidy previously offered
1	M$M KUV 100 K6	9,00,000	Yes
2	M$M XUV 300	15,00,000	Yes
3	Tata Altroz EV	13,00,000	Yes
4	Tata Nexon Facelift	18,00,000	Yes
5	Tata Hbx EV	14,00,000	Yes
6	Renault Zoe	8,00,000	No
7	Citroen eCC21	8,00,000	No
8	Hyundai Lonig	30,00,000	No
9	MG ZS EV Facelift	25,00,000	No
10	MG Astor EV	14,00,000	No
11	Nissan Leaf	30,00,000	No
12	BYD E6	26,00,000	No
13	VW-ID4	60,00,000	NO

Table 2: A comparison of the on-road price of EV and ICE variants of 6 EV four wheelers, with and without Delhi's early bird subsidy.

S. No.	EV Model	Price of Petrol variant on road	Price of EV variant without Delhi's early bird subsidy	Price of EV variant with Delhi's early bird subsidy
1	Tata Nexon xz	11,76,772	15,35,022	13,85,022
2	Tata Tigor xz+	14,09,726	12,52,776	11,02,776
3	M$M KUV 100 K6	8,09,624	7,47,000	5,97,000
4	M$M XUV 300 W6	11,13,123	13,47,000	11,97,000
5	**Tata Altroz XZ+**	9,52,847	11,47,000	9,97,000
6	Tata Punch HBX	8,34,419	12,47,000	10,97,000

Note: The on-road price of EV variants takes into account the road tax and registration fee exemption and FAME II subsidy of max Rs 1,50,000

Table 3: A comparison of Total Cost of Ownership of ICE and EV variants of 6 EV four wheelers with and without Delhi's early bird subsidy over 8 years.

S. No.	EV Model	TCO of Petrol variant over 8 years	TCO of EV variant without Delhi's early bird subsidy	TCO of EV variant with Delhi's early bird subsidy	% reduction in TCO of EV VS petrol variant
1	Tata Nexon xz+	22,76,866	15,89,151	14,36,054	36.9
2	Tata Tigor xz+	23,61,006	13,31,905	11,78,808	50
3	M$M KUV 100 K6	18,81,718	8,05,707	6,49,176	65.5
4	M$M XUV 300 W6	21,85,217	14,30,657	12,77,914	41.52
5	Tata Altroz XZ+	19,69,824	12,31,266	10,78,066	45.27
6	Tata Punch HBX	18,51,396	13,31,266	11,78,066	36.37

IV. GLOBAL LESSONS IN PURCHASE INCENTIVE POLICY DESIGN

Purchase incentives and subsidies are a widely used policy instrument to accelerate EV adoption around the world, with a variety of models and different levels of success. A study of various initiatives introduced in different geographies and markets to increase EV sales confirms the significant effect that subsidies or purchase incentives can have on consumer choice and EV adoption, thereby highlighting the importance of incorporating a phased and progressive medium- to long-term subsidy strategy for the adoption of EV four-wheelers.

Delhi as a state has consistently incorporated international standards in other areas relating to transport and e-mobility, such as exemptions towards registrations and road taxes, vehicle scrapping, low-cost facilities for EV charging, just to name a few. International experience could provide further guidance in the design of a sustainable and phased subsidy policy, which could spur four-wheeler EV adoption in the state.

1. China

China launched its NEV/EV policy in 2009. Subsidies on electric-vehicle purchases have helped China become the world's largest market for EVs, accounting for roughly[xix] 50% of global sales. Beijing had planned to phase out the subsidies entirely by December 2020 and started rolling them back in June 2019, claiming[xx] that production had gotten cheap enough to no longer warrant government support. Since 2009, plug-in electric vehicles qualify for substantial rebates (up to US$9000) from both the central and local governments. In urban centres such as Shanghai and Shenzhen, EVs are exempt from new vehicle registration lotteries and fees. These policies have led to significant EV market share growth in recent years.

Starting in 2017, EV subsidies in China have gotten smaller[xxi] and technological requirements tighter. In June 2019, rebates were cut an additional 45% to 60% and removed altogether for EVs with ranges below 250 km per charge. The central subsidies for New Energy Vehicles (NEVs) were initially scheduled to be phased out after 2020. Additionally, China finalized a NEV mandate policy in 2017 targeting vehicle manufacturers which sought to move incentives away from production to a credit-based system determined by characteristics such as electric range and energy efficiency. Under the mandate, starting in 2019, all large manufacturers (producing or importing at least 30,000 passenger cars annually) must achieve NEV targets of 10% in 2019 and 12% in 2020.

But as Beijing tried to wean consumers off subsidies in 2019-20, China's EV sales slowed, with the industry posting five consecutive months of declining sales for the last half of 2019. Then the pandemic hit, and EV sales plummeted a dramatic 54% in January and a greater 77% in February[xxii]. The sudden decline threatened the government's target of having NEVs account for 20% of auto sales by 2025. **To get the market back on track, Beijing extended subsidy support for two years, setting a new phase-out deadline of 2022. As Beijing granted the extension, NEV sales staged a comeback. According to the China Association of Automobile Manufacturers, China's EV sales (which account for the vast majority of NEV sales) likely reached 1.3 million units in 2020—up from the 1.1 million units sold[xxiii] in 2019. The association expects sales will top 1.8 million this year.**

2. Japan

Japan declared an intention to be carbon neutral by 2050 in a statement from the prime minister in October 2020. In December the Ministry of Economy, Trade and Industry (METI) released the Green Growth Strategy[xxiv] (New energy vehicle or battery operated vehicle policy)

METI announced that by the mid-2030s Japan aims to have all new passenger cars electrified[xxv]. To reach this goal, it proposed[xxvi] to revisit fuel efficiency regulations, public procurement of EVs, expansion of charging infrastructure and large-scale investment in EV supply chains. A decision on options is to be made in mid-2021. Speculation is that the fuel efficiency standards for LDVs may be strengthened to meet the more ambitious mid-2030 and carbon neutrality targets. In 2020, Japan was one of the few markets where EV sales dropped[xxvii] more than overall car sales. Sales are expected to recover after **Japan doubled its subsidies for passenger ZEVs registered from the end of 2020[xxviii]. Other measures[xxix] such as tax exemptions on BEVs, PHEVs and FCEVs have been extended for two years. A purchase incentive amount of 800,000 yen ($7,000) max, or 1500 yen/km has been allocated for purchase of EVs, PHEVs, HVs**. The changes had the desired effect. In January 2021, electric cars sales **increased around 35%[xxx]** relative to January 2020.

3. Norway

Norway is among the most electrified countries when it comes to transportation. **The success of the Norwegian government in driving EV adoption has depended on a long-term strategy for phased support, that dates as far back as the 1980s. The speed of the transition to e-mobility in Norway correlates closely with government policy and incentives for purchasers. A key factor that helped accelerate EV adoption[xxxi] has been the cost, which has long been maintained at levels cheap enough to compete with conventional vehicles. Norway lowered taxes in EVs to keep the price down, and even exempted road tolls as an extra incentive.**

The opposite approach was to raise taxes on traditional cars – a kind of pollution tax. In Norway this included a 25% VAT tax, a carbon tax close to 20%, and smaller amounts for weight tax, NOX tax, and a car scrapping fee. The second is a supply of renewable electricity. Norway's secret is hydroelectric power from 1500 plants around the country. Many of these are low impact designs called run-of-river plants that don't require dam building. Hydropower provides 96 per cent of all electricity[xxxii] in Norway.

As a result, **almost sixty-five percent of new passenger cars sold in Norway in 2021 were electric; in addition, 22% were plug-in hybrids. Put differently, only 14% of new cars were sold without a plug.**

4. Germany

Following an enthusiastic uptake of subsidies towards EVs, the German government announced that **its "innovation premium" for e-car buyers will be extended until 2025**. Under this scheme, Germany has provided incentives for ZEV purchases[xxxiii] with an upfront amount of EUR 9 000 for ZEV & 6750EUR for PHEVs. The German Energy and Economy ministry has said that the support payment, which was launched in 2016 and topped up in July 2020, has given e-mobility[xxxiv] in Germany a "big boost" and the number of applications continues to grow to new record levels. More premiums (1.25 billion euros to help purchase some 273,000 vehicles) were claimed in the first half of 2021 than in the whole of 2020. Since the start of the premium programme in 2016, a total of 693,601 vehicles have applied for funding as of 1 July 2021.

Sales of purely electric cars in Germany soared by 207 per cent between 2019 and 2020 and by 104 per cent until November 2021 compared to the same period last year, making it the world's second-largest market for this technology behind China. **Without the subsidies, the market would be "a fraction of what it is now," Matthias Schmidt"** (European Automotive Market Analyst.). This subsidy, introduced in July 2020, has played a key role in the record increase in the market share of electrified vehicles in Germany, AFP noted.

5. California, USA

Launched by the California Air Resources Board in 2009, the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) makes clean vehicles more affordable for fleets through point-of-purchase price reductions. It is a first-come first-served incentive that reduces the incremental cost of commercial vehicles. Incentives up to USD 150,000(max) on the price of the vehicle and also the technology used, these have been made available for eligible ZEV technologies. HVIP[xxxv] has disbursed more than USD 120 million for the uptake of ZEV buses and trucks. Following widespread success in California, the programme has now been replicated in New York[xxxvi] and is planned for adoption in Massachusetts[xxxvii] and New Jersey[xxxviii].

V. CONCLUSION

Subsidy support is a significant factor for the private adoption of EV four wheelers until price parity is reached. The analysis in this report shows that TCOs see a significant reduction with subsidies and price differences can be covered well within battery lifecycles. The examples from various countries where e-mobility, especially among private ownership, is becoming mainstream have relied strongly on providing demand side incentives to boost sales in the early years. Demand side incentives, when designed in a phased manner, and linked to other price factors such as battery prices, performance such as range/battery capacity, play a critical role in accelerating sales.

ANNEXURES | Detailed calculations for reduced Total Cost of Ownership

Assumptions
Delhi purchase incentive offered to first 1000 four wheelers: Rs 1,50,000 | **Central FAME II subsidy:** Rs 1,45,000
TCO time period: 8 years as per battery warranty offered by companies | **Mileage & Range:** As per ARAI figures
Petrol Price: Rs 105.41 Rs per Litre as on 6th April 2022 | **Cost of the vehicle:** Sourced from various platforms like Cardekho, Cartrade
Electricity cost with subsidy on tariff for EVs: Rs 2 per unit
Electric car cost calculation includes waivers of road tax, registration fee and central government subsidy

Tata Nexon xz+

Petrol car	Tata Nexon xz+	Electric car	Tata Nexon xz+	Electric car	Tata Nexon xz+
Cost of vehicle on road	1176772.0	Cost of vehicle on road without Delhi subsidy	1535022.0	Cost of vehicle on road with Delhi subsidy	1385022.0
Time period Yrs	8.0	Time period Yrs	8.0	Time period Yrs	8.0
Total Km run	160000.0	Total Km run	160000.0	Total Km run	160000.0
Fuel required @17kmpl	9411.8	Fuel required @ 310 km/charge	516.1	Fuel required @ 310 km/charge	516.1
Cost per ltr	105.4	Cost per unit (without subsidy)	8.0	Cost per unit (with subsidy)	2.0
Total Fuel cost	992094.1	Total fuel cost (Charge)	4129.0	Total fuel cost (Charge)	1032.3
Cost per km	6.2	Cost per Km	0.0258	Cost per Km	0.0065
AMC cost for 8yrs in Rs	108000.0	AMC cost for 8yrs in Rs	50000.0	AMC cost for 8yrs in Rs	50000.0
TCO for 8 yrs	2276866.1	TCO for 8yrs	1589151.0	TCO for 8yrs	1436054.3

Tata Tigor xz+

Petrol car	Tata Tigor xz+	Electric car	Tata Tigor xz+	Electric car	Tata Tigor xz+
Cost of vehicle on road	1409726.0	Cost of vehicle on road without Delhi subsidy	1252776.0	Cost of vehicle on road with Delhi subsidy	1102776.0
Time period Yrs	8.0	Time period Yrs	8.0	Time period Yrs	8.0
Total Km run	160000.0	Total Km run	160000.0	Total Km run	160000.0
Fuel required @20.3kmpl	8000.0	Fuel required @ 310km/charge	516.1	Fuel required @ 310km/charge	516.1
Cost per ltr	105.4	Cost per unit (without subsidy)	8.0	Cost per unit (with subsidy)	2.0
Total Fuel cost	843280.0	Total fuel cost (Charge)	4129.0	Total fuel cost (Charge)	1032.3
Cost per km	5.3	Cost per Km	0.0258	Cost per Km	0.0065
AMC cost for 8yrs in Rs	108000.0	AMC cost for 8yrs in Rs	75000.0	AMC cost for 8yrs in Rs	75000.0
TCO for 8 yrs	2361006.0	TCO for 8yrs	1331905.0	TCO for 8yrs	1178808.3

M$M KUV 100K6

Petrol car	M&M KUV100 K6	Electric car	M&M KUV100 K6	Electric car	M&M KUV100 K6
Cost of vehicle on road	809624.0	Cost of vehicle on road without Delhi subsidy	747000.0	Cost of vehicle on road with Delhi subsidy	597000.0
Time period Yrs	8.0	Time period Yrs	8.0	Time period Yrs	8.0
Total Km run	160000.0	Total Km run	160000.0	Total Km run	160000.0
Fuel required @17kmpl	9411.8	Fuel required @ 147km/charge	1088.4	Fuel required @ 147km/charge	1088.4
Cost per ltr	105.4	Cost per unit (without subsidy)	8.0	Cost per unit (with subsidy)	2.0
Total Fuel cost	992094.1	Total fuel cost (Charge)	8707.5	Total fuel cost (Charge)	2176.9
Cost per km	6.2	Cost per Km	0.0544	Cost per Km	0.0136
AMC cost for 8yrs in Rs	80000.0	AMC cost for 8yrs in Rs	50000.0	AMC cost for 8yrs in Rs	50000.0
TCO for 8 yrs	1881718.1	TCO for 8yrs	805707.5	TCO for 8yrs	649176.9

M&M XUV 300 W6

Petrol car	M&M XUV 300 W6	Electric car	M&M XUV 300 W6	Electric car	M&M XUV 300 W6
Cost of vehicle on road	1113123.0	Cost of vehicle on road without Delhi subsidy	1347000.0	Cost of vehicle on road with Delhi subsidy	1197000.0
Time period Yrs	8.0	Time period Yrs	8.0	Time period Yrs	8.0
Total Km run	160000.0	Total Km run	160000.0	Total Km run	160000.0
Fuel required @17kmpl	9411.8	Fuel required @ 350km/charge	457.1	Fuel required @ 350km/charge	457.1
Cost per ltr	105.4	Cost per unit (without subsidy)	8.0	Cost per unit (with subsidy)	2.0
Total Fuel cost	992094.1	Total fuel cost (Charge)	3657.1	Total fuel cost (Charge)	914.3
Cost per km	6.2	Cost per Km	0.0229	Cost per Km	0.0057
AMC cost for 8yrs in Rs	80000.0	AMC cost for 8yrs in Rs	80000.0	AMC cost for 8yrs in Rs	80000.0
TCO for 8 yrs	2185217.1	TCO for 8yrs	1430657.1	TCO for 8yrs	1277914.3

Tata Altroz XZ+

Petrol car	Tata Altroz XZ+	Electric car	Tata Altroz EV	Electric car	Tata Altroz EV
Cost of vehicle on road	952847.0	Cost of vehicle on road without Delhi subsidy	1147000.0	Cost of vehicle on road with Delhi subsidy	1097000.0
Time period Yrs	8.0	Time period Yrs	8.0	Time period Yrs	8.0
Total Km run	160000.0	Total Km run	160000.0	Total Km run	160000.0
Fuel required @18kmpl	8888.9	Fuel required @ 300km/charge	533.3	Fuel required @ 300km/charge	533.3
Cost per ltr	105.4	Cost per unit (without subsidy)	8.0	Cost per unit (with subsidy)	2.0
Total Fuel cost	936977.8	Total fuel cost (Charge)	4266.7	Total fuel cost (Charge)	1066.7
Cost per km	5.9	Cost per Km	0.0267	Cost per Km	0.0067
AMC cost for 8yrs in Rs	80000.0	AMC cost for 8yrs in Rs	80000.0	AMC cost for 8yrs in Rs	80000.0

Tata Punch HBX

Petrol car	Tata Punch	Electric car	Tata HBX	Electric car	Tata HBX
Cost of vehicle on road	834419.0	Cost of vehicle on road without Delhi subsidy	1247000.0	Cost of vehicle on road with Delhi subsidy	1097000.0
Time period Yrs	8.0	Time period Yrs	8.0	Time period Yrs	8.0
Total Km run	160000.0	Total Km run	160000.0	Total Km run	160000.0
Fuel required @18kmpl	8888.9	Fuel required @ 300km/charge	533.3	Fuel required @ 300km/charge	533.3
Cost per ltr	105.4	Cost per unit (without subsidy)	8.0	Cost per unit (with subsidy)	2.0
Total Fuel cost	936977.8	Total fuel cost (Charge)	4266.7	Total fuel cost (Charge)	1066.7
Cost per km	5.9	Cost per Km	0.0267	Cost per Km	0.0067
AMC cost for 8yrs in Rs	80000.0	AMC cost for 8yrs in Rs	80000.0	AMC cost for 8yrs in Rs	80000.0
TCO for 8 yrs	1851396.8	TCO for 8yrs	1331266.7	TCO for 8yrs	1178066.7

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