VISTA 2018 – PRISM OF POSSIBILITIES

Explore the Unexplored

The International Business Summit of IIM, Bangalore

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Presents

Trojan Horse

Future of Electric Vehicles in India

After a long day at work Mr. Anil Oberoi, Head of Operations, India at Nissan Motor Company Ltd. is heading home. Stuck in traffic, he looks outside the window. He notices the smoke arising from the exhaust of vehicles around, a thick blanket of smog all around. His mind is drawn towards the news article he read in the morning newspaper, the vast potential of the electric vehicle market in India. He thinks about the future of vehicles in India - the one with electric vehicles, a promising solution to rising pollution.

The Indian Automobile Industry is currently ranked 5th largest in the world and is set to be the 3rd largest by 2030. It caters to a population of 1.2 billion. With this growing motorization curve, the problem of urban traffic congestion and air quality has worsened. At present, the dominant vehicle technology is fossil fuel based. Regarding CO2 emissions in India, the transport sector contributes around 18%. Also, a majority of petroleum demand in India is met by exports. Hence the Indian government is trying to advance the alternative fuel-based vehicle technology. The Electric Vehicle (EV) is one of the alternative solutions to overcome the crises.

He then wonders, should Nissan tap into this market in India? If yes, then what would be the most feasible way to achieve it. He seeks your help on this idea.

EV market in India

Presently, the electric vehicle industry in India is in its nascent stage. This is in contrast to international markets US, China & Europe which are quite mature. China is the leader industry. It holds nearly 50% share of the global electric vehicle market. India has an invisible industry with a global share of 0.1%. The Indian EV Industry has two electric car manufacturers, about 10+ manufacturer's in two Wheelers and 3-4 OEM's in Electric buses segments. Most other automobile OEM's (Original Equipment Manufacturer) are now considering the prospect of introducing EV models in India.

The EV market in India stood at about 25,000 units in FY 2017. Of the total EVs sold, 92% were two-wheelers. The remaining 8% were electric cars and four-wheelers, according to the Society of Manufacturers of the Electric Vehicles. To get a perspective on how different states fair at this, a study conducted showed that 4,330 EVs were sold in Gujarat, 2,846 in West Bengal, 2,467 in Uttar Pradesh and 2,388 in Rajasthan during FY 2017.

Earlier in 2017, former Power Minister Piyush Goyal announced that he aspires to see no petrol or diesel car being sold in India by 2030. This provides a huge opportunity for market growth in India for EVs.

In India, Govt's focus is on public transport vehicles before focusing on private vehicles for this electrification journey. Their priority order is electric buses, three wheelers, fleet cars, two wheelers and then private cars.

To push this plan into action, the Central Government has taken key initiatives such as: DHI has launched a scheme to assist all 1Mn+ populated cities to buy Electric Buses. For this it is giving subsidy support of INR 150 crores per city and INR 15 crores for Charging infrastructure). EESL (Energy Efficiency Services Ltd), a Power Ministry PSU, having expertise in large aggregated procurements, had come out with a tender of 10,000 electric cars and about 4000 chargers – these cars will be used by Government PSU's & ministries as part of their fleet cabs. The tender was won by Tata Motors Ltd and Mahindra and Mahindra. However, procurement has been delayed due to lack of car charging points. Moreover, to help in this electrification journey - the FAME (Faster Adoption and Manufacturing of Hybrid and Electric vehicles scheme) scheme has set a target of increasing the number of electric vehicles to 4% of overall new vehicle sales over five years starting FY 2019. Further, the department of heavy industries plans to spend INR 9,381 crore in this phase.

Regarding adoption in the country, it is believed that that two-wheeler (2W) fleets and three-wheelers (3Ws) would be the first to adopt, followed by intra-city buses, corporate cabs, and government fleet. Private cars are likely to more time for adoption.

Nissan Company

Nissan Motor Company Ltd is a Japanese multinational automobile manufacturer headquartered in Nishi-Ku, Yokohama. The company sells its cars under the Nissan, Infiniti, and Datsun brands with in-house performance tuning products labeled Nismo. The company traces its name to the Nissan zaibatsu, now called Nissan Group.

Nissan is the world's largest electric vehicle (EV) manufacturer, sold about 163,000 electric vehicles globally in 2017. This was a 10% jump over the last year sales. The top-selling vehicle of the carmaker's lineup is the Nissan Leaf, an all-electric car and the world's top-selling highway-capable plug-in electric car in history; more than 320,000 have been sold worldwide since its launch in 2010. It is now available in 51 markets and 54,000 of these were sold in FY2017 itself. The company plans to sell 10 lakh EVs by the year 2022.

Nissan Motor India Pvt Ltd is the Indian subsidiary of Nissan Motor Company of Japan. The company was incorporated in 2005 and offers innovative and exciting products across hatchback, MUV, SUV and sedan segments in India. Nissan in India has a portfolio of two brands, Nissan and Datsun. In February 2008, Nissan, together with its global alliance partner Renault signed a MoU with Government of Tamil Nadu to set up a manufacturing plant at Oragadam, near Chennai with an investment of INR 45 billion over a period of 7 years. On 17 March 2010, the Renault-Nissan alliance plant was inaugurated in a record time of 21 months since its ground-breaking ceremony in June 2008.

Nissan's Current Performance

There has been a decline in the sales of Nissan cars. It achieved a 1.6 percent market share and ninth position among car makers in India. Both Nissan and Datsun saw sales decline during FY18. The Datsun brand has been the focus of the car maker in the past four years. Together, the two brands clocked a local volume of 52,796 units. In FY16, the figure stood at 39,389 units, compared with 47,474 units in FY15, while sales in FY17 picked up to 57,300 units, thanks to the Datsun brand.

In FY18, however, sales dropped to 52,796 units, according to numbers provided by SIAM (Society of Indian Automobile Manufacturers).

The company had a launch cycle of one to two years for new products so far, while plans are to launch one in six months starting this festival season, he said. Earlier, the company management said it planned to achieve the five percent target by 2020. Nissan has pushed its timeline to achieve the goal of five percent market share in India by two more years, from the earlier fixed 2020.

Competitors

Mahindra & Mahindra

Mahindra Electric Mobility Limited was earlier known as the Reva Electric Car Company, is based in Bangalore. Mahindra Electric began its journey into the EV space in 2001 by launching Mahindra Reva which was India's first electric car. Then they launched the Mahindra E20 whose current version is on the roads in India. Mahindra is the first and pioneer of electric vehicles in India. It sells around 180-200 units per month across India in all models. Recently, the company launched a new EV model, eVerito and is expecting sales of 350-400 per month. It also has a dedicated R&D center in Bengaluru where more than 200 engineers are working on electric vehicle technology and refinements. Since 2010, the company has sold 7000+ vehicles under EV segment and has completed over 50 million miles of electric vehicle driving in India.

Mahindra Electric has partnered with Lithium- a Corporate Fleet firm which provides electric corporate fleet services in Bengaluru. It has partnered with OLA to launch 300 EVs in Nagpur. It has also participated in the EESL and has supplied over 150 eVerito in the first EV tender in India and partnered with NTPC to launch charging stations in Noida and Delhi. The company is increasing capacity at its Bengaluru facility to make battery packs from 500 per month to 800 -1000 per month in the next two to three months. All the EVs have a battery packed by Mahindra while importing cells from China. It has tied up with Zoom Car to sell 200 cars (e2o Plus). They are planning to increase the production capacity that can help them to sell over 5000 units per month over the next two years in all category vehicles.

Tata Motors

Tata Motors entered the Indian market by winning a big tender of 10,000 cars by the EESL (Energy Efficiency Services Limited). They launched an electric vehicle Tigor EV with a plant in Saanand, Gujarat. Across the variants, the car will be equipped with a single speed, automatic transmission; it allows the customers to enjoy the driving experience, maximized efficiency, and seamless acceleration. The electric drive systems for the Tigor EV are developed and supplied by Electra EV – a company which has been established to develop and supply electric drive systems for the automotive sector. The car Tigor can run for around 120-150 km on one full battery charge. They delivered the first cars to EESL recently.

Tata Motors will commercially launch many electric cars in India. The company has already showcased an electric variant of the Tiago and has been testing the Nano Electric quite extensively. With the Tigor Electric already in production, Tata already has about three options to pick from. The Nano EV could

be the first electric car that the automaker launches in India, followed by the Tigor and Tiago electric vehicles. As the electric car charging infrastructure is inadequate in India, Tata Motors is setting up 400 charging stations in Delhi alone and has plans for more cities. They plan to develop their own vendor for chargers as well.

Challenges in the sector

Chargers market is also at a very nascent stage and is mostly limited to pilot projects. Currently, few players are present in the market, largely the small 2W Chargers. Most of these chargers are AC chargers with about 90 minutes charging time for full charge. These are claimed as Fast Chargers. Currently, the vehicle range is around 100 km per full charge for passenger cars, while the desired range is close to 200 km. High ambient temperatures, like during the afternoon, reduced the range to 85-90 km per charge. Currently, there are limited green products available in the market to choose from. Also, the cost of electric vehicles are much higher than conventional internal combustion engine cars. People doubt their minds whether to buy these or not? This dilemma plays a vital role in the market growth. Even for the companies, the undeveloped supplier base in India poses a challenge for

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- "How India fares in the electric vehicle race", LiveMint, Jun'18, M.Ghosh

- "Standing Up India's EV ecosystem", Ernst & Young report

- "India EV Story", Innovation Norway Report

- "Nissan eyes 5% market share in India by 2022", Business Standard, Jun'18 Gireesh Babu

- "Is Nissan on a cliff edge in India", Economic Times, July'18, Nabeel Khan

Disclaimer - The case has been created by ICON (Consulting club, IIMB) team; not Strategy& views

Question Set

Round 1- Mr. Anil Oberoi has to show a roadmap for the company at the upcoming board meeting scheduled for next month. He is not sure whether EV's provides a lucrative market for Nissan. The company faces stiff competition from the Internal Combustion Engine market and competitors in the EV market. Help Mr. Oberoi in deciding on whether he should enter the EV market of India or not.

Kindly submit the answer as PowerPoint deck. Main deck, not more than 5 slides (rest can be in the appendix), should have an executive summary, supporting financial calculations in excel.

Round 2- Nissan India has decided to enter the Indian EV market. What should be its execution plan?

Kindly submit the answer as PowerPoint deck answering the following points. Main deck, not more than 15 slides (rest can be in the appendix), should have an executive summary, supporting financial calculations in excel.

- ➔ Entry and implementation roadmap (timelines, partners/ JV/ greenfield etc.)
- ➔ Target customers and marketing plan
- ➔ Key capabilities that would help them differentiate from competition (e.g., R&D knowhow, the capability to build a charging infrastructure network, etc.)
- ➔ Product types/ product mix

Exhibits

Section 1 (Sales)

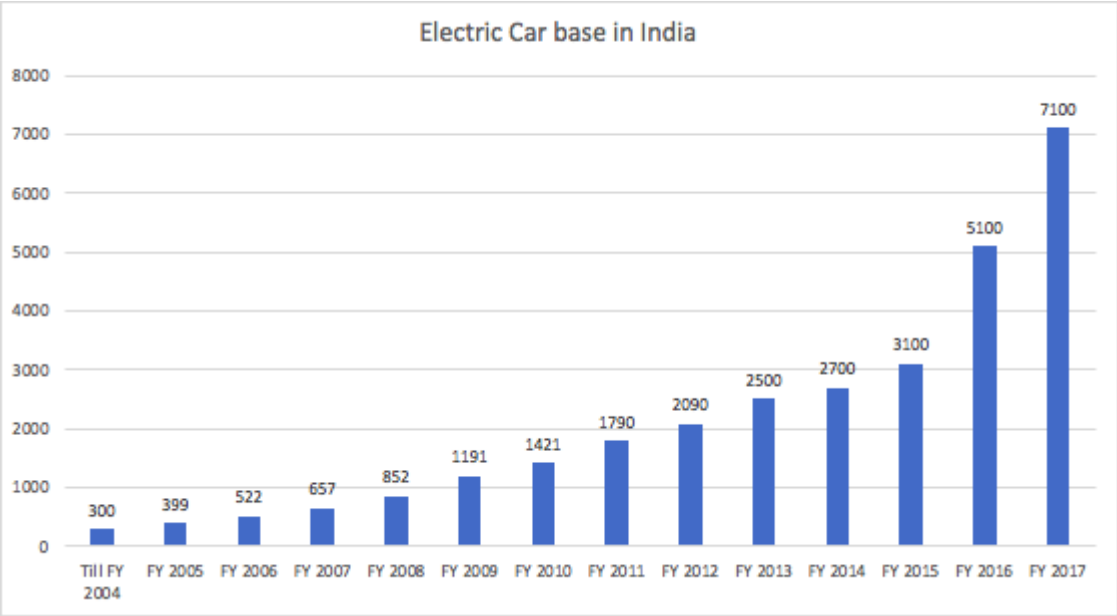
a. Nissan Market share in India compared to top four companies

OEMs	FY 2017	FY2018	Market Share FY17	Market Share FY18
Maruti Suzuki	14,43,641	1643467	47.38	49.99
Hyundai	5,09,705	536241	16.73	16.31
M&M	2,36,130	248859	7.75	7.57
Honda	1,57,313	170026	5.16	5.17
Nissan	57,300	52796	1.88	1.61

b. Electric Vehicles Annual Sales Volume by Type, India

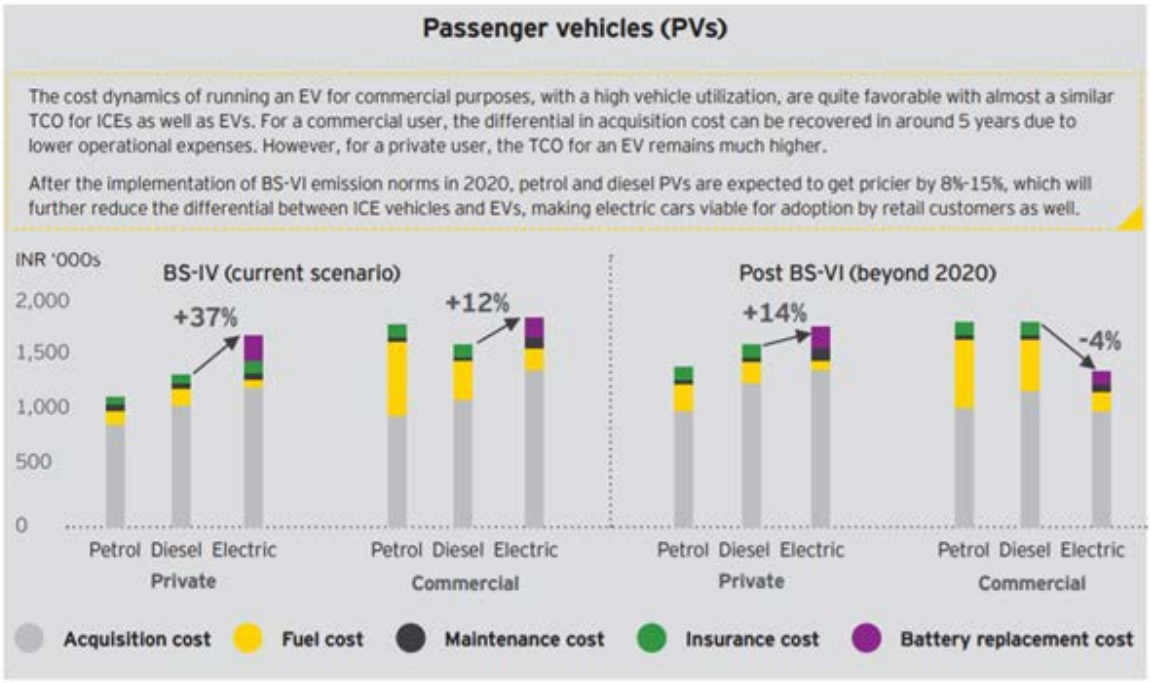
	Cars	Two Wheelers	Total
FY 12	359	97500	97850
FY 16	2000	20000	22000
FY 17	2000	22000	24000

c. Electric Car Base in India

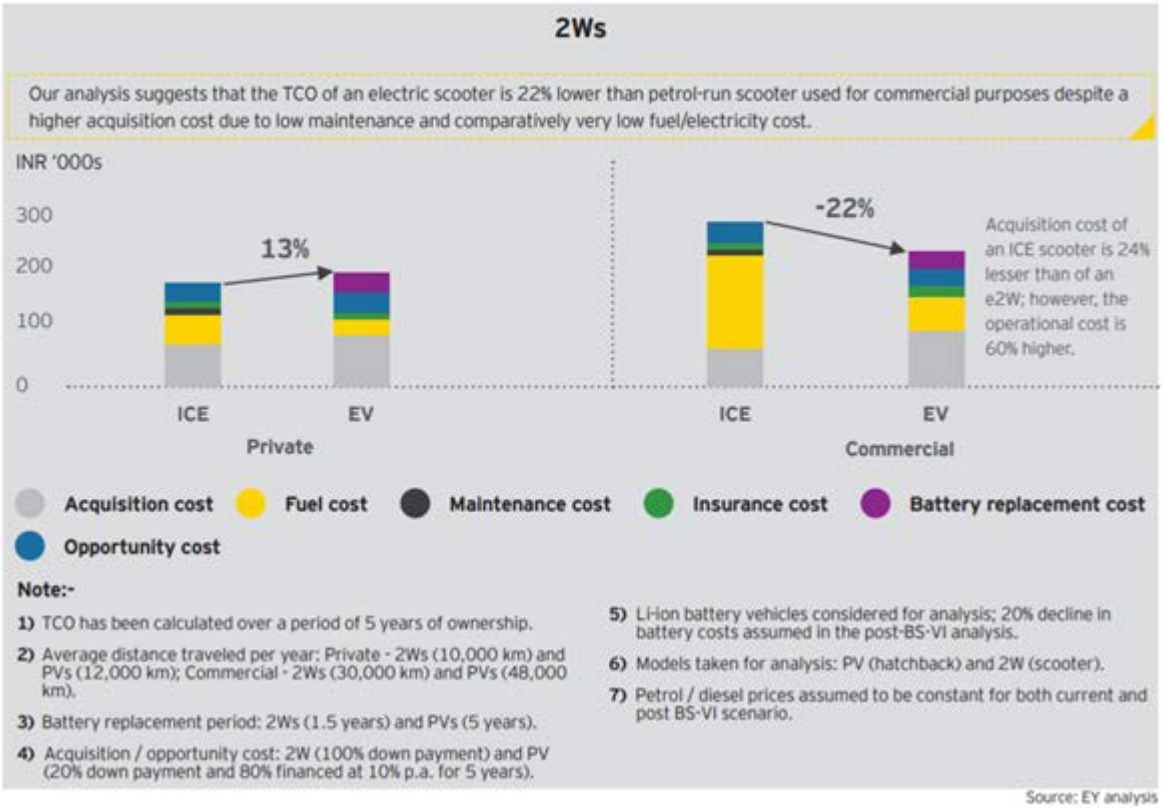


Section 2 (a. PV v/s b. 2W):

a.



b.



Note:-

1) TCO has been calculated over a period of 5 years of ownership.
2) Average distance traveled per year: Private - 2Ws (10,000 km) and PVs (12,000 km); Commercial - 2Ws (30,000 km) and PVs (48,000 km).
3) Battery replacement period: 2Ws (1.5 years) and PVs (5 years).
4) Acquisition / opportunity cost: 2W (100% down payment) and PV (20% down payment and 80% financed at 10% p.a. for 5 years).
5) Li-ion battery vehicles considered for analysis; 20% decline in battery costs assumed in the post-BS-VI analysis.
6) Models taken for analysis: PV (hatchback) and 2W (scooter).
7) Petrol / diesel prices assumed to be constant for both current and post BS-VI scenario.

Source: EY analysis