

## **Electric Vehicles Policy: Need of Proactivism**

India has declared its intention to have only electric cars in the country by 2030. This deadline to phase out fossil fuel based cars from Indian markets by 2030 is a decade ahead of the 2040 deadline, set by Britain to stop selling petrol and diesel cars. It is going to generate a market potential of more than USD 1 trillion, and manifold more, if combined with the multiplier impact in the downstream and collateral value chains, by 2030. The market for electric vehicle batteries alone would not be less than USD 300 billion. In case we are able to facilitate and promote domestic value addition, producing original equipment, components and assemblies and the finished products, the resultant turnovers and incomes would generate immense derived demand for collateral manufacturing and manufacturing and investments. However, while embarking on this target of having only electric vehicles (EV) by 2030, if India would largely depend on foreign players, who would source completely knocked down kits (CKD) from outside and merely assemble their products domestically, we would lose this one time opportunity to kick start growth, employment, turnovers, income, demand and investments at a scale unprecedented so far.

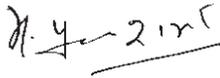
The 'all EV target' is going to generate a USD 300 billion or Rs. 20 lakh crore market for the EV batteries alone by 2030, let other equipments, accessories and the vehicular industry be separate and manifold over this, as India would be the 3rd largest car market in the world by 2020. Hence, unless the government proactively accedes to the need to put in place a robust and globally competitive ecosystem for domestic manufacturing value chain for electric vehicles, the Chinese, and other alien companies would skim this USD 300 billion i.e. 20 lakh crore and almost above USD 1 trillion (i.e. Rs 65 lakh crores) worth of the market for EV batteries for the vehicles and other components. Lack of a clear vision and any long term policy to facilitate indigenous capacity building for all electric vehicles, including uncertainty about technology options may prove to be most fateful against grooming domestic capacities for 'Made by Bharat'. Mere making in India by the foreign MNCs out of the completely knocked down (CKD) kits, would be of no avail to kick start growth, generate employment, develop technologies and in developing a robust domestic supply chain for this purpose. Foreign MNCs like Tesla, Siemens etc. would reap all the benefits by assembling imported kits from their own subsidiaries abroad in the name of Make in India. Chinese companies have already begun to flex their manufacturing with unbelievable cost economies. Chinese electric vehicle startup 'NIO' has launched its first mass produced model in December, 2017, the ES8. The ES8 starting at 4,48,000 Yuan (\$ 67,700) is half the price of Tesla's 8.36,000 Yuan (\$1,26,400) Model X in China. Nio also enjoys considerable advantage of government subsidies for electric vehicles. No Indian player would be able to take considerable share in the pie of the market for electric vehicles. The government should build an electric vehicle manufacturing consortium, with heavy fiscal support for developing precompetitive technologies. The battery manufacturing knowhow of ISRO, has to be made accessible to domestic players. In Europe and US all the technologies developed out of the government support are extended liberally through industry consortium route.

Government of India is yet to take a call for the raw material supplies for 100% EV target. Even the government think tank, the NITI Aayog is also fully aware of the major supply chain constraints arising out of low mineral reserves for Li batteries, absence of EV battery procedure, lack of requisite technology indigenously, a lack of government initiative or even any plan to build domestic capabilities for EV batteries and lack of initiative to promote any downstream manufacturing value chain. Even the coordination among various stakeholders, an high perceived risk beyond the capacity of the individual potential domestic investors, especially lack of any raw material sourcing plans and higher interest rates, lack of reserves for Lithium-ion components, such as Lithium, Cobalt and Nickel as well as constraints in getting processed functional materials, used in anodes and cathodes are also a big challenge.

Country's Lithium requirements alone would be not less than 60,000 tones per year and most of the proven Lithium deposits are in the Lithium triangle of Chile, Argentina and Bolivia. So, unless long term supply contracts are forged with these nations, including joint ventures and lease rights for procuring Lithium at affordable prices the ambitious target of 100% EV would pose a challenge. Securing Cobalt would be a graver challenge due to geographical concentration of its deposits because of associated geopolitical risks. China is already very proactive vis a vis India and has acquired mines abroad for cheap, consistent and dependable supplies of these minerals. NITI Aayog itself has agreed that "India does not have reserves of some of the most important Li-ion components, including Lithium, Cobalt, Nickel, and Copper used in conductors, cables and busbars."

India announced its decision to go for 100% EV ahead of other countries, but strangely, without forging deals for key raw materials, technology developments and domestic supply chain development. So now it could face tough bargaining. Proactive vision like that of China warrants the need to forge international partnerships and joint ventures to secure access to key minerals in line with our proposed battery technology and roadmap ahead of disclosing our plans to achieve large scale domestic production of EV batteries. Atleast an industry consortium for complete supply chain and final vehicle manufacturing was to be put forth before declaring the 100% electric vehicles' target.

India should have learnt a lesson from the myopic blunder committed in the area of solar power. In solar power, inspite of a lapse of 3 years since our embarking on the world's most ambitious path of having 100 GW solar capacity, we could not harness domestic capacities to manufacture Silicon ingots, Silicon Wafering, PV cells, PV panels, Photo Voltaic central Inverters capable to convert the variable direct current (DC) output of a photovoltaic solar panel into a utility frequency alternating current (AC) of 5000 KVA that can be fed into a commercial grid or to be used by a local, off-grid electrical network. India could emerge as the world technology leader in solar power with complete manufacturing value chain and accessories if we had made even feeble attempts to facilitate development, promotion and protection of domestic players instead of favouring Chinese imports by imposing antidumping duties. Even the US had imposed up to 238% antidumping duties on Chinese hardware. Japan and EU also slapped heavy antidumping duties on cheap Chinese dumping. Rather, before embarking upon the most ambitious target of 100 GW of Solar power, a second to none ambitious target in the world, India should have put in place a complete solar industry consortium comprising of companies capable of manufacturing Silicon ingots, thin wafers out of these ingots, assemble photo voltaic cells and panels, produce PV central inverters and other accessories. Most of the advanced nations out of economic patriotism use their proactive vision to use the opportunity to groom domestic industry to meet the indigenous needs of the market, before taking mega leaps of this kind, instead of opting to oblige alien country companies out of such a technology leap, and that to the enemy country of first order. So, India should not commit the same myopic mistake of blessing the Chinese and other foreign companies, while embarking on this revolution to transit from fossil fuel vehicles to electric vehicles in a big way. But, total lack of any vision and plan to groom the domestic players including the startups is not going to help. India needs to create an industry consortium for electric vehicles.



(Prof. Bhagwati Prakash Sharma)

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