India's Push for Electric Vehicles by 2030 would be a Win for Chinese Electric Car Manufacturers

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*[**Abstract**: With the objective of reducing both greenhouse gas emissions and the spending on oil imports, the Government of India has sought to do away with internal combustion engine powered vehicles by 2030 after which only electric vehicles will be manufactured in India. Faced with identical objectives, China went on to become the leading manufacturer of electric cars as on date with a very robust hold on battery manufacturing and has developed a price competitive electric vehicle market. With India pushing for electric vehicles by 2030, the country would be a ready market and an investment destination for Chinese electric vehicle manufacturers.]*

For the past 100 years, Internal Combustion Engine (ICE) powered vehicles and readily available oil supplies have dominated automobiles. There are winds of change and many believe that the $2 trillion global auto industry is on the verge of transformation as all Electric Vehicles (EVs) begin to replace ICE vehicles. While EVs and Plug-in Hybrid Electric Vehicles (PHEVS) currently account for less than 1 per cent of the cars produced annually, globally, many believe that this is the beginning of an "Electric Revolution." A research group has predicted that EVs could represent 40 per cent of auto sales and 30 per cent of global cars in 20 years and the growing global electric vehicle fleet will be disruptive to gasoline demand by 2031. There are many reasons to explain the coming transformation. Firstly, technology costs have declined significantly, with battery costs approximately 20 per cent their cost five years ago. Further declines are in the offing as substantial battery capacity has come on stream in China. Secondly, charging infrastructure is being put in place in China, the US and other countries around the world. And thirdly, EVs have lower operating costs than ICE vehicles even at a low prevailing oil price of less than $60 per barrel. Thus, as technology costs drive the initial price of EVs lower, price parity with ICE powered

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vehicles and lower operating costs make a compelling economic case for EVs. In 2016, 507,000 EVs and PHEVs were sold in China, a 53 per cent increase from 2015. Meanwhile, 222,000 EVs and PHEVs were sold in Europe (a 14 per cent increase) and 1,57,130 units sold in the US (a 36 per cent increase). China has now pulled ahead of other countries, a leadership position which is unlikely to be relinquished for very compelling reasons. China has three fundamental paths that it may follow. First, it can choose to live with a rapidly growing number of ICE vehicles which implies air pollution and energy dependence. Second, the government can restrict the transportation choices of its citizens in order to balance environmental concerns. Or third, the country can embrace EV technologies that enable its citizen to have their cars without endangering the air quality in its cities. The reality is that China with a combination of 1.3 billion population with rising per capita income is creating a demand for personal transport that can only be met in an environmentally sustainable way by departing from traditional technologies. The fact is that China is already the largest auto market in the world, and the 28 million vehicles produced in 2016 is expected to grow to 40 million in 2025. Maintaining air quality is a big problem. Thus, China has no alternative but to lead the way in the development of electric vehicle industry.[1]

Same set of compelling reasons prevail in India which are driving China the EV way. The National Democratic Alliance (NDA) government consequently wants only EVs to ply on India's roads by 2030 as part of its commitment to reduce greenhouse gas emissions under the Paris Agreement on climate change, and to reduce spending on oil imports, which according to an estimate could double to an annual $300 billion by that year. At the auto industry's annual conference in early September 2017, road transport minister Nitin Gadkari put automakers on notice that they had no option but to switch to environment friendly alternatives, to petrol and diesel. He said that "they have to adopt whether they like it or not." The urgency also comes against the backdrop of the fact that six Indian cities, including the capital of New Delhi, are amongst the 15 most polluted cities in the world as per the ranking accorded by the

[1] Perkowski, J. (2017), "China is Leading the World's Boom in Electric Vehicles – Here's Why," Forbes, July 01. Available at: https://www.forbes.com/sites/jackperkowski/2017/06/01/china-is-leading-the-worlds-boom-in-electric-vehicles-heres-why/#2f7e76542f2e

World Health Organisation (WHO). Government has sent out strong signals regarding its intent on EVs by planning orders of supply of 10,000 electric cars in September 2017 to replace petrol and diesel cars used by government and its agencies. Further, under the Goods and Services Tax (GST) regime which was ushered in on 1st July 2017, EVs are being taxed at 12 per cent compared with 28 per cent that petrol and diesel vehicles are subjected to. Hybrid vehicles are taxed at 43 per cent. The government is also considering allowing duty free import of EVs as well as lowering electricity costs. India, while it proposed to ban the sale of ICE vehicles in favour of EVs by 2030, is in the company of the Netherlands and Norway (by 2025) and UK and France (by 2040).[2]

China, which already has the world's biggest and rapidly growing EV market, is yet to come out with a time frame to end sales of fossil fuel based vehicles. Rather, it is proceeding in a graded mode. It requires the vehicle manufacturers to sell 10 per cent of their output as EVs by 2019, which this would be raised to 12 per cent in 2020. Obligation of sale of EVs for 2021 would be revised later.[3]

Thus, the Indian government's target of doing away with the ICEs by 2030 is ambitious on all accounts. In the current scenario, the Indian electric car scenario is quite barren. Electric vehicle sales stood at 22,000 units in the year ending 31st March 2016 and of these, only 2,000 units were four wheelers. India is otherwise a thriving automotive industry serving the local and global markets, particularly in small cars. Over 19 million people, making up 5 per cent of India's workforce, are employed in the sector which is mostly centered on ICEs. If the country moves towards an EV-led future, it will require new, efficient vehicle components such as high density batteries. The vehicle manufacturers and suppliers will need to capitalise on the wave and would need to collaborate closely, invest smartly, establish global tie ups to get a leg up on technology and quickly build up scale. The Indian Space Research Organisation (ISRO)

[2] Kotecha, A. (2017), "How India is Paving the Way for an Electric Future," *Livemint*, Nov 17. Available at: https://www.livemint.com/Industry/kDnvPAnuizO1ZSWSGlxtTL/How-India-is-paving-the-way-for-an-electric-future.html

[3] IANS (2017), "Over 112,000 Charging Points in Beijing for Electric Vehicles," Business Standard, December 31. Available at: https://www.business-standard.com/article/news-ians/over-112-000-charging-points-in-beijing-for-electric-vehicles-117123100237_1.html

has agreed to transfer its technology for the manufacture of lithium batteries to qualified industries.[4]

Maruti Suzuki India Ltd. has invested Rs 1200 crore to set up a plant manufacturing lithium-ion batteries, in partnership with the Japanese Donor Corp. and Toshiba Corp. Mahindra and Tata are building up product folios in specific segments. The National Thermal Power Corporation (NTPC) is seeking a pan-India license to set up charging stations for EVs.[5]

However, Indian entrepreneurs apprehend that it would be tough to keep e-cars affordable due to high battery cost, which alone is more than half the cost of the final product, i.e. the EV.[6] These entrepreneurs contend that affordability is a concern and that a solution to this eludes them.

It seems that India's EV push may be a win for Chinese car makers. India's aspiration to electrify all vehicles in the country by 2030 is a move that is already catching the attention of car makers such as BYD Auto Co. and SAIC Motor Corporation Ltd. in China that are already investing in the technology. The scenario of smart phones from China flooding the Indian market is likely to be witnessed in the EV sector. In recent years some Chinese car makers have used competitive prices and successful branding strategies to expand rapidly in the domestic market which is now one of the world's fastest growing markets for electric vehicles. China's new energy vehicle ownership is likely to increase from 1.09 million in 2016 to 5 million in 2020. Chinese electric car makers are expected to grow in strength, technology and capital during this period and there would be an out-bound investment boom in the decade 2020–30 as China's domestic market would begin to saturate. On the strength of a well-developed battery technology, Chinese electric cars continue to have comparative price advantage, which will be conducive for making inroads into the Indian market.

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[4] Kumar, V. and S. Kaushik (2017), "Towards an Electric Vehicles Only Future," *Livemint*, August 25. Available at: https://www.livemint.com/Opinion/b0zdGcvIz0TsqpvijRanQL/Towards-an-electric-vehicles-only-future.html

[5] *Op cit*. 2

[6] Doval, P. (2018), "Tough to Price E-cars Affordably: Maruti," *Times of India*, January 30. Available at: https://timesofindia.indiatimes.com/business/india-business/tough-to-price-e-cars-affordably-maruti/articleshow/62703507.cms

The future competition between Chinese electric car makers and the western countries may follow the contour of smart phone dynamics favouring China in price competition over its rivals.[7] Strategically, China has positioned itself to become the foremost leading player in the $240 billion battery industry in the next 20 years. Its battery manufacturers are aggressively expanding, adding to its competitive edge. China's global market share is likely to be 70 per cent by 2020.[8]

It is inevitable that Chinese companies will bring competition and challenge for local Indian electric car makers, as happened in the case of smartphone. Chinese companies would aspire to set up plants in the country where local workers may be employed.

[7] Weijia, H. (2017), "India Should Not Block Chinese Firms from Catering to Demand for Electric Cars," *Global Times*, May 30. Available at: http://www.globaltimes.cn/content/1049222.shtml

[8] Perkowski, J. (2017), "EV Batteries: A $240 Billion Industry in the Making that China Wants to Take Charge Of," *Forbes*, August 31. Available at: https://www.forbes.com/sites/jackperkowski/2017/08/03/ev-batteries-a-240-billion-industry-in-the-making/#3cb94c523f08