Managing the Dragon Blog Post

Why China Leads The World In Electric Vehicles

By: Jack Perkowski | May 31, 2017

In 2016, almost 95 million autos were made and sold globally, nearly all powered by an internal combustion engine (ICE). For the past one hundred years, ICE powered vehicles, and readily available oil supplies, have dominated autos. The winds of change are blowing, however, and many believe that the $2.0 trillion global auto industry is about to undergo a significant transformation as all electric vehicles (EVs) begin to replace ICE vehicles.

While electric vehicles and plug in hybrid electric vehicles (PHEVs) currently account for less than one percent of the cars produced annually, many believe that we are at the beginning of an "Electric Revolution." In its recent comprehensive and authoritative report on the subject, Bernstein, a prominent Wall Street research firm, predicted that EVs could represent 40 percent of auto sales and 30 percent of the global car parc in twenty years. Likewise, UBS, a leading global financial services company, believes that a growing global electric vehicle fleet will be disruptive to gasoline demand by 2031.

There are many reasons for the growing belief that EVs represent the future of autos. First, technology costs have declined significantly, with battery costs approximately 20 percent of their cost five years ago. Also, further technological innovations, as well as substantial new battery capacity coming on stream in China, bode well for further price declines. Secondly, a charging infrastructure is now being put in place in China, the United States and other major countries around the world. Finally, EVs have lower operating costs than ICE vehicles, even at today's oil prices. As technology costs drive the initial price of EVs lower, price parity with IC powered vehicles and lower operating costs will make a compelling economic case for EVs.

In terms of the development of its EV industry, China has now pulled ahead of other countries, a leadership position which it is unlikely to relinquish. In 2016, 507,000 EVs and PHEVs were sold in China, a 53 percent increase from 2015. Meanwhile, 222,200 EVs and PHEVs were sold in Europe, a 14 percent increase; and 157,130 units were sold in the United States, a 36 percent increase from the prior year.

Why is China leading the way in embracing EV technology? The answer may simply be that China has no other choice. As a country, China has three fundamental paths it may follow. First, China can choose to live with a rapidly growing number of ICE powered vehicles on its roads, with all that implies as far as air pollution and energy independence. Second, the government can restrict the transportation choices of its citizens in an effort to balance environmental concerns. Or, three, the country can embrace EV technologies that enable its citizens to have their cars without jeopardizing air quality in its cities.

When ICE powered vehicles came of age, the United States, with its large land mass and suburban sprawl into low-density, car-dependent communities, was the largest auto market in the world. Today, China is the world's largest auto market and represents most of the new worldwide demand for autos. The circumstances in the United States and China as far as the composition of their respective markets and cities could not be more different.

The reality in China is that the combination of its 1.3 billion population with rising per capita incomes is creating a demand for personal transportation that cannot be met in an environmentally sustainable way using traditional technologies. 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 by 2025. In the United States, there is nearly one car on the road for every man, woman and child. In China, there is less than one car for every six individuals. While the number of cars per person in China may never reach U.S. levels, auto penetration will surely grow from where it is today.

In industry after industry, the story plays out the same way in China. Due to the dynamics created by a large population, there is no such thing as a small opportunity, or a small problem in the country. In China, the country's large population means that there are only big opportunities and big problems. In this context, improving air quality, while at the same time meeting the transportation needs of a large, growing and increasingly wealthy urban population, is a very big problem.

As a country, China is much more densely populated than the United States. Populations in the country's top ten cities range from six to twenty-two million, and there are more than 160 cities with a population of one million or more. By comparison, populations in the top ten U.S. cities range from one to 8.6 million, and there are only ten cities with populations over one million.

Moreover, Chinese cities are likely to become even more crowded in the years ahead. Approximately one-half of China's 1.3 billion population still reside in the countryside, but the trend is for the urban population to continue to increase. In the coming years, up to 240 million people are expected to move into cities. As a result, between now and 2025, population growth in six Chinese cities will be among the ten fastest growing cities in the world. By 2025, over one-third of the world's 600 largest mega and middleweight cities will be located in China.

Over the last one hundred years, the internal combustion engine has been the technology of choice for an auto industry that has been built around consumers in the United States, a country with wide open spaces and a relatively low density population. With consumers in a densely populated China now driving new global demand for autos, the technology of the past may not be as suitable to today's circumstances. For this reason, China is likely to continue to lead the way in the development of the electric vehicle industry.

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