

The reasons for the attention of private sector car manufacturers in the production of electric cars and plug-in hybrids

Paradigm Shift in the Global Automotive Industry

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These days, we are witnessing that some private sector automakers have moved towards assembling hybrid electric vehicles, especially plug-in hybrids, and are doing extensive advertising about this. The number of these automakers will definitely reach three by the end of this year. Now the question is why the Chinese, and of course our private sector automakers who all have Chinese partners, have been inclined towards producing hybrid vehicles in the Iranian market?

Despite much debate about the indirect pollution of all-electric or plug-in hybrid vehicles, the production of these vehicles will reach more than twenty million units per year in the next two to three years. However, today, strategy, marketing, and policy specialists in the automotive industry and the environment believe that all-electric or plug-in hybrid vehicles are beneficial for the environment if the urban electricity they consume is produced by non-fossil renewable sources such as wind turbines, solar cells, or hydroelectric or geothermal power plants. If the electricity

they consume is supplied by thermal power plants with natural gas, furnace oil, or coal fuels, or even nuclear power plants, not only will they not help reduce greenhouse gas pollution, but they will also increase their emissions. Thus, it can be concluded that all-electric vehicles are suitable for countries where the majority of electricity is produced. The electricity in them is supplied by renewable energy sources, i.e. wind, water, sunlight or geothermal energy. Otherwise, the only place for greenhouse gas emissions is from the exhaust pipes of cars to the chimneys of thermal power plants, which has a more adverse effect on the destruction of the ozone layer. However, these general discussions about the suitability of electric cars for developed countries that generally supply their electricity from renewable sources, but we are witnessing the rapid expansion of the production of all-electric cars (BEV, EBV) or plug-in hybrid cars (PHEV). Perhaps today the main reason or advantage of the desire for electric cars in various markets is not environmental issues, but their much higher technical performance (much more power and torque) compared to gasoline cars of the same price.

In many developed countries, the maximum production period for cars with internal combustion engines has been announced from 2025 to 2030, and after 2030, they will no longer allow the production of non-electric or hybrid cars. One Scandinavian country has announced 2025 as the last year for the production of cars with internal combustion engines, and other European countries, including the German government, have also announced 2030 as the last year for the production of cars with internal combustion engines. The United States has also announced 2030, and France and Britain have announced 2035. Southeast Asian countries have generally decided in the same way, and finally, China, in an ambitious goal like Germany, has announced 2030 as the last year for the production of cars with combustion engines.

Now we understand why Chinese automakers are designing and

producing all-electric or plug-in hybrid cars at full speed these days. Chinese first-tier automakers, which generally have American shareholders and are located in the free zones of the south of the country, have turned to designing and producing all-electric vehicles to compete with Tesla, and Chinese second-tier automakers, which are located in the central regions of the country and are generally controlled by provincial or federal governments, have also turned to designing and producing plug-in hybrid vehicles and, of course, all-electric vehicles in the medium term. In fact, the Chinese consider this paradigm shift in the global first-tier automobile industry from producing vehicles with internal combustion engines to producing vehicles with electric engines as an opportunity to leapfrog and overtake their competitors, and by quickly understanding this paradigm shift, they are quickly moving towards producing all-electric or hybrid vehicles in order to penetrate the final markets, namely North America and Europe.

But what is the reason for producing and assembling these vehicles in our country? Certainly, in addition to the lower import tariff for separate parts, there are other reasons for this. The most important reason is the Chinese need for different markets with especially hot weather conditions to test and examine the performance of the batteries and electric motors of electric vehicles or plug-in hybrids. The lithium-ion technology used in the batteries of electric vehicles is weak against extreme heat and extreme cold. Therefore, to find out their defects, they must be tested in markets with very hot weather, such as Iran, or very cold weather, such as Russia. Also, the performance of electric motors of electric vehicles and plug-ins decreases in high heat, so there is a need for long-term studies and feedback in hot markets with heavy traffic, such as the Iranian market, especially the city of Tehran, to test these vehicles. Therefore, the Iranian market is a very suitable option for Chinese first-generation electric vehicles or plug-in hybrids, so that their defects

can be identified and resolved in subsequent generations.

But in the meantime, state-owned domestic automakers are still developing and designing combustion engines without understanding the paradigm shift in the automotive industry. Perhaps these design projects were very revolutionary ten years ago, but today they will have no other result than a waste of resources and no return on investment, because the global automotive industry is moving towards non-internal combustion engines at a much faster pace than the country's state-owned automakers' officials imagined.