Energy Musings

Insights into the Energy Industry

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Energy Musings *contains articles and analyses dealing with important issues and developments within the energy industry, including historical perspective, with potentially significant implications for executives planning their companies' future.*

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The Changing Electric Vehicle Landscape

The EV revolution is continuing with all the support and directives governments can mount. Still, we have seen some slowing of the momentum, which promotors will say is more about overall economic growth trends and concerns. But the biggest news about this revolution is that the Chinese are becoming larger players with better and cheaper vehicles than they previously offered. Fifty Chinese EV companies, twice the previous number and the largest contingent to attend any global auto show, were at the recent Munich auto show. The EV landscape is changing, and like how China has taken over the solar panel market, onshore and offshore wind components and installations, and the lithium-ion battery market, EVs are their next target. The legacy auto company managers are beginning to wake up to the new competitive landscape. What can they do about it?

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The Changing Electric Vehicle Landscape

A recent article by **INSIDEEVs** reported on June 2023 global sales of electric vehicles (EV) along with how they fared during the first six months of the year. The headline summed up the market's health: *"Global EV Sales In June 2023: Over 1.26 Million Plug-In Cars Sold - It was almost a new record, marginally behind December 2022."* That sounds pretty good, no? But no record? Is that because there is no Christmas in June? Or maybe it's because EV buyers, wanting to maximize subsidies they can receive when buying these costly vehicles and fearing reductions in 2023 rushed to buy in December?

With June sales falling below last December's, is there a problem in EV land? The June and year-to-date EV sales figures would suggest that if there is one, it is not obvious. June sales were up 38% over last year, and the six-month figures were 40% higher than for the first half of 2022. Sounds like a healthy market. Unfortunately, because not all automakers release monthly sales it is hard to know about market conditions monthly.

What is changing is the competitive landscape for EVs. China is leading the charge both as the largest EV market on the planet and now as its auto companies are crashing western automobile markets – except the U.S. The IAA Mobility auto show in Munich, Germany demonstrates just how much the EV playing field is changing in Europe, and is a precursor of a changing worldwide market.

Chinese EV manufacturers stormed the auto show, setting up in 50 company booths. That is not only twice the number that showed up at the last show, but it also is the largest number of Chinese EV companies to attend any global auto show. Forget Paul Revere's cry *"The British are coming!"* Now it's *"The Chinese are coming!"* And because the Chinese EV companies have prized battery efficiency over vehicle bigness, the industry hopes to gain market share with lighter, cheaper models.

Before the Munich auto show, Luca de Meo, CEO of auto manufacturer Renault, told a French radio show audience, *"It's clear that they are more competitive in the electric car value chain. I think they are a generation ahead of us."* His message to his competitors was: *"We need to catch up very, very quickly."*

Yes, global auto manufacturers are coming to understand that China's autos and its EVs are suddenly in a different league than they were a few years ago. Their cost and quality progress are reminiscent of how the Japanese auto industry evolved – from small, poor quality cars to now providing some of the highest quality vehicles in the global market covering the entire range of models, and they are lower cost.

We have written about how the Chinese industrial strategy is based on leveraging its unique combination of critical battery raw material resources, cheap energy, and low-cost labor to build the key components of the clean energy transition and dominate this growth business. A year ago, we noted that Chinese auto manufacturers were planning an assault on the European market by building plants there, as that market, with its impending ban on selling internal combustion engine (ICE) vehicles, shifted to a product China is dominating. The Chinese auto companies are there now.

In 2023's first quarter, China surpassed Japan to become the world's largest auto exporter. That ranking came due to strong demand from Russia and a growing clamor for Chinese low-cost autos and EVs elsewhere. According to the China Passenger Car Association, for the first eight months of 2023, Chinese passenger car exports increased by 72% to 2.3 million vehicles, of which 25% were EVs. In August, BYD, China's largest car company, exported 25,000 EVs, followed by Tesla China's 19,500 units.

Exhibit 1. BYD's New Seal To Challenge Tesla Model 3 Is 15% Cheaper

Source: China News Service via Getty Images

Questions abound about the health of the Chinese economy. If it is entering a period of historically low growth, what does it mean for auto sales in the country? That uncertainty helps drive Chinese auto manufacturers' focus on exports, as the industry has surplus capacity and needs to keep workers employed. With subsidies encouraging the purchase of EVs, Chinese car buyers are turning away from ICE vehicles. That leaves the industry, with its capacity to manufacture 15 million ICE vehicles a year, with a supply of cheap vehicles to export at a time when inflation has buyers seeking low-cost vehicle options.

China's export markets are targeting more than Europe. Exporting vehicles to Russia, hurt by sanctions cutting off its access to Western auto supplies, is easy since they can be shipped from China by rail. Other Southeast Asia markets can also be served by rail exports. Exporting elsewhere means putting them on ships, which has been a limitation, but which is changing. Still, China has garnered large market shares in Southeast Asia, Australia, South America, and Mexico.

In Australia, Chinese vehicle sales in the first half of this year nearly doubled from last year. Chinese autos captured a 16% market share, surpassing South Korean vehicle sales, and is now challenging its Japanese competitors.

Growing auto exports to European markets began by targeting the U.K., but now the industry is increasing shipments to Belgium and Spain, which have important car-importing facilities and act as gateways to other European Union countries. Germany's auto market is in China's sights. However, the industry's ability to rapidly penetrate these markets is limited by its inability to export cars. *"They are building cars a lot faster than they are building ships,"* said Michael Dunne, a former president of General Motors Indonesia. That is changing.

According to VesselsValue, a London shipping data firm, Chinese auto manufacturers like BYD and Chery, along with European and Singaporean car shippers who handle much of China's car exports, have placed almost all of the 170 car-carrier orders now pending worldwide. Before, only about four ships a year were ordered. The motivation for building these car carriers is to reduce shipping costs as well as expand capacity. According to Daniel Nash of VesselsValue, two years ago the daily cost of chartering a car carrier was $16,000 a day, but that is now up to $105,000. Cutting that cost will help Chinese automakers improve profits. BYD is reportedly spending close to $100 million each for the construction of what will be the six largest car carriers ever built, which are scheduled for delivery over the next three years. They will be hauling vehicles to Europe.

While many Chinese auto manufacturers are leading with low-cost ICE vehicles, their success with EVs domestically will enable them to grow their EV market dominance worldwide. In the first eight months of this year, BYD sold 1.8 million EVs, with nearly half being plug-in hybrid electric vehicles (PHEVs), an increase of 83% year-on-year. EVs were about a third of vehicle sales in China. BYD has surpassed Volkswagen as China's bestselling car manufacturer. This market success was achieved as the company increased its gross operating margin to 18.5% from 13.5% in its first-half financial results. This financial performance came as auto manufacturers in China were cutting prices to gain market shares. Importantly, auto manufacturers in the United States have been posting significant losses in their EV businesses except for Tesla. But even Tesla's operating margins have fallen due to its price cuts designed to boost sales volume in hopes of offsetting some of the lost profits with gains from higher manufacturing productivity.

BYD's European strategy is becoming clearer. First, it is expanding its European dealer partner network to 200. It is planning to boost its global EV exports to 250,000 vehicles this year from 56,000 last year. Other Chinese auto manufacturers are following the same game plan. According to a 2022 Deloitte report, almost all Chinese automakers plan to target the European market, while 75% say they will eventually enter the U.S. market, and 88% say they will mainly be exporting EVs. Chinese automakers only pay a 10% import duty in Europe but would face a 27.5% duty in the U.S. The high share of exports targeting EVs is driven by ICE vehicle bans in various countries and cities. Selling low-cost EVs has been a challenge for European carmakers, but, because of the evolution of the Chinese EV market, it is a strength of China's auto manufacturers.

Chinese automakers have a clear cost advantage in the EV sector. According to Jato Dynamics, a car consulting firm, the average EV price in China in the first half of 2022 was $34,096 compared to $59,797 in Europe and $68,429 in the U.S. Foreign car buyers seeking lower-cost alternatives will be closely examining Chinese models where the quality has improved significantly. Chinese automakers' cost advantage comes from the country's dominance in EV

batteries. According to SNE Research, a South Korean consulting firm, Chinese automakers' share of the global EV battery market was 60% in 2022. It also controls the production of battery materials such as nickel, cobalt, and lithium. It is estimated that China accounts for more than half of the global supply of lithium, which gives its car manufacturers a competitive advantage in lithium-ion battery cell production that translates into lower EV costs.

Research by investment firm UBS, based on a component-by-component analysis, concludes that BYD has a sustainable 25% cost advantage over other legacy automakers in the European Union. UBS performed its analysis by examining BYD's new Seal EV model. UBS concluded that BYD has a similar profit margin to mass-market ICE vehicles. The hefty cost advantage allows BYD to make better vehicles cheaper than even ICE vehicles, which will make it a fierce competitor. As Jato Dynamics commented, "China's focus has been to ensure that EVs were accessible for the masses, and it has done so to great success." On the other hand, the legacy European and U.S. auto markets, with little government support, have been unable to produce EVs at mass-market prices.

The experience of Ford Motor Company's CEO Jim Farley illuminates the challenges facing the Big Three U.S. automakers. He recently took a field trip driving an F-150 Lightning for 1,100 miles between California and Nevada. A pit stop was at the Monterey Car Week where he was interviewed by a reporter for The Kilowatts. Farley commented that he had not experienced *"range anxiety"* but rather *"charging anxiety."* He described his experience.

> *"The Tesla people were in their cars. They weren't talking to each other. It was 110 degrees outside. They're streaming content. And then there's the rest of us, Ford and Kia and Hyundai. We're all talking to each other. There's maybe one 350 kW charger, the rest are slow speed. A lot of people haven't done this before, they're on their first long trip. And we're in a social club, trying to figure this out."*

His experience, we believe, confirmed the correctness of Ford's decision last May to team up with Tesla, allowing Ford EV owners to gain access to the 12,000+ Tesla Supercharger charging network. Ford EV owners will need an adopter to use the Superchargers beginning in 2024. From 2025, Ford EVs will come with a built-in NACS [North American Charging Standard] connector.

Farley also spoke to increasing collaboration among auto manufacturers as the industry travels on the road to full electrification. He believes that company tie-ups will be more prevalent in the EV era to improve customer experience as the nature of competition will be different than in the ICE industry. His comments mirror those of CNBC commentator Mark Fields, former Ford CEO, who suggested that the auto companies will eventually solve the price disparity issue for EVs, but they needed to solve the customer experience issue – primarily the longer time to charge EVs versus fueling ICE vehicles.

Commenting on how the EV business will be different than the traditional ICE industry, Farley told The Kilowatts:

> *"We have to solve this* [the charging problem]*. We're making it hard for customers. That's why Ford took the lead [in NACS adoption]. That's why I separated the EV business. Because our prejudice on the ICE side is to compete with people. And there's no such thing as frenemies in that world. That's why I created an EV business in Ford*

because we need a new kind of thinking. Frenemies in the digital electric world is a reality. Everyone's working with each other."

Farley recognizes that the EV business will be different. As a result, he has been forced to modify his expectations for EV sales and profitability. Instead of producing at the rate of 600,000 EVs by the end of this year, the target has been cut to 400,000 with the earlier target shifted to the end of next year. Ford's goal of building two million EVs by 2026 has been postponed indefinitely. More significant is the acknowledgment that the EV division will lose $4.5 billion in 2023 rather than the earlier estimate of a loss of $3 billion. Fortunately, Ford's ICE vehicle business will make more money this year which will negate the impact of the larger EV loss.

It is also interesting how Farley's rhetoric about EVs has shifted. For him, it is all about growing Ford. In an NPR interview, Farley talked about the importance of Ford's new EV models attracting new customers. *"Fifty percent of Lightning customers are new to us. 60% in [Mustang] Mach-E. We're getting customers we've never seen before. And that's very attractive for a company. You're either growing or shrinking ... we want to be a growing company."* His goal is to not only get those new customers into a second-generation EV that presumably will be profitable but also that Ford can sell them subscriptions and software updates for years.

But then Farley said *"Hybrids, plug-ins, whatever it's going to be. We can't just look at it like it's internal combustion and all EV — there's all these possibilities in the middle."* This is interesting given that he reorganized Ford into two divisions – one for its ICE vehicles and the other for its EVs. Wonder where the hybrids and other "possibilities" fit?

Ford's midcourse correction is mirrored by Mary Barra's change in plans at General Motors. While not vowing to cut back its EV business goals or create a stand-alone EV unit, she just announced that the Chevy Bolt, due to be shut down this year will have a second coming in the next several years. The popular, low-cost, high-mileage EV was popular with drivers until its battery fire problems and recall in 2021. Still, before the announcement of its production ending, it was recording outstanding sales figures. When introduced in 2016, the Bolt was priced at an affordable $26,000, the cheapest EV model available, but with an impressive 259-mile range. Barra said the resurrected Bolt will benefit from GM's Ultium technology being used in the company's high-end EVs. That means fast-charging batteries, efficient vehicle platforms, and smart packaging. We are not sure what the significance of the last two characteristics means, but fast-charging batteries will certainly interest buyers. Presumably, GM will continue the Bolt as a mass-market EV option, and hopefully keep its low-cost position.

A lot is going on in the EV market. It is still an immature market. For us, the most intriguing issue will be how the EV playing field is reshaped by the aggressive market expansion being undertaken by the Chinese EV companies. While history doesn't repeat, it rhymes, and the Chinese EV companies may reshape the global auto market as the Japanese companies did in the 1980s and 1990s.

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