

SOUTH KOREAN COMPANIES RACE FOR DOMINATION IN EUROPE'S EV BATTERY MARKET

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SUMMARY

This policy brief discusses the strengthening of the South Korean position in the electric vehicle (EV) battery industry. In this rapidly developing sector, South Korea has gained an advantage over China and Japan due to early and rapid investments in Eastern Europe. However, the country's leading position in this industry is not yet secured as the European Union wants to join the race and reduce its dependence on Asian companies in this matter. This global race to dominate EV production is an opportunity for South Korea to develop further its economy, as supporting eco-friendly industries is part of the South Korean Green New Deal policy. This is especially so since this policy can dovetail well with EU regulations.

RECOMENDATIONS

1. In order to accelerate the development of EV battery technology, the European Commission and the European Battery Alliance should cooperate with South Korea's agencies such as KITA and KOTRA and directly with companies including Samsung SDI, LG Chem and SK Innovation.
2. As South Korean companies are willing to invest more in supply chains, the EU should be more open to cooperation in this regard.
3. If the EU wants to make its regulations a global norm, cooperation with the largest battery manufacturers is essential. The European Union should take into consideration the fact that South Korean agencies advise the country's battery manufacturers to pay close attention to EU regulations.
4. South Korean investors still consider Central and Eastern Europe as an attractive place for investment and governments should utilize this by offering grants and other forms of support. European countries should focus on attracting investments from major South Korean companies such as Samsung SDI, LG Chem and SK Innovation, as their suppliers often select the same countries to open foreign factories.

INTRODUCTION

Europe has emerged as an EV battery production battleground. As the battery is a key component that accounts for up to 45% of the cost of electric vehicles, it is no surprise that securing battery technology is regarded as a major gateway for gaining a foothold in the rapidly growing EV market. With this in mind, the European Union has been attempting to catch up with Asian competitors to reduce its dependence on batteries produced by South Korean, Chinese and Japanese companies – which now supply more than 90% of the EV batteries around the world. The EU announced in December 2019 that it plans to provide 3.2 billion euros for all battery technology development support projects to secure sufficient supply, quantity, and quality of batteries. Although Europe appears to be too late in successfully joining the race with these East Asian countries, it is predicted by experts that it is the next two to three years that will be critical in determining the future of the battery industry. South Korea wishes to become a global

leader with one of its strategies being to rapidly expand into Europe through direct investment in EV battery production.

THREE KINGDOMS IN THE EV BATTERY ERA

The battery for electric vehicles is often referred to as 'the second semiconductor' reflecting its importance in building a future oriented economy. As cumulative global EV sales grow year by year, South Korean, Chinese and Japanese EV battery manufacturers have become global leaders, supplying more than 90% of the world's EV batteries. The Korea International Trade Association (KITA) recognized this trend, publishing a report calling South Korea, Japan, and China 'the three kingdoms in the EV battery era'. As EV battery production is a new industry, it uses a different strategy to those of existing manufacturing industries, simultaneously promoting technological development, market development, and mass production. Experts say that there is a great possibility that fewer than five companies will monopolize the market.

According to SNE Research, in 2019, CATL led the EV battery market with 27.9%, followed by Panasonic (24.1%) and LG Chem (10.5%). Samsung SDI (3.6%) in 5th, and SK Innovation (1.7%) in 10th were the other East Asian companies in the top ten. At the end of 2020, LG Chem had jumped ahead of its rivals with a 24.6% market share with CATL (24%) and Panasonic with (19.2%) in second and third positions. It is important to note, that apart from China, the three South Korean battery manufacturers are strengthening their position by expanding their market share. Among all three countries it was Japan that initially developed EV technology but failed to actively invest in the market, exclusively pursuing only a stable business expansion by supplying batteries to Tesla and Japanese electric car manufacturers. Furthermore, it is important to note that the Japanese car industry has for years been more interested in hybrid rather than electric cars. Meanwhile, South Korea and China have had time to develop battery technology, secure their domestic markets and then commence market diversification.

Competition between South Korea, Japan and China is also a matter of national pride. South Korea does not want to be considered "the weakest" among its neighbors and takes the EV battery race very seriously.

When a dispute between LG Chem and SK Innovation occurred, President Moon Jae-in himself appealed for reconciliation for the sake of the nation. The competitiveness of South Koreans can also be seen in their strategy – South Korea has expanded domestic and overseas large-scale battery production facilities and technology through aggressive investments. Furthermore, South Korea quickly responded to the trade war between the US and China, using it to the country's advantage to expand into foreign markets.

INVESTMENT IN EASTERN EUROPE

Unlike its rivals, CATL (China) and Panasonic (Japan), South Korean battery manufacturers have aggressively expanded into Europe since 2018. These companies are already operating factories in Western Europe and are in an advantageous situation as the European Union is still not in a position to mass-produce batteries and CATL's German battery plant is still not operational (completion scheduled for H2 2021). The three largest South Korean companies – Samsung SDI, SK Innovation and LG Chem – plan to expand facility investment and increase battery shipments to Europe in order to gain an edge in the European electric vehicle market.

Due to its investment in Europe, LG Chem leads the way among EV battery producers. Unlike CATL, which relies heavily on the Chinese domestic market, LG Chem has a 70% market share in Europe – and as the European electric vehicle market has grown and surpassed its Chinese counterpart, LG Chem has surpassed CATL and emerged as the world's number one EV battery manufacturer.

The presence of three major South Korean companies in Eastern Europe has attracted other investments. Smaller companies producing parts for batteries – such as cables – feel confident when entering the European market as suppliers to LG Chem, Samsung SDI and SK Innovation. South Korean companies' development of a European EV battery hub means that in countries such as Poland and Hungary, South Korea has become one of the largest non-EU foreign investors, and in the case of Hungary, even surpassing European investors.

As mentioned above, the core South Korean strategy in the competition with other Asian countries is large-scale investment in Eastern Europe and using it as gateway to the rest

of the continent. Moreover, these investments started relatively early, giving South Korean companies another advantage. This strategy of quickly building market diversification differs from the Japanese but is similar to the Chinese modus operandi. So what distinguishes South Korean companies from Chinese corporations? A good reputation. Chinese batteries are mostly associated with how cheap they are, while the South Korean battery is connected with quality. And with European Union policies, quality wins out. China-US trade also works to South Korea's advantage – but only when attracting foreign customers is taken into consideration. Generally, South Korea avoids siding with the US, as China could use that as an excuse to cut South Korean companies from supplies of raw materials needed for the EV battery manufacturing process.

EUROPEAN UNION: COOPERATION OR COMPETITION?

As discussed above, the biggest rival to South Korean dominance in the EV battery market is now China. However, can Europe join this competition? European battery manufacturers are speeding up battery self-sufficiency with the full support of the EU. The EU Executive Committee and every European government have formed a 'Battery Alliance', an industry promotion policy that aims to reduce dependence on Asian companies. The EU supports developing European battery technology and building factories in Germany and France. Moreover, the EU plans to promote eco-friendly battery production and reduce its dependence on raw material suppliers.

At first glance it seems that the EU will be South Korea's competitor, but EU policies leave room for cooperation that South Korean firms need to consider if it is to secure its position in the European market.

The South Korean Green New Deal policy is supportive of the EU's eco-friendly regulations. With similar environmental goals, cooperation between the EU and South Korea can even take place on a governmental level. But it is down to South Korean companies examine European strategies. In the EV battery market, work should begin on the next generation of batteries to create a global standard for safer, cheaper, and faster charging batteries than the current lithium-ion version. This is what the car industry and consumers expect in order to replace traditional cars with electric models. When developing new technology, South Korean firms should bear in mind the EU's regulatory

proposals as well as improving battery quality. Experts predict that it will take about 15 years for Europe to both fully develop new technologies related to electric vehicle batteries and to incorporate them into the electric vehicle industry. To meet all of the goals set by the EU, the demand for cooperation with Asian companies is increasing, offering South Korean companies the opportunity to secure its leading position through cooperation with Europe.

Cooperation with Europe can also solve South Korea's biggest problem – securing its supply chain of raw materials. The EU currently has a similar problem - half of the world's lithium is to be found in South America and Australia, but its Chinese companies that controls most mines in these locations. European companies at the same time as developing their own EV battery technology, are attempting to secure sources of raw material by opening mines in Latin America. Moreover, mining projects are being developed in Europe – for example, Serbia is known to hold significant reserves of lithium. Proposed regulations include disclosure (from 2027) of the percentage of raw materials in an EV battery, and from 2030 some of the raw materials (12% of cobalt, 4% lithium, and 4% nickel) must be recycled – and those levels are expected to be increased from 2035 (20% of cobalt, 10% lithium, and 12% nickel). South Korea could work with Europe on securing its raw material supply chains and reduce the country's dependence on China.

CONCLUSIONS

With the EU's eco-friendly policies, the electric vehicle market in Europe is the fastest growing in the world. With high demand for electric vehicles, it has become a battleground for battery producers. Europe, as well as Tesla, are now joining the race with South Korea, Japan, and China. Although the South Koreans are market leaders in Europe, it is not time for South Korean companies 'to rest on their laurels' as the industry is still rapidly developing. In order to beat the fierce competition, South Korean companies must create the next generation of batteries, which is seen in the domestic market where Samsung SDI, LG Chem and SK Innovation are expanding, as R&D investment. As South Korea aims to create a new brand, the EV battery is called the "k-battery" in South Korea, the government must focus on supporting this sector as it has done with K-pop.

In order for the South Korean companies to stay on top, not only research but also market development and mass production must be developed simultaneously. As demand for electronic cars in South Korea is not as high as in the EU, Eastern Europe (as a gateway to the entire continent) is the most attractive place for investments in EV battery production.

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