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Investments

Mackenzie Asia Team

Opportunity: Electric vehicles

Opportunities in Asia Pacific, Part 2

Summary

China has announced an ambitious energy policy to transform the country to net zero carbon emissions by 2060, a huge step forward in meeting global climate change goals.

China's initiative is critical for the world to achieve carbon emission reduction targets and to mitigate climate change. It also creates a number of unique investment opportunities in the Asia Pacific region.

Investment opportunities may include clean energy, electric vehicles (EVs), and certain key material sectors. Apart from solely investing in China, exciting prospects appear to exist across the Asia Pacific region and may provide better risk-adjusted investment returns.

Across Asia Pacific, there are many sectors and companies which will benefit from this policy change. In some cases, companies outside of China have more competitive advantages than those within China and may act with greater financial discipline. There are leading Asian semiconductor, chemical and automotive companies which may operate with greater focus on financial returns, higher levels of corporate governance and with more shareholder-friendly management teams. In other cases, the winners may be Chinese companies which enjoy home advantage and an ability to achieve greater scale. Overall, we believe a pan-Asian investment approach should allow investors to enjoy higher risk-adjusted returns.

Among a wide range of investment opportunities, this part highlights the following key sector.

Opportunities: Electric vehicles

The transportation and auto industry accounts for 10% of total CO₂ emissions in China. Over the past 15 years, China increased annual auto sales from 6 million to 20 million units. Despite auto companies' continuous fuel efficiency improvements, rising auto penetration has added substantially to CO₂ emissions. With the economy expected to grow at more than 5% per annum over the next five years, auto sales in China will continue to increase.

China surprised the world when it announced that it will stop selling pure internal combustion engine (ICE) vehicles by 2035 and will only allow sales of hybrid vehicles (HV) and battery electric vehicles (BEV). HVs consist of both an engine and a battery and use the battery's power to



Nick Scott,
Senior Vice President, Portfolio Manager
Mackenzie Asia Team



Bryan Mattei, CFA
Vice President, Portfolio Manager



Ryoichi Hayashi, CFA
Director, Investment Research



Michael Chan, CFA
Senior Equity Analyst

substantially improve fuel efficiency versus a standalone ICE. We will therefore witness a substantial increase from the current 5% EV penetration.

This transformation will have profound global ramifications. China boasts the world's largest automotive market. Auto companies will have to lower costs and improve EV quality to attract customers. Therefore, China's policy will become an important catalyst to accelerate a global migration toward EV usage (Figure 1).

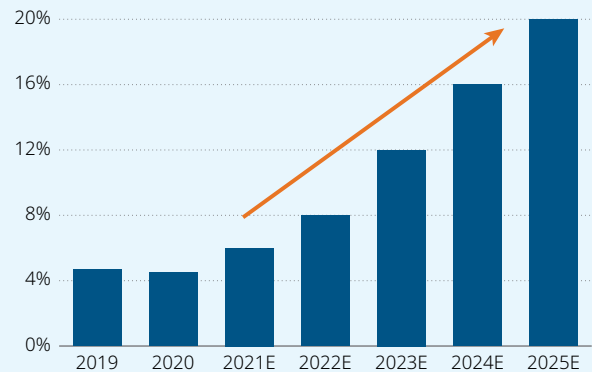
The battery is the most critical component for EV. Only battery companies with advanced technology and global production networks can supply to auto manufacturers around the world. This EV revolution, accelerated by China's policy, will allow future global leaders to emerge.

China is home to one of the largest and most advanced automotive battery companies in the world. The Chinese government previously provided generous subsidies to allow new battery companies to emerge. In the last several years, these subsidies were reduced substantially, and many nascent battery companies did not survive. However, those that did thrive now provide high-quality batteries to serve the domestic market and global brands in Japan and Europe.

Within the global EV battery market, Korea also stands out as having advanced technology and scale. Korean makers have 44% global market share, or 70% market share outside of the China market (Figure 2). There is a high safety bar for electric vehicle batteries and only a handful of companies can supply on a global scale. Scale is key to drive down fixed costs, and lower costs drive up EV penetration, creating a virtuous cycle.

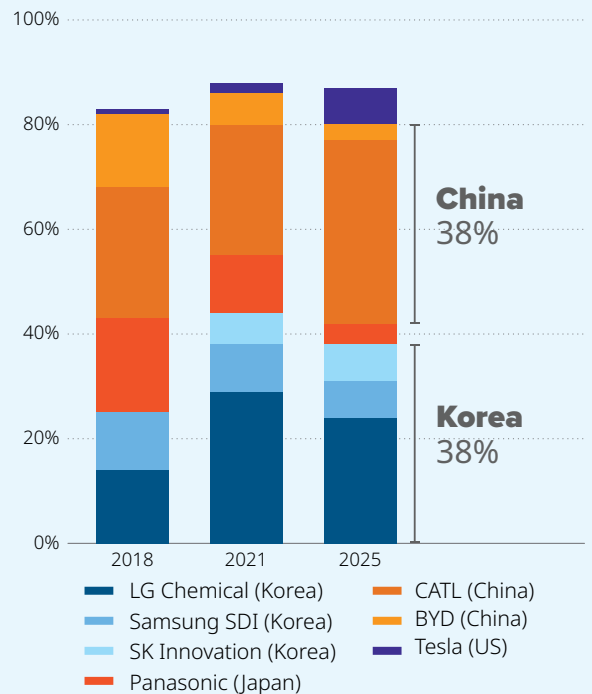
Within the next few years, the price of an EV can be lowered to that of ICE vehicles. At that point, it will become rational for consumers to buy an environmentally friendly EV, and the EV market will experience rapid market share growth. The world may experience a supply shortage of batteries, and those Chinese and Korean companies with the largest manufacturing capacity will likely dominate (Figure 3).

Figure 1 | China's electric vehicle penetration



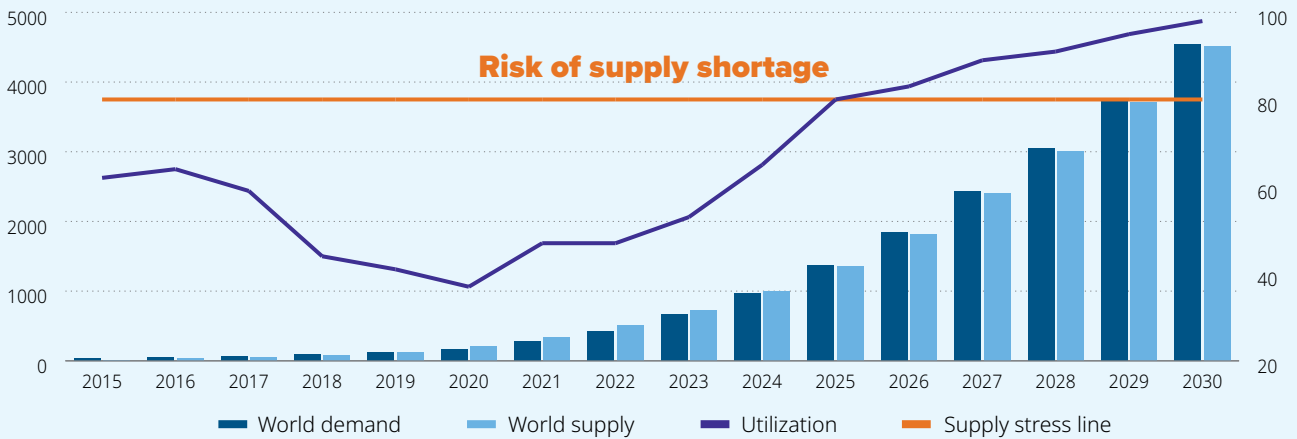
Source: China Association of Automobile Manufacturers, JP Morgan Estimates

Figure 2 | Global battery market share



Source: UBS

Figure 3 | EV battery supply/demand

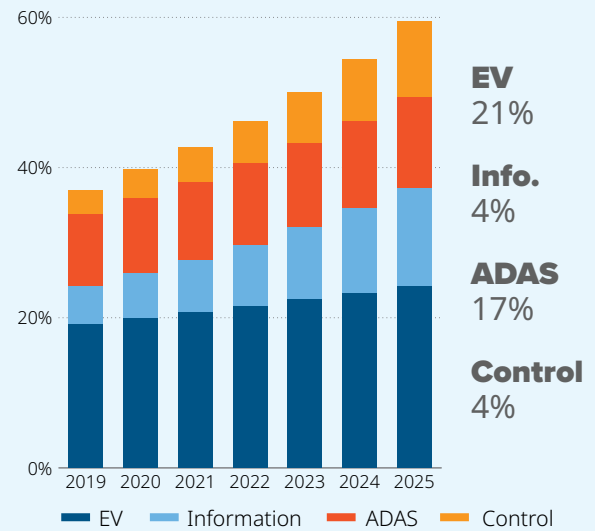


Source: UBS

The automobile is becoming more like a personal computer. Each new model has more safety features, greater energy efficiency and wider passenger entertainment offerings; these structural trends are very evident in EVs. Autonomous driving and advanced driver-assistance systems (ADAS) require advanced camera sensors and control systems. More functions in a car are built on software rather than mechanical hardware. They can be updated with wireless communication overnight like the operating system on a smartphone. It will become commonplace to have multiple displays and noise cancellation technology to provide a better cabin experience, all of which drives higher demand for semiconductors (Figure 4).

Power efficiency is one of the most important factors in EVs and it requires specific semiconductors and more electronic devices. Amplifying the weak electric current from a battery to power an electric motor sufficient to drive a car requires a special semiconductor chip. Other specialized semiconductor chips can reduce power consumption and increase driving range.

Figure 4 | Growth trend of automotive semiconductor market (billion USD)



Source: Strategy Analytics data



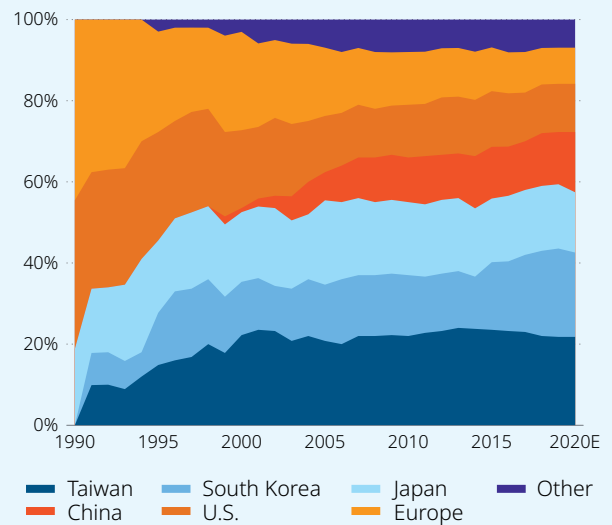
Korea, Taiwan and Japan account for almost 60% of worldwide semiconductor manufacturing (Figure 5). Korea and Taiwan have some of the most advanced computer chip manufacturers, and they continue to increase capacity and develop most advanced chips. Japan has many specialized semiconductor companies whose products contribute to energy savings.

Conclusion

China's highly ambitious environmental policies will transform the world's second largest economy from the largest detractor in reaching global emission targets to one of the leading contributors.

This transformation will disrupt many industries within China but create some large-scale, globally dominant companies. However, some of the best investment opportunities may well lie outside the country itself. Investing in some of the leading Korean, Japanese, Australian or Taiwanese companies, closely aligned to China's needs to complete this profound transformation, may reduce China's country risk and improve risk-adjusted investment returns.

Figure 5 | Share of global semiconductor manufacturing capacity



Source: Boston Consulting Group, Semiconductor Industry Association

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