

ESG INSIGHTS: CHINA EMERGES AS GREEN ENERGY LEADER.

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I recently spent a few days in Hong Kong meeting with Asian companies and experts to explore China's economic shift from relying predominantly on infrastructure and real estate to its emergence as a global leader in renewable energy.

Historically, China's economy relied heavily on real estate and industrial growth, benefiting nations like Australia through iron ore exports. However, global dynamics and the need to reduce carbon emissions are driving a significant transformation. With government policies encouraging the development of the 'New Three Industries'—electric vehicles (EVs), solar energy, and lithium-ion batteries—China is positioning itself at the forefront of the renewable energy sector, laying the foundation for future economic growth.

Government policies support emerging industries

China's rapid economic growth over the last few decades has been driven by investment, infrastructure development, and real estate. In 2021, real estate investment accounted for 27% of China's total fixed asset investment, but by 2023, this figure had fallen to 22% and is arguably even lower today. The sector has faced shrinking investments, declining sales, and a notable drop in housing prices. Between January and July 2024, real estate development investment decreased by 10.2% year-on-year (YoY) to RMB 6.09 trillion. The gross floor area (GFA) of new construction starts also saw a significant decline, with a 23.2% YoY decrease, while the GFA of completed projects dropped by 21.8% YoY.

Although real estate remains a significant contributor to the economy, the Chinese government has been actively working to diversify the country's economic drivers.

The government has introduced policies aimed at reducing payments and interest rates on property loans to prevent a collapse in the real estate market, which remains a vital part of China's economy. At the same time, the government has implemented significant reforms and provided incentives to encourage the growth of key industries such as EVs, solar energy, and lithium-ion batteries. These new sectors are crucial not only for domestic growth but also for China's goal to become a global leader in renewable energy and green technologies. I will discuss two of these industries in further detail in this paper.



Brad Potter
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Global leader in EV manufacturing

The electric vehicle (EV) sector is a cornerstone of China's new industrial policy. As the world shifts toward cleaner energy, China has positioned itself at the forefront of the EV revolution. By 2024, domestic EV penetration had surpassed 50%, reflecting the growing consumer demand for environmentally friendly alternatives to internal combustion engine (ICE) vehicles. The Chinese government's push for sustainable transport has been instrumental in shaping this industry. However, subsidies are no longer the primary source of EV growth, as these vehicles have become competitive with ICE cars.

The rapid growth of China's EV market is one of the most significant trends in the country's industrial landscape. In 2023 alone, EV sales in China reached 7.8 million units, representing a significant share of the global EV market. This growth has been driven by several factors, including government subsidies, the development of battery technology and an extensive charging infrastructure network. Additionally, Chinese consumers are increasingly favouring EVs over ICE vehicles.

China's EV market is not only expanding domestically but is also influencing global markets. Chinese automakers such as BYD, Li Auto, and NIO are rapidly gaining market share within China and overseas. Chinese EV manufacturers have overtaken many traditional automakers in sales and technological innovation, with BYD now ranked fifth in global EV sales.

However, Chinese automakers face challenges in expanding globally, due to the impact of trade barriers and tariffs. In 2024, the European Union imposed tariffs up to 38% on EVs imported from China, while the United States and Canada have also increased tariffs on Chinese EVs. The US and Canada appear to be particularly concerned about the software within the vehicles with a built-in internet connection. The issue relates to concerns on Chinese companies collecting data on American drivers and infrastructure together with the potential for foreign adversaries to remotely manipulate connected cars on the US roads.

Overcapacity increases price competition

The Chinese government's massive investments in EV manufacturing have resulted in an oversupply of vehicles. Many companies, particularly smaller startups, are struggling to maintain profitability due to the high cost of production and competition from established players. While companies like BYD and NIO have scaled production efficiently, others are facing challenges with underutilised capacity and financial losses.

This overcapacity has led to price competition, with many manufacturers slashing prices to maintain market share. This has resulted in thin profit margins across the industry, particularly for companies still in the early stages of scaling production.

China dominates solar energy production

Solar energy is another key sector in China's energy transition. China is the world's largest producer of solar panels, accounting for over 90% of global production. Between 2021 and 2023, China's solar capacity more than doubled, driven by strong demand and technological innovation. The country added over 200 gigawatts (GW) of solar capacity during this period, making it the largest solar energy producer in the world.

The Levelised Cost of Energy (LCOE) for solar power has dropped significantly, making it cost-competitive with traditional energy sources such as coal and natural gas. By 2023, the LCOE for solar power in China fell to just \$0.04 per kilowatt-hour, on par with the cost of coal-fired electricity.

Chinese companies have improved solar efficiency while reducing production costs, making solar energy more affordable and accessible. This has enabled China to export its solar products globally, particularly in Europe, Asia, and the Americas.

One of the most significant innovations in the solar industry has been the development of "N-type" solar cells, which offer higher conversion efficiency than traditional "P-type" cells. These advanced solar cells have helped reduce the overall

cost of solar energy, making it more competitive with other forms of electricity generation.

Despite this impressive growth, China's solar industry faces similar challenges to the EV industry. The rapid expansion of production capacity has led to an oversupply of solar panels, causing prices to plummet. Between 2021 and 2023, the average cost of solar panels fell by more than 60%, squeezing manufacturers' profit margins.

To address overcapacity, the Chinese government has implemented policies encouraging consolidation within the industry. Smaller, less efficient producers are encouraged to exit the market, while larger companies expand their market share. This process of consolidation is expected to help stabilise prices and improve profitability in the long term.

Expansion into global markets

China's solar industry is also expanding its presence in international markets, particularly in Southeast Asia and the Middle East.

Chinese companies such as Longi, Jinko Solar, and Trina Solar have established production facilities in countries like Malaysia, Vietnam, and Thailand, where they can benefit from lower production costs and favourable trade policies.

In the Middle East, these companies are scaling up operations to meet the region's growing demand for renewable energy. The United Arab Emirates and Saudi Arabia have become key markets for Chinese solar products.

China's Dominance of the Global Battery market

The rise of electric vehicles (EVs) has significantly increased the global demand for lithium-ion batteries. As countries strive to transition to cleaner energy sources, the battery industry has become a critical component of this shift. China has emerged as a dominant force in battery production, contributing to a substantial oversupply in the market.

China's battery production capacity in 2023 alone matched global demand, highlighting its overwhelming presence in the industry. The country has invested heavily in research and development, with companies like BYD and CATL leading the charge. This dominance is not just in sheer volume but also in technological advancements, making China a formidable player in the global battery market.

Global lithium-ion battery manufacturing capacity has outpaced demand, with an estimated 2,600 GWh produced in 2023 against a demand of 950 GWh. This oversupply is expected to increase, leading to falling prices and squeezing profit margins for manufacturers. For consumers, this could mean more affordable EVs and stationary storage solutions.

The low prices are making it difficult for new entrants outside of China to compete, even with generous support provided by the US Inflation Reduction Act and other such support structures.

The sustainability of the low battery prices is an intriguing question and will likely result in an industry shakeout as is normal during overcapacity cycles. Lithium, a key raw material cost is in over supply and thus helping keep battery prices low. However, regulatory and environmental approvals are making it more difficult to bring on new mining or refining capacity than build a battery plant. This may help bring the supply and demand fundamentals back into balance.

Conclusion

China's industrial transition represents a fundamental shift in its economic model, as the country moves away from traditional investment-driven sectors like real estate and toward new, innovative industries such as EVs, solar energy and lithium-ion batteries. These sectors are crucial to China's long-term economic sustainability and its efforts to reduce carbon emissions and become a global leader in green technology. Exports of the traditional labour-intensive products

are declining due to falling competitiveness. However, the capital and technology intensive industries are rapidly filling the gap.

This transition is not without its challenges. EV, lithium-ion battery and solar industries all currently face significant issues related to overcapacity, profitability, and growing international competition. The Chinese government's role in managing these challenges through policies and supply-side reforms will be critical in ensuring the success of these industries.

As China continues to expand its global presence in the EV and solar sectors, it is poised to remain a dominant player in the global market for green technologies. However, the country must navigate complex trade dynamics and competition from other global players to maintain its competitive edge. Western World governments do not want to be totally reliant on China for these technologies.

Australia plays a significant role in China's ongoing industrial transition and its legacy industries given its endowment of both critical minerals and iron ore. Tyndall currently holds a modest overweight in the resources sector, exposing it to the short-term stabilisation of the property market and the China economy, as well as to the longer thematic that relates to global decarbonisation and China's industrial transition.



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