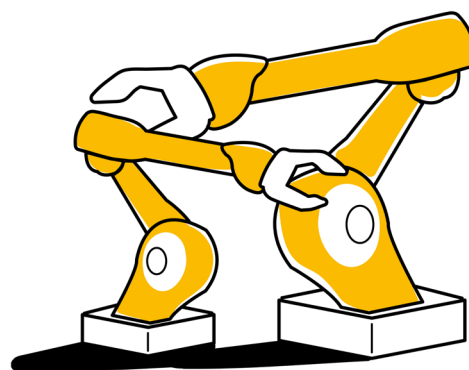


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# MERICS

# China Industries

ALEXANDER BROWN, GREGOR SEBASTIAN



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## MERICS TOP 5

### 1. Localizing medical equipment production a core facet of China's self-reliance push

**At a glance:** Ten ministries and agencies released their 14<sup>th</sup> Five-Year Plan (FYP) for the medical equipment industry. The plan's focus to onshore supply chains signals that supply shortages during the pandemic have rattled policymakers. The policy's key targets for 2025 include:

- Establish safe and reliable industrial chains and achieve control of core technologies (including extracorporeal membrane oxygenation [ECMO] and ultrahigh field magnetic resonance imaging) and basic materials and components
- Incorporate digital technologies including 5G across the medical equipment sector; encourage companies to enter the telemedicine and smart medical care sectors
- Facilitate the rise of six to eight Chinese firms into the top 50 medical equipment companies worldwide
- Become a global leader of medical equipment R&D, manufacturing and application by 2035

**MERICS comment:** China's medical equipment industry is a large and growing market. China's aging population, evolving medical needs and increased wealth will fuel further growth and create opportunities for foreign companies in this sector.

However, to expand and retain market share, foreign companies are under pressure to localize R&D and production in China. The plan promotes domestic, safe industrial chains. Already, the central government is favoring domestic producers via [centralized volume-based procurement](#), the 'Buy China' policy and [medical equipment catalogs](#). The pressure will not abate. And even if localized foreign producers still experience discrimination, exporting to China remains an option, but primarily for companies that produce low volumes of specialized high-tech products.

Within this sector, China's economic upgrading and self-reliance push has been ongoing since at least 2015. The infamous [Made in China 2025](#) plan outlined [domestic market share targets for 2025](#) for medical devices and core medical device components of 70 and 80 percent respectively. Currently, China still [depends on imports](#) and foreign brands remain dominant, but their market share in high-value medical devices has fallen from [80 to 70 percent](#) (2010-2020). The [shortage of crucial equipment and components](#) during the pandemic has fueled the self-reliance push. To fill gaps in core technologies, China is: (1) acquiring foreign technology, MicroPort became the first Chinese manufacturer of ECMOs after [acquiring German company Hemovent](#); (2) encouraging foreign investment by placing relevant technologies into the [encouraged investment catalog](#); and (3) [subsidizing R&D](#).

**Article:** 14<sup>th</sup> Five-Year Plan for Medical Equipment (十部门关于印发《“十四五”医疗装备产业发展规划》的通知) ([Link](#))

**Issuing bodies:** MIIT; NHC; NDRC; MOST; MOF; SASAC; SAMR; NHSA; SATCM; NMPA

**Date:** December 28, 2021

## 2. MOST overhauls institutional setup to promote tech-focused SMEs

**At a glance:** The Ministry of Science and Technology released guidelines to create a more favorable environment for tech-based SMEs to conduct R&D. The notice defines a tech-based SME as one that has at least five patents, a high proportion of technical staff and an R&D intensity of over six percent. Targets include:

- Support the R&D activities of SMEs and promote the growth of 50,000 new tech-based SMEs
- Set up a credit system for tech-based SMEs that allows banks and markets to better evaluate R&D capabilities
- Improve the ‘dual employment’ and ‘revolving door’ mechanisms for researchers so that they can easily work at both enterprises and research institutes or switch between them

**MERICS comment:** China has tried to improve the business environment for SMEs for a long time. More recently, starting in 2018 with the [Little Giant Initiative](#), Beijing has focused its efforts on tech-based SMEs. In September, President Xi Jinping announced that a [new stock exchange](#) in Beijing would improve innovative SME access to finance and in December a [FYP](#) outlined ambitious targets to foster the growth of one million innovative SMEs by 2025. These steps signal that Beijing is increasingly counting on SMEs to fulfill its economic growth and self-reliance goals and is rolling out supporting measures accordingly.

The new plan aims at overhauling the dichotomy between SOEs and private businesses in China. The preferential treatment for SOEs is now being extended to a select group of SMEs in strategic sectors. They stand to benefit from Beijing’s arsenal of industrial policy instruments including subsidies and convenient access to finance. The rest, and overwhelming majority of private businesses continue to face financial and regulatory challenges.

China is essentially trying to establish its own cohort of “hidden champions” using multiple industrial policy levers to make them more competitive. For this purpose, the government is attempting to turn institutional weaknesses into strengths. Tools include allocating a greater share of government procurement to SMEs and using SOEs to support SMEs. However, considering the lack of internationally successful Chinese SMEs this will be an uphill battle and likely result in significant waste caused by widespread investment in potentially unsuccessful tech SMEs.

**Article:** Notice on Creating a Better Environment to Support the Research and Development of Science and Technology-based SMEs (科技部办公厅关于营造更好环境支持科技型中小企业研发的通知) ([Link](#))

**Issuing body:** MOST

**Date:** January 13, 2022

### 3. Robotics plan seeks to upgrade indigenous capabilities as production soars

**At a glance:** On December 28, the Ministry of Industry and Information Technology (MIIT) and 14 other government bodies released a 14th FYP for the development of the robotics sector. Beijing aspires to turn China into a source of global innovation in robotics technology by 2035. To achieve this, policymakers have set the following goals for 2025:

- Achieve breakthroughs in robotics core technologies and high-end products; increase the performance and reliability of key components to the level of foreign components
- Grow the robotics industry such that revenue increases by over 20 percent annually
- Foster the development of innovative and fast-growing “little giant” enterprises; establish three to five internationally influential industry clusters
- Double the density of robots in the economy, to over 492 robots per 10,000 employees, up from 246 in 2020

**MERICs comment:** Robots are listed among the ten priority industries of the [Made in China 2025](#) strategy, where China is determined to increase its competitiveness and domestic capabilities. In 2020, China installed 168,377 industrial robots, accounting for [44 percent](#) of global installations. Demand for robots in China will likely remain strong as the central government increasingly relies on industrial upgrading as a form of stimulus as opposed to investment in infrastructure and real estate.

In terms of production in China, output of industrial robots has skyrocketed in recent years, soaring from 16,590 units in 2015 to 366,044 units in 2021. Despite the strong output growth, Chinese branded industrial robot manufacturers only occupy about a quarter of the [domestic market](#) and lag behind foreign robotic manufacturers in the production of core components.

The tightening of [investment screening](#) mechanisms in Europe and elsewhere now makes it difficult for China to acquire foreign firms, as Midea Group did with KUKA. Increased market share will need to come from homegrown innovation, which has proved elusive. Since 2015, China has consistently registered the most [robotics patents](#) of any country but has so far failed to significantly increase the competitiveness of its indigenous robotics firms. The promotion of highly specialized “little giant” enterprises is intended to fast-track innovation and facilitate the commercialization of R&D results.

**Article:** 14<sup>th</sup> Five-Year Plan for the Robotics Industry (十五部门关于印发《“十四五”机器人产业规划》的通知) ([Link](#))

**Issuing bodies:** MIIT, NDRC, MOST, MPS, MCA, etc.

**Date:** December 28, 2021

#### 4. Ministries outline innovation priorities for environmental protection equipment

**At a glance:** Three ministries released an action plan for the high-quality development of the environmental protection equipment manufacturing sector. The plan sets guidelines for the industry's development through to 2025 and underpins the nation's green and low carbon development aims. The top priorities outlined in the plan are:

- Achieve breakthroughs in technology and equipment currently hampering the development of the industry
- Advance research into areas such as high-performance fans, pumps, valves, filter materials, and environmental monitoring modules
- Strengthen the competitiveness of the industry, foster several specialized “little-giant” enterprises
- Grow the output value of the environmental protection equipment manufacturing sector to CNY 1.3 trillion by 2025

**MERICS comment:** With sustainable development set as one of the core guiding principles of China's growth model for the coming decades, environmental protection equipment is of strategic importance. Mastering the technology will be integral for China to successfully achieve its pollution reduction goals, but it also offers an opportunity to move up the value chain. The equipment required to reduce pollution and monitor emissions include evolving technologies where Chinese firms could gain a competitive advantage. In addition to promoting research into key components and materials for environmental protection, authorities will also leverage China's rapidly expanding digital infrastructure and push for the integration of smart technologies to standardize environmental monitoring.

As a result, foreign suppliers of environmental protection equipment face both opportunities and risks. They may benefit from growing demand in China, but they will likely also face increased competition from domestic manufacturers in addition to existing barriers to market access. To promote domestic companies and increase oversight of the sector, China uses [catalogs](#) that list state-vetted environment protection equipment makers. The new policy once again encourages manufacturing companies and local governments to refer to these lists when procuring supplies. Localized foreign companies are [eligible](#) to apply, however the [batches for 2021](#) only include Chinese firms.

**Article:** Action Plan for High-Quality Development of the Environmental Protection Equipment Manufacturing Industry (2022-2025) (三部委关于印发环保装备制造业高质量发展行动计划（2022—2025年）的通知) ([Link](#))

**Issuing bodies:** MIIT, MOST, MEE

**Date:** January 21, 2022

## 5. Industrial commodity sector set to become greener and more secure

**At a glance:** On December 29, three ministries issued a 14<sup>th</sup> FYP for the development of industrial commodity sectors. Officials hope to enhance the security, quality and efficiency of production in industries which process raw materials such as petrochemicals, steel and building materials. The top priorities to achieve by 2025 include:

- Improve innovation capacity in new materials such as high-temperature alloys, ultra-high-purity rare earth metals and high-performance special steel; develop several types to the point of mass production and standard application
- Limit energy consumption and carbon emissions; reduce energy consumption per unit of steel and cement production by 2 and 3.7 percent respectively
- Strengthen access to strategic resources, significantly enhance control over the core technology and equipment of key industries

**MERICS comment:** The document emphasizes the importance of an “autonomous and controllable” industrial system to ensure China’s economic and national security. This means authorities will pay additional attention to possible supply chain disruptions and increase efforts to acquire key industrial technology, such as large-scale melting and casting equipment. It also reflects the government’s commitment to maintaining its position as the dominant producer worldwide in many upstream manufacturing sectors. These include SOE dominated industries such as steel, copper, aluminum, plated glass, etc. where overcapacity is a persistent problem.

But these sectors will have to be gradually transformed to align with China’s decarbonization ambitions. Restrictions on capacity and [energy consumption](#), as well as the planned inclusion of industries such as steel, cement and chemicals in the [national carbon market](#) in the coming years, will require producers to invest in green production methods and cut out inefficient factories.

On the other hand, new material industries offer an opportunity for economic expansion, with potential applications in numerous downstream industries, including aerospace, semiconductors, ICT and energy. Cooperation with foreign firms will continue to be leveraged to enhance China’s innovation capabilities in this area, like those previously established with [Airbus](#), [Siemens](#) and [BASF](#). Foreign companies can expect attractive offerings as local governments compete to attract foreign capital and R&D operations, as well as foster further partnerships to stimulate indigenous innovation.

**Article:** 14<sup>th</sup> Five-Year Plan for the Development of Raw Material Industry (三部委关于印发“十四五”原材料工业发展规划的通知) ([Link](#))

**Issuing bodies:** MIIT, MOST, MNR

**Date:** December 29, 2021

## NOTEWORTHY

### Policy news

- *December 29:* MIIT publishes the final version of the 14th FYP for Smart Manufacturing with minor revisions made to the [draft](#) issued back on April 14, 2021 ([MIIT notice \(CN\)](#); [Global Times article \(EN\)](#))
- *December 31:* The National Intellectual Property Administration published a 14<sup>th</sup> FYP on developing intellectual property talent ([CNIPA notice \(CN\)](#))
- *January 4:* MIIT and four other government agencies release the Action Plan for the Innovative Development of Smart Photovoltaic Industry, promoting smart manufacturing and efficiency upgrades ([MIIT notice \(CN\)](#); [CGTN article \(EN\)](#))
- *January 7:* The Civil Aviation Administration of China, the National Development and Reform Commission (NDRC) and the Ministry of Transport publish the 14<sup>th</sup> FYP for the Civil Aviation industry according to which the aviation sector in China will re-enter a growth period from 2023 onwards ([CAAC notice \(CN\)](#); [Reuters article \(EN\)](#))
- *January 12:* The State Council issues a 14<sup>th</sup> FYP for the digital economy, supporting the creation of a data market and aiming to grow the digital economy's share of the national GDP to 10 percent by 2025 ([State Council notice \(CN\)](#); [Reuters article \(EN\)](#))
- *January 18:* The State Council releases the 14<sup>th</sup> FYP for the development of a modern integrated transport system, listing key objectives for high-speed rail, airports, as well as motor- and waterways ([State Council notice \(CN\)](#); [South China Morning Post article \(EN\)](#))
- *January 21:* The NDRC and nine other government agencies issue measures to further develop EV charging infrastructure to accommodate at least 20 million EVs by 2025 ([NDRC notice \(CN\)](#); [Protocol article \(EN\)](#))
- *January 24:* The State Council issues a 14<sup>th</sup> FYP on energy efficiency and emissions reduction, restating its goal to reduce energy consumption 13.5 percent from 2020 levels by 2025, and setting reduction targets for emissions of other pollutants ([State Council notice \(CN\)](#); [State Council article \(EN\)](#))

## Corporate news

- *January 8:* China's first high-speed railway with a controlling stake held by private capital begins operation between Hangzhou and Taizhou; Fosun Group leads the private consortium involved in the project ([Xinhua article \(CN\)](#); [Yahoo article \(EN\)](#))
- *January 11:* China's State Power Investment Corp. signs an agreement with Foshan local government to invest CNY 10 billion in a hydrogen manufacturing and research facility for fuel cells and other key components ([Tengxun article \(CN\)](#); [Yicai article \(EN\)](#))
- *January 13:* BYD announces partnership with California startup Nuro Inc. to build a pure-electric autonomous delivery vehicle ([BYD press release \(EN\)](#))
- *January 13:* Indebted real estate conglomerate Evergrande's first NEV model, the Hengchi 5 SUV, rolls off the production line ([Caixin article \(EN\)](#))
- *January 17:* Battery giant CATL announces the launch of its first battery swap brand for electric vehicles, called Evogo ([Yicai article \(EN\)](#))
- *January 21:* Geely Holding Group and Renault Group formally announce a joint venture partnership to develop, produce, and sell fuel and smart hybrid vehicles in South Korea ([Renault Group press release \(EN\)](#); [Reuters article \(EN\)](#))



## **AUTHORS**

Alexander Brown  
Analyst, MERICS

Gregor Sebastian  
Analyst, MERICS

## **EDITORS**

Claudia Wessling  
Director Communications  
and Publications, MERICS

Alexander Davey,  
Editor, MERICS

For more information, please contact:  
[publications@merics.de](mailto:publications@merics.de)

## **PUBLISHER**

**MERICS | Mercator Institute for China Studies**

Klosterstraße 64

10179 Berlin

Tel.: +49 30 3440 999 0

Mail: [info@merics.de](mailto:info@merics.de)

[www.merics.org](http://www.merics.org)