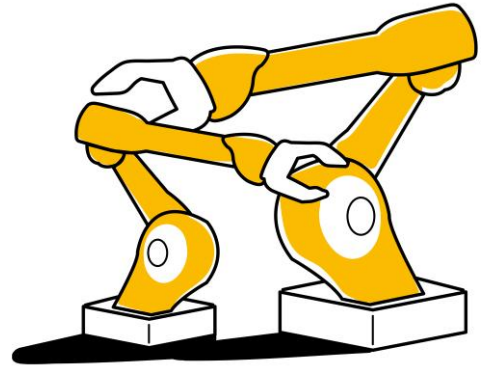


DECEMBER 04, 2024 (REPORTING PERIOD: OCTOBER 29 - NOVEMBER 25)

# MERICS

## China Industries



### CONTENTS

MERICS TOP 5.....	2
1. Unveiling China’s new materials big data system strategy .....	2
2. Fully charged: China aims to further crank up its new energy storage industry....	3
3. Beijing launches smart factory cultivation program .....	4
4. Biomanufacturing best practice: MIIT collects model cases.....	5
5. MIIT seeks to upgrade traditional manufacturing through model technologies ....	6
NOTEWORTHY.....	7
Policy news .....	7
Corporate news.....	7

## MERICS TOP 5

### 1. Unveiling China's new materials big data system strategy

**At a glance:** The Ministry of Industry and Information Technology (MIIT), the Ministry of Finance (MOF) and the National Data Bureau released a plan to develop a big data center system for new materials. The big data system aims to pool industrial data and share it with research institutes and enterprises, strengthening research and development (R&D) and the application of new materials research outputs. Key goals include:

- By 2027, data aggregation and circulation will be enhanced, a “1+N” new materials big data system will be established, creating one main platform and 30+ data nodes, 30+ tools, and 20+ data-driven applications
- By 2035, the new materials big data center system will be fully operational, enabling comprehensive aggregation, processing and development of materials data, placing it among global leaders
- Develop key technologies and software across the materials R&D chain, with a focus on applications like aerospace, marine engineering and ICT, while integrating advances in frontier technologies such as superconductors and biomimetic materials

**MERICS comment:** The aim is to enhance the productivity, innovation, and competitiveness of China's manufacturing sector. Leveraging big data analytics allows companies to explore new manufacturing methods, analyze materials' properties, and optimize production processes. This approach can transform material science and redefine cutting-edge technologies, with stronger, lighter, and more sustainable composites. Responsibility for data-gathering is divided between universities, research institutes, and companies, so that [computing power and software](#) (such as AI and blockchain) can convert the data into applicable and tangible results.

International competitors and similar scientific initiatives already exist in the [EU](#) and [United States](#). Beijing is monitoring international developments closely and has expressed openness to cooperation and exchange through joint R&D programs. For China, there are potential benefits as it hosts one third of the global manufacturing industry and hence can access a much greater quantity of data than is available in other markets, provided Chinese companies are willing to share their IPs and data. Meanwhile, if local companies obtain preferential access to the big data center system for new materials the program could become a long-term competitiveness risk for foreign firms.

**Article:** Issuing the Overall Construction Plan for the New Materials Big Data Center System (关于印发《新材料大数据中心总体建设方案》的通知) ([Link](#))

**Issuing bodies:** MIIT, MOF, NDB

**Date:** October 30, 2024

## 2. Fully charged: China aims to further crank up its new energy storage industry

**At a glance:** The Ministry of Industry and Information Technology (MIIT) released an action plan to boost the development of China's new energy storage manufacturing industry. The specific products and technologies involved are lithium batteries, sodium batteries, flow batteries, supercapacitors, lead carbon batteries, flywheel energy storage, and compressed air energy storage. Important goals for 2027 include:

- Cultivate between three to five companies worth CNY 100 billion
- Increase new energy storage manufacturing capacity to match downstream demand in various sectors, for instance transportation, construction, communications, and agriculture
- Promote international cooperation in the new energy storage industry through mechanisms such as the Belt and Road Initiative (BRI)

**MERICS comment:** New energy storage – which differs from traditional energy storage by excluding pumped hydro systems – is already a booming industry. China added 20 gigawatts (GW) in battery energy storage [in 2023](#), helping it to reach its 2025 goal of installing [30 GW](#) in new energy storage capacity two years early. China hosted almost half of the 42 GW of new energy storage [added globally](#) in 2023.

However, there are signs that the sector has begun to suffer from [overcapacity](#). For example, in 2023 energy storage system prices fell by half within only two months. In energy storage battery production, capacity utilization plunged from 87 percent in 2022 to less than 50 percent.

The action plan addresses this challenge by promoting international expansion for China's new energy storage industry through the BRI. China has [rebranded the BRI](#) to focus more on digital and green technologies since the Third Belt and Road Forum in October 2023.

Beijing might have to resort to additional measures, such as encouraging joint ventures or mergers and acquisitions, in order to achieve the plan's goal of cultivating at least three CNY 100 billion companies by 2027. China's leading battery makers in terms of revenue in 2023 were BYD (CNY 604 billion, including all business segments), CATL (CNY 404 billion), Zhejiang Changxing Tianneng Power Supply Co. (CNY 64 billion), and Ningde New Energy Technology Co. (CNY 48 billion).

**Article:** Action Plan for the High-Quality Development of the New Energy Storage Manufacturing Industry (Draft for Comments) (公开征求对新型储能制造业高质量发展行动方案（征求意见稿）的意见) ([Link](#))

**Issuing body:** MIIT

**Date:** November 6, 2024

### 3. Beijing launches smart factory cultivation program

**At a glance:** The MIIT announced a new program supporting the construction of smart factories. The notice introduces four smart factory levels, for which companies can seek recognition: basic, advanced, excellent, and pilot. Companies are encouraged to submit applications to the 2024 application round, which is focused on selecting excellent-level smart factories. Important goals include:

- Over the next five to ten years, promote basic-level smart factories, regional industry-leading advanced smart factories, nationally leading excellent smart factories, and pilot-level smart factories with global influence
- Achieve breakthroughs in smart manufacturing equipment, industrial software, system solutions and standard applications
- Accelerate the integration of new generation information technology and advanced manufacturing technology
- Transform and innovate research and development paradigms, production methods, service systems, and organizational structures

**MERICS comment:** The notice gives different prerequisites for each of the four smart factory levels. For example, pilot level factories are expected to serve as global benchmarks, create industry standards, and form smart manufacturing innovation ecosystems. The question is whether this program will generate real successes in smart factory construction or merely more bureaucratic effort. The program relies on the judgement of officials, which may be flawed, to identify the most promising factories, so it could result in inefficient use of resources and wasted funds. Similar issues have been seen in the [“accelerator state”](#) program fostering “little giant” companies.

Foreign companies could come under pressure to participate. The notice explicitly mentions supporting foreign firms to build high-level smart factories and R&D centers in China to build a resilient global production network. If companies do invest in these smart factories, they are likely to win favor with local governments. However, the plan also states that applicants for smart factory status need to agree to on-site verification and the exchange of typical technology cases, so foreign companies should be aware of the risks of intellectual property and technology leakages.

**Article:** Notice on Carrying out the Gradient Cultivation Action of Smart Factories in 2024 (六部门关于开展 2024 年度智能工厂梯度培育行动的通知) ([Link](#))

**Issuing bodies:** MIIT etc.

**Date:** October 28, 2024

#### 4. Biomanufacturing best practice: MIIT collects model cases

**At a glance:** The MIIT issued instructions to collect typical examples of smart technologies – such as AI – being implemented in biomanufacturing facilities. The model cases should cover each stage of product development, from R&D through scaling up to mass production. The document outlines eight priority areas, including:

- Discover and design high-performance protein sequences and spatial structures with the help of machine learning, big language models and other artificial intelligence
- Explore the gene expression and enzyme reaction level regulation mechanism of engineered bacterial strains and cell lines, to improve yield, conversion rate, and stress resistance
- Enhance bioreactor mass production methods through smart sensors, online analysis, digital twins, etc., allowing for monitoring and adjustments in real time

**MERICS comment:** The government’s efforts to compile and promote best practice cases for high-tech biomanufacturing reflect the high value placed on the biotech industry as a strategic sector. In 2022, the National Development and Reform Commission (NDRC) released a dedicated [development plan for the bioeconomy](#), highlighting potential applications for biotech advances in fields like agriculture, medicine and environmental protection. The smart manufacturing typical cases seek to leverage digital technologies to fast track the development and commercialization processes. Yet the actual impact of this “best practice promotion” approach is likely to be limited. Companies that can afford to pursue smart production methods would be driven to explore them anyway because of competitive pressures.

Local firms could gain from participating in the typical case program by winning political favor and enhancing their reputation as a high-tech enterprise. The provincial MIIT departments are empowered to provide additional financial and taxation support to companies that feature in typical cases. For foreign firms, the incentives to participate are less clear, as they risk helping local competitors to emulate or outpace their own advanced production methods. Such best practice lists could be more useful to foreign firms as a reference to gain insights into their competitors’ manufacturing processes.

**Article:** Notice on the Collection of Typical Application Cases of Smart Technologies in Biomanufacturing (工业和信息化部办公厅关于开展智能技术在生物制造领域典型应用案例征集工作的通知) ([Link](#))

**Issuing body:** MIIT

**Date:** October 30, 2024

## 5. MIIT seeks to upgrade traditional manufacturing through model technologies

**At a glance:** The MIIT invited companies to apply for its selection of advanced and applicable technologies to upgrade five traditional manufacturing industries: non-ferrous metals, chemicals, general machinery, light industry, and electronics. By requiring eligible technologies to have a low threshold for adoption, the scheme is targeted to benefit small and medium-sized companies too. The notice sets out four technology areas for applicants to choose from:

- High-end technology: improve the technical content and added value of industrial products such as basic components or industrial software
- Smart technology: optimize algorithms, improve data processing capabilities, and achieve independent decision-making
- Green technology: promote energy conservation and carbon reduction and improve environmental protection and resource utilization
- Industrial base technology: enhance the industrial base, including measurement, standards, quality, management, digital information technologies

**MERICS comment:** The notice reflects China's ongoing efforts to digitalize and upgrade its entire industrial sector and manufacturing industries. Recent policies with a similar focus include a 2024 [MIIT notice](#) on collecting typical cases of deep integration between the real economy and the digital economy and [MIIT guiding opinions](#) issued in 2023 on transforming and upgrading traditional manufacturing. The real economy was also highlighted as a priority at the [Third Plenum](#) of the CCP Central Committee in 2024. Even so, the Chinese leadership's focus on manufacturing has a longer tradition and is clearly visible in its Made in China 2025 strategy as well.

It is still unclear how tempting it is for companies, both foreign and Chinese, to participate in this scheme. It requires technologies to have a low threshold for wide-spread adoption and tasks the MIIT with actively promoting the use of these technologies to other companies. This might consist of building platforms to link supply and demand or organizing technical training. Companies that take part may therefore want to consider submitting applications that do not involve their core technologies, otherwise they risk losing their competitive edge.

**Article:** Notice on the Selection of Advanced and Applicable Technologies (工业和信息化部办公厅关于开展先进适用技术遴选工作的通知) ([Link](#))

**Issuing body:** MIIT

**Date:** November 11, 2024

## NOTEWORTHY

### Policy news

- *October 29:* The State Administration for Market Regulation announced opinions on guiding online trading platforms to support the development of SMEs. The main goal is to leverage platform traffic to support SMEs in their digital transformation. ([SAMR notice](#))
- *October 29:* The NDRC and others announced opinions on implementing renewable energy substitution to achieve carbon peak and carbon neutrality targets. ([NDRC notice](#))
- *October 30:* The State Council approved the upgrading of four provincial-level development zones, i.e., Guangzhou Huadu Economic Development Zone, Jiangxi Guixi Economic Development Zone, Chongqing Fuling Industrial Park, and Shenyang Financial and Trade Development Zone, to state-level economic and technological development zones. ([State Council notice](#))
- *November 07:* The Ministry of Ecology and the Environment issued a plan for the prevention and control of soil pollution. The plan also contains stricter ecological requirements for companies, such as in the oil extraction industry. ([MEE notice](#))
- *November 08:* The MIIT announced the 2024 "Famous Teachers and Excellent Courses", an SME talent training program, to help SMEs improve production, operation, and management. ([MIIT notice](#))
- *November 15:* The MIIT released guidelines for construction of the national lithium battery industry standards system. By 2027, over 100 new national industry standards and ten international standards are to be established. ([MIIT Notice](#))
- *November 20:* The Cyberspace Administration of China (CAC) announced a global cooperation initiative to promote consensus on cross-border data flow rules between countries and regions, while balancing innovation, economic development, the protection of national security, personal privacy, and intellectual property rights. ([CAC Notice](#))
- *November 25:* The MIIT published typical application cases of advanced computing. The document highlights 35 cases in traditional manufacturing, 20 cases in new manufacturing, and 18 cases in future manufacturing fields. ([MIIT notice](#))

### Corporate news

- *October 29:* Siemens Healthineers signed two cooperation agreements with Chinese companies, focusing on preclinical research of computed tomography



spectroscopy cardiovascular imaging, and on digital healthcare and artificial intelligence. ([Yicai Global](#))

- *October 29:* ByteDance is planning to set up a new R&D center in Europe, expanding its talent and research base for artificial intelligence and large language models on the European continent. ([Yicai Global](#))
- *November 6:* Sinopec has signed an agreement with TotalEnergies to purchase two million tons of LNG annually for 15 years, starting in 2028. ([Yicai Global](#))
- *November 12:* Volkswagen has entered into an agreement with the Chinese company Senior Tech to buy lithium-ion battery separators over the course of the next five years. ([Yicai Global](#))
- *November 13:* Airbus announced it will open a second A320 assembly line in China by 2026. As of now, Chinese airlines operate 2,232 Airbus planes, comprising 55 percent of the country's fleet. ([Yicai Global](#))
- *November 13:* BioNTech is purchasing the Chinese company Biotheus for USD 800 million. This acquisition will support BioNTech's oncology strategy and grant it full global rights to the bispecific antibody candidate BNT327. ([Reuters](#))
- *November 14:* Merck has entered into a licensing agreement with Shanghai-based LaNova Medicines, valued at up to USD 3.3 billion, for an early-stage cancer drug. Merck will pay USD 588 million upfront, with LaNova eligible for up to USD 2.7 billion in milestone payments. ([Reuters](#))
- *November 15:* Merck and five other international pharmaceutical companies have been approved to offer stem cell and gene therapy services in Shanghai's Free Trade Zone, following China's recent opening to foreign investment in these sectors. ([Yicai Global](#))
- *November 20:* The European chipmaker STMicroelectronics announced plans to partner with Hua Hong, a Chinese semiconductor foundry. STMicroelectronics, which is the biggest maker of energy-efficient Silicon Carbide chips used in electric vehicles, argued that manufacturing locally in China was essential to its competitive position. ([Reuters](#))
- *November 21:* China surpassed Germany and Japan in industrial robot adoption density, recording 470 robots per 10,000 employees in 2023. This reflects China's efforts to drive forward the deployment of automation technologies in manufacturing. ([SCMP](#))



## **AUTHORS**

Alexander Brown  
Senior Analyst, MERICS

Andreas Mischer  
Associate Analyst, MERICS

## **EDITORS**

Claudia Wessling  
Director Communications  
and Publications, MERICS

Mary Hennock  
Freelance Editor

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

## **PUBLISHER**

**MERICS | Mercator Institute for China Studies**

Alte Jakobstraße 85–86

10179 Berlin

Tel.: +49 30 3440 999 0

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

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