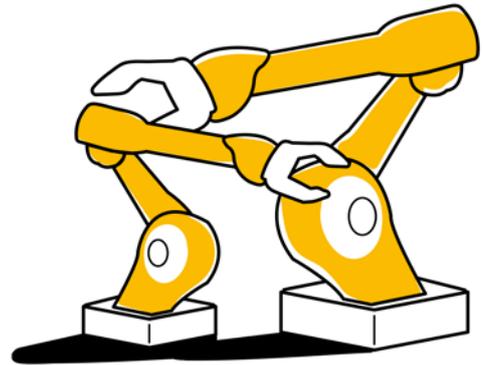


MAY 4, 2022 (REPORTING PERIOD: MARCH 30 - APRIL 26)

MERICS

China Industries



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MERICS TOP 5

1. All energy sources on the table in innovation plan

At a glance: The National Energy Administration (NEA) and Ministry of Science and Technology (MOST) released a 14th Five-Year Plan (FYP) for technological innovation in the energy sector. The document includes timelines for activities such as Research and Development (R&D), demonstrations and marketization, covering more than 80 different technologies. The overarching goals for 2025 are:

- Increase the proportion of renewables in the energy system, research and test advanced technologies such as 15 MW offshore wind turbine machine designs and new manufacturing methods for crystalline silicon cells
- Develop safe nuclear energy systems and run demonstration pilots for small modular reactors and other advanced nuclear technologies
- Promote the clean, low-carbon and efficient use of fossil energy
- Advance the digitalization and smartification of the energy system

MERICS comment: This document is an update on the [long-term plan](#) for energy technology innovation (2016-2030). Both policies reflect China's diversified strategy on energy policy, seeking to decarbonize through renewables as well as nuclear, without immediately abandoning its fossil fuel resources. Innovation is seen as essential to acquire ownership of core technologies in new forms of energy and boost domestic energy supply.

China will still derive a most of its energy from coal [for at least another decade](#). Energy storage solutions need to be expanded and made cheaper before renewables can become the primary source of energy. Until then, coal will be relied on to maintain the stability of power supply in China. Last year's power shortages and the war in Ukraine have heightened China's focus on energy security.

In the short term, China's ambitions in energy technology are an opportunity for increased cooperation with Europe. Chinese firms are eager to absorb foreign expertise: the joint development of the world's largest [single stack electrolyser](#) by Belgian engineering company John Cockerill and Huaneng is a good example. Trade in clean energy technologies between China and Europe will likely strengthen as investment in the energy transition ramps up. But competition will also increase, as Chinese manufacturers enhance their offerings in areas like offshore wind technology. Crucially, European policymakers ought to avoid overdependence on Chinese suppliers for key technologies.

Article: 14th Five-Year Plan for Science, Technology and Innovation in the Energy Sector (国家能源局科学技术部关于印发《“十四五”能源领域科技创新规划》的通知) ([Link](#))

Issuing bodies: NEA, MOST

Date: April 2, 2022

2. Good chemistry: China strives for clean, green and advanced chemicals

At a glance: Six departments issued guiding opinions to promote the development of the petrochemical and chemical industries over the next five years. Policymakers want to expand operations in high value-added special fuels and advanced chemicals, and shut down outdated and inefficient petrochemical plants. Goals for 2025 include:

- Achieve breakthroughs in 20 key technologies, including carbon capture utilization and storage, and 40 new technologies, including shape-memory polymers
- Guarantee the supply of 75 percent of new chemical materials
- Reduce total emissions of volatile organic compounds by more than 10 percent
- Control the export of high-carbon products through a new catalogue and strictly control production capacity in refining and other polluting industries

MERICS comment: The (petro-)chemical sectors are the – often overlooked – cradle of China’s manufacturing prowess. Crude oil and gas not only provide heat and fuel, they are also essential for producing advanced chemicals required for high value-added products such as airplanes and semiconductors.

China’s SOE-dominated petrochemical sector – particularly oil refining – suffers from overcapacities, which is why policymakers have their eyes set on restructuring. For them, China’s future lies in advanced chemicals and new materials, not refined oil. They want producers to gain efficiency and focus on chemical inputs. State-owned Sinopec exemplifies what Chinese leaders have in mind: After Exxon Mobil, Sinopec is the second company globally to successfully [commercialize crude oil steam-cracking technology](#) to directly produce chemicals like ethylene from crudes.

The focus on new materials is not new, they are one of the ten key sectors in *Made in China 2025*. To spur on the development of the sector Beijing is following a multi-pronged strategy. As of 2019 China relied on imports for at least [130 types](#) of new chemical materials. For now, the country relies on foreign companies like BASF and Exxon Mobil to fill the gaps in urgently needed high-value chemicals. But Beijing also senses an opportunity to leapfrog international competition. In 2021, to bolster indigenous development capacities, the government merged ChemChina and Sinochem. Locally, Shanghai’s municipal government [subsidizes R&D activities](#) of innovative chemical firms. For foreign companies this means that Chinese competition in- and outside China will increase.

Article: Guiding Opinions to Promote the High-Quality Development of the Petrochemical and Chemical Industries during the “14th Five-Year Plan” Period

(关于“十四五”推动石化化工行业高质量发展的指导意见) ([Link](#))

Issuing bodies: MIIT, NDRC, MOST, MEE, MEM, NEA

Date: April 8, 2022

3. MIIT looks to expand dominance in synthetic fibers from conventional to advanced varieties

At a glance: The Ministry of Industry and Information Technology (MIIT) released guidelines to support the upgrading of China's synthetic fiber industry. The policy aims to consolidate the competitiveness of the textile sector and support the development of strategic emerging industries. The key targets outlined for 2025 are:

- Maintain the annual added-value growth rate of synthetic fiber enterprises at five percent and keep China's share of global synthetic fiber production steady
- Increase R&D expenditure intensity to two percent and ensure R&D and manufacturing capacity in high-performance fibers meets national strategic needs
- Raise both the digitalization rate of business management systems, and the numerical control rate of key processes to 80 percent
- Increase output of bio-based and degradable fiber materials by at least 20 percent each year

MERICs comment: According to the MIIT, China accounts for [70 percent](#) of global production of synthetic fibers. These man-made fibers are used to make garments, home furnishings and industrial parts. But overcapacity and fierce competition in common varieties has led to low value-added production. Policymakers see an opportunity to improve the quality and differentiation of conventional fibers through upgrades to smart and green production methods. In line with the government's industrial policy focus on new materials, high-performance fibers are also being heavily promoted. These advanced fibers are of key strategic importance, due to their dual-use applications and growing market demand. They can be applied in sectors ranging from aerospace to renewable power generation, to transportation and national defense.

As it stands, China's manufacturing capabilities in most advanced synthetic fibers are still behind other developed economies. In 2020, domestic firms accounted for only [38 percent](#) of China's carbon fiber market, a product which can be used in wind turbine blades, missiles, vehicle components, and more. China's SOEs are actively trying to plug this gap. For instance, Sinopec and CRRC, the world's largest rail transit equipment manufacturer, are working together on incorporating [carbon fiber composites](#) into 400 km/h high-speed trains as well as maglev trains. Yet R&D efforts into high-performance materials have been on-going for decades and the existing technology gap will most likely endure for the foreseeable future.

Article: Guiding Opinions on the Development of the Chemical Fiber Industry
(两部委关于化纤工业高质量发展的指导意见) ([Link](#))

Issuing body: MIIT

Date: April 21, 2022

4. Safety first: new regulations aim to keep NEV growth on track

At a glance: Five government ministries issued guidelines that aim to improve the safety of new energy vehicles (NEVs). The guidelines encourage manufacturers to use big data analysis to improve vehicle battery safety and cybersecurity. The ministries want to double down on safety checks and expect companies to swiftly rectify any quality issues. Notable encouraged measures for EV producers include:

- Establish an NEV monitoring platform that collects vehicle data and uploads it to a central database which is shared with government authorities for further vehicle safety analysis
- Promote R&D in safe batteries and advance the early warning capabilities of NEVs, including thermal real-time monitoring and fire-fighting
- Strengthen data security and cybersecurity of NEVs by taking preventive measures to guard against cybersecurity attacks and data leakage

MERICs comment: NEV safety issues in China are **rare**. Traditional internal combustion engine powered vehicles are more likely to ignite than battery powered vehicles. Still, battery fires are notoriously difficult to extinguish and often receive widespread media coverage. That could put off consumers, especially first time NEV buyers, at a time when China's NEV sector faces headwinds in the form of surging mineral prices and the phase-out of NEV purchasing subsidies. More importantly, as Chinese NEV makers go global, the country is keen to remake its image and become a standard setter for safety norms.

The policy mentions monitoring platforms, which are already a **legal requirement** for market access. All China-based NEV makers collect the safety and operating status data of their vehicles and are required to share this information with government authorities. This data – in anonymized form – is accessible for researchers including (rival) car makers. This business to government (B2G) data pooling could give China-based producers a unique innovation advantage and should be of interest to the EU who is also looking into setting up a B2G mechanism as part of its **Data Act**. Still, the renewed attention to this feature by Chinese policymakers might signal that so far NEV makers have made insufficient use of the monitoring platforms.

Article: Guiding Opinions on Further Strengthening the Construction of a Corporate Safety System for New Energy Vehicles (五部门关于进一步加强新能源汽车企业安全体系建设的指导意见) ([Link](#))

Issuing bodies: MIIT, MPS, MOT, MEM, SAMR

Date: April 8, 2022

5. Industrial Internet plan promotes local hardware and foreign software

At a glance: The “Industrial Internet Special Working Group”, a task force composed of twenty Chinese ministries and commissions and spearheaded by the MIIT, released its 2022 Work Plan. The annual instructions outline the main priorities and tasks for officials related to developing China’s “Industrial Internet” (i.e., Internet of Things in the industrial field). Key targets include:

- Establish digital platforms and system solutions with 10 key enterprises in each sector, including the machinery, automotive, energy, electronics, metallurgy, petrochemical, and mining sectors
- Draft 20 proposals for the establishment of Industrial Internet standards
- Revise and expand the "Catalogue of Industries Encouraging Foreign Investment" to promote foreign investment in the Industrial Internet sector for the first time
- Reinforce financial support for Industrial Internet sector via reductions to R&D expenses, subsidized public finance, and promotion of private equity funds

MERICs comment: China’s national champions in telecommunications equipment, namely Huawei and ZTE, inevitably stand to benefit from the priorities laid out in this work plan. They will enjoy state support, both through the promotion of a “5G + Industrial Internet” framework and associated investment in 5G equipment, as well as through the issuing of special funds and continued implementation of tax preferential policies. This aligns with [existing policies](#) designed to strengthen China’s hardware leaders, in an effort to ensure that Huawei and ZTE not only survive the US-China tech war, but also thrive as global players.

From a software perspective, the instructions for 2022 reflect the [substantial gap](#) that domestic firms have with foreign industry leaders. As such, the work plan not only emphasizes R&D, production, and management of “basic industrial software technology”, but it also calls for the state-guided promotion of foreign investment in industrial software. Despite growing geopolitical tensions over recent years, China has repeatedly shown an eagerness to maintain ties with major software industry leaders, such as SAP, Oracle, and Microsoft. The government encourages foreign companies to localize operations to insulate them from geopolitical disruptions. Until viable indigenous alternatives emerge, Chinese policymakers will remain dependent on foreign firms to assist in their industrial upgrading goals.

Article: Notice on the Industrial Internet Task Force 2022 Work Plan

(关于印发《工业互联网专项工作组 2022 年工作计划》的通知) ([Link](#))

Issuing body: MIIT

Date: April 13, 2022

NOTEWORTHY

Policy news

- *April 2:* The Ministry of Finance, State Taxation Administration and Ministry of Science and Technology grant additional tax deductions based on R&D expenses to high-tech small and medium enterprises ([MOF notice \(CN\)](#); [People's Daily article \(CN\)](#))
- *April 8:* China's leading small group on decarbonization commits to strictly investigate and punish carbon market data falsification, after inspections revealed widespread problems with emissions data submitted by power plants ([NDRC notice \(CN\)](#); [Bloomberg article \(EN\)](#))
- *April 8:* The Ministry of Transport (MOT) and MOST jointly release the "14th Five-Year Plan for Science and Technology Innovation in the Transport Sector" ([MOT notice \(CN\)](#))
- *April 11:* MOT issues policy guidelines on the development of the cold chain logistics industry, including to promote innovation in and the upgrading of related technical equipment ([MOT notice \(CN\)](#))
- *April 13:* MIIT releases a list of 179 demonstration projects related to the Internet of Things ([MIIT notice \(CN\)](#))
- *April 13:* The State Administration for Market Regulation and MIIT jointly call for applications for pilot projects on smart manufacturing standards in 2022 ([SAMR notice \(CN\)](#))
- *April 14:* MIIT issues instructions on the selection process for big data demonstration projects related to the cultivation of a data market, key big data products and services, and industrial big data applications ([MIIT notice \(CN\)](#))
- *April 21:* MIIT and the NDRC release guidelines on the development of the industrial textiles sector, encouraging the production of high-quality textiles for use in sectors such as aerospace, healthcare, transport, etc. ([MIIT notice \(CN\)](#))

Corporate news

- *March 30:* Eve Energy, one of China's top EV battery producers, announces plans to build a factory in Debrecen, Hungary's second largest city ([Automotive News article \(EN\)](#))
- *April 7:* According to figures provided by financial data platform Qichacha, investment in China's semiconductor sector more than tripled between 2020 and 2021, reaching CNY 387.6 billion last year ([Yicai article \(EN\)](#))

- *April 9:* EV-maker Nio reveals that it has halted production due to supply chain disruptions caused by COVID lockdowns, following other auto manufacturers such as Tesla and Volkswagen which have also temporarily shut down operations ([Reuters article \(EN\)](#))
- *April 12:* The Beijing Academy of Quantum Information Sciences announces that Chinese scientists successfully establish the world's longest quantum secure direct communication, measuring 100 km ([BAQIS article \(CN\)](#); [Xinhua article \(EN\)](#))
- *April 15:* An NDRC spokesperson states that China's ten planned national data center clusters have already attracted over CNY 190 billion in investment ([NDRC press conference \(CN\)](#); [Yicai article \(EN\)](#))
- *April 19:* GCL Technology and TCL Technology reveal plans to jointly invest CNY 12 billion in a silicon materials plant in Inner Mongolia, with the aim to manufacture both solar and semiconductor polysilicon ([Shenzhen Securities Times article \(CN\)](#); [South China Morning Post article \(EN\)](#))

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