

Restructuring for self-reliance: The implications of China's science and technology overhaul

China's leadership has recently announced that central party-state science and technology policy coordination will be reorganised before the end of 2023. The Ministry of Science and Technology will redirect more funding to research that can help achieve self-sufficiency in critical technologies. A new central commission for science and technology will be set up under the Central Committee of the Communist Party to increase party control over science and technology policy.

At the annual session of China's National People's Congress (NPC) in March 2023, State Councillor Xiao Jie (肖捷) unveiled a [plan to reform](#) various state and party institutions. Several of these changes aim to improve coordination of China's science and technology policy. From this, we can gather that China's leadership puts science and technology policy [at the top of the agenda](#) and that its assessment is that progress has so far been [insufficient](#).

When setting out the plan to NPC delegates, Xiao stressed that the aim is to improve resource planning and management of the entire [innovation chain](#). A reform of China's [research evaluation](#) system has been ongoing since 2016 to focus more on contributions to society, such as patents and innovation, rather than scientific publications.

The draft [2023 budget](#) for China's central government published by the Ministry of Finance included a modest increase of 2 percent in spending on science and technology but a stated ambition to "improve the mechanisms for managing government funds". In addition, [companies](#) are encouraged to invest more in research and development (R&D), especially in basic research. In China, companies contributed only 6.5 percent of total R&D spending on [basic research](#) in 2020, compared with 47 percent in Japan and 32 percent in the United States. Local government is another important player in research funding in China. According to the new [reform plan](#), provincial party committees should set up their own coordination bodies for science and technology.

Geopolitics is pushing China to strive for self-reliance

The recent restructuring is probably a response to the current situation of geopolitical tensions and conflict over technologies. US export controls and increasing scrutiny of technology transfers to China have accelerated the need for the country to restructure and to try to improve its science and technology policy.

Self-reliance in science and technology (科技自立自强) is a political concept that [first appeared](#) in late 2020 as China's response to [losing access](#) to technologies such as semiconductors as a result of US sanctions. In what is seen by China's leaders as a more hostile international environment, securing domestic R&D of critical technologies is essential, and the government is therefore concentrating and centralising resources to meet this goal. In this context, problems with bottlenecks in technology are described as affecting not only China's economy but also its [global influence](#).

Under such new circumstances, scientific and technological innovation in manufacturing industry is paramount, especially in sectors where China has [severe shortcomings](#): high-end engines, specialized materials, machine tools, semiconductors and integrated circuits, biomedicine and medical equipment.

Streamlining MOST and elevating its status

Although revamped as late as 2018, the Ministry of Science and Technology (MOST) is set to undergo another transformation in 2023, allowing it to focus on major national projects and technology areas and elevating its status in the state bureaucracy. Routine approval for government funding for research in areas such as the environment, agriculture and health will be moved to the respective ministries in charge. MOST will instead focus on policymaking and efforts to generate innovation and [resolve bottlenecks in technology](#).

Part of the background to the reform is that MOST has long been criticised by academics in China for its dual roles of policymaker and research fund manager – a combination of roles that many see as making it both referee and player. As far back as 2004, scholars were suggesting that management and [funding administration](#) functions should be moved to other ministries. Some experts view the current restructuring as an attempt to finally resolve a long-standing problem of [fragmented responsibilities](#) in China's research system. The new commission under the Communist Party is expected to raise the status and authority of MOST and leave it [better positioned](#) to coordinate other ministries also involved in science and technology work. In addition, the commission will replace several leading small groups (LSGs) with overlapping responsibilities in science and technology policy coordination, possibly reducing [fragmentation](#).

Some experts argue that the present restructuring does not go far enough, as MOST will retain responsibility for basic research through its subsidiary the National Natural Science Foundation of China (国家自然科学基金委员会, NSFC), meaning that a vast amount of [research funding](#) will remain within the ministry's purview.

Possible implications for European stakeholders

The push for self-reliance as a driving force in Chinese policy is a trend that is set to dominate in the coming years and influence several policy areas, not only science and technology but also industrial policy, education and possibly also international exchanges in a wider sense. The current restructuring, or rather the trends in China's science and technology policy that it embodies, could affect European research stakeholders in various ways.

The first implication is that China's efforts to use research to further its national goals, and possibly pressure researchers to contribute to such goals, could entail an **increased risk of unwanted [technology transfer](#)**.

The second implication is that current restructuring efforts aimed at strengthening party leadership over science and technology could make European stakeholders **more wary of collaborations with Chinese counterparts**. This is already happening and could be exacerbated by changes in China's policy and organisation. For example, local debate in Europe on increased political control over research in China as well as uncertainty regarding relationships with China more generally have prompted research funding agencies to reconsider how research should be jointly funded together with Chinese state actors.

Representatives of European research funding organisations have told the author that the incorporation of the NSFC into MOST in 2018 did not affect their cooperation, which continues to function well, although the Ministry now has the final say over which projects will be granted funding. Nonetheless, in some cases China's economic interests have become more visible. For example, applications for joint funding related to a certain industrial sector were discarded without explanation, possibly to protect China's industry.



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About the Swedish National China Centre

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