Notice from seven departments including the Ministry of Industry and Information Technology on Issuing the Implementation Plan for Promoting Equipment Upgrading in the Industrial Sector

Ministry of Industry and Information Technology Joint Regulation [2024]

No. 53

To the People's Governments of all provinces, autonomous regions and municipalities directly under the Central

Government, and all ministries and commissions and directly affiliated institutions of the State Council:

The "Implementation Plan for Promoting Equipment Upgrading in the Industrial Sector" has been approved by the State Council and is hereby issued to you for your earnest implementation.

Ministry of Industry and Information Technology,
National Development and Reform Commission
, Ministry of Finance , People's Bank
of China, State
Taxation Administration,
State Administration for Market Regulation, and

State Financial Regulatory Commission

, March 27, 2024

Implementation Plan for Promoting Equipment Upgrading in the Industrial Sector

Promoting large-scale equipment upgrades in the industrial sector is conducive to expanding effective investment, continuously increasing the proportion of advanced production capacity, and is of great significance to accelerating the construction of a modern industrial system. To implement the decisions and plans of the CPC Central Committee and the State Council, and to promote

equipment upgrades and technological transformation in the industrial sector, the following implementation plan is formulated.

I. General Requirements

To promote large-scale equipment upgrades in the industrial sector, we must be guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly implement the spirit of the 20th CPC National Congress, and follow the arrangements of the Central Economic Work Conference and the Fourth Meeting of the Central Financial and Economic Affairs Commission. We must coordinate efforts to expand domestic demand and deepen

supply-side structural reforms, focusing on promoting new industrialization. We should take large-scale equipment upgrades as a starting point, implement the manufacturing technology transformation and upgrading project, and prioritize digital transformation and green upgrading to promote the high-end, intelligent, and green development of the manufacturing industry, providing strong support for developing new productive forces and improving the quality and level of the national economic cycle.

—Adhere to market-oriented development. Uphold the unified national market, give full play to the decisive role of the market in resource allocation, and rely on the

market to provide diversified supply and services in response to the differentiated needs of various equipment upgrades in the industrial sector. Better leverage the government's role to create a policy environment conducive to enterprise technological transformation and equipment upgrades.

—Adhere to standardization as a guiding principle. Strengthen the formulation and implementation of standards for technology, quality, energy consumption, and emissions, and guide enterprises to eliminate outdated equipment and use advanced equipment in accordance with laws and regulations to improve production efficiency and

technological level. Take into account industry development and market realities, and promote progress in a gradual and orderly manner.

—Adhere to integrated hardware and software upgrades. Proactively adapt to and lead the new round of technological revolution and industrial transformation, actively promote the empowerment of new industrialization by next-generation information technology, and while driving hardware upgrades, focus on iterative upgrades and innovative applications of software systems.

By 2027, investment in industrial equipment will increase by more than 25% compared to 2023. The adoption

rate of digital R&D design tools and the CNC rate of key processes in large-scale industrial enterprises will exceed 90% and 75%, respectively. Digital transformation of large-scale industrial enterprises in major industrial provinces and cities and key industrial parks will be fully covered. Production capacity below the energy efficiency benchmark level in key industries will be basically phased out, the energy efficiency of major energy-consuming equipment will basically reach the energy-saving level, the level of intrinsic safety will be significantly improved, innovative products will be promoted and applied more rapidly, and the

proportion of advanced production capacity will continue to increase.

II. Key Tasks

(a) Implement advanced equipment upgrade program

1. Accelerate the replacement of outdated and inefficient equipment. For industries where production equipment is generally at a low to medium level, such as industrial machine tools, agricultural machinery, construction machinery, and electric bicycles, accelerate the elimination of outdated, inefficient, and expired equipment. Key initiatives include: upgrading machine tools

that have been in service for more than 10 years in the industrial machine tool industry; upgrading flexible shearing, forming, welding, and manufacturing technologies and equipment in the agricultural machinery industry; upgrading hydraulic presses, bending machines, outdated production lines, and online testing equipment in the construction machinery industry; upgrading CNC machining equipment and calibration equipment in the instrumentation industry; upgrading short-process textile equipment such as rotor spinning machines, and cotton spinning equipment such as spinning frames and automatic winding machines in the textile industry; and upgrading automatic welding robots,

automated spraying and drying equipment, electric or pneumatic assembly equipment, insulation withstand voltage testers, and cyclic charge-discharge testers in the electric bicycle industry.

2. Upgrade and upgrade high-end advanced equipment. For industries such as aviation, photovoltaics, power batteries, and bio-fermentation, where production equipment is generally at a medium-to-high level, enterprises are encouraged to upgrade to a batch of advanced equipment with high technology, high efficiency, and high reliability. The focus will be on promoting the aviation industry to comprehensively develop its capabilities in the assembly

and integration of large aircraft, large amphibious aircraft, and aero-engines, as well as its supply chain support capabilities; the photovoltaic industry to upgrade to advanced equipment such as large hot zone single crystal furnaces, high-speed, small-axis-pitch multi-wire cutting machines, multi-in-one coating equipment, and large-size multi-busbar module string welding machines; the power battery industry to upgrade its production equipment to higher precision, higher speed, and higher reliability, with a focus on upgrading equipment such as ultrasonic welding machines, laser welding machines, liquid injection machines, and capacity separation cabinets; and the bio-

fermentation industry to implement extraction process technology upgrades, updating evaporators, centrifuges, new drying systems, and continuous ion exchange equipment.

3. Upgrade and update testing and inspection equipment. In key industries such as petrochemicals, pharmaceuticals, shipbuilding, and electronics, upgrade a batch of advanced equipment to enhance engineering and industrialization capabilities, focusing on pilot-scale verification and inspection and testing stages such as design verification, testing verification, and process verification. Prioritize upgrading advanced equipment such as model manufacturing equipment and experimental analysis instruments in the

design verification stage; upgrading mechanical testing, optical testing, and environmental testing instruments in the testing verification stage; upgrading specialized testing equipment such as environmental adaptability testing, reliability testing, process verification testing, and safety testing in the process verification stage, as well as specialized sample preparation and pilot production equipment such as specialized sample preparation, material processing, electronic assembly, and machining; and upgrading electronic measurement, non-destructive testing, and intelligent testing instruments and equipment in the inspection and testing stage.

(II) Implementing Digital Transformation Actions

4. Promote the application of intelligent manufacturing equipment. Focusing on the transformation of production operations, warehousing and logistics, and quality control, promote the upgrading of general intelligent manufacturing equipment such as CNC machine tools and basic manufacturing equipment, additive manufacturing equipment, industrial robots, industrial control equipment, intelligent logistics equipment, and sensing and testing equipment. Prioritize the upgrading of equipment manufacturing to intelligent complete production lines and flexible production units for specific scenarios; promote the integrated application of

electronic product-specific intelligent manufacturing equipment and automated assembly lines in the electronic information manufacturing industry; accelerate the deployment and application of new intelligent equipment such as unmanned transport vehicles in the raw materials manufacturing industry, and promote the intelligent transformation and upgrading of major process equipment such as catalytic cracking and smelting; and promote intelligent equipment for new models such as flexible production and personalized customization in the consumer goods manufacturing industry.

5. Accelerate the construction of smart factories. Accelerate the deep integration of next-generation information technology with the entire manufacturing process and all elements, promoting breakthroughs in manufacturing technology, process innovation, lean management, and business process reengineering. Promote the deep application of new technologies such as artificial intelligence, 5G, and edge computing in manufacturing, forming a number of typical scenarios such as virtual testing and debugging, digital process design, and intelligent online testing. Promote equipment networking and digital linkage in production processes to achieve data

connectivity, manufacturing flexibility, and intelligent management, creating digital workshops. Carry out intelligent upgrades across the entire manufacturing process, including production, management, and services, optimizing organizational structures and business processes to create smart factories. Give full play to the role of the industrial internet identifier resolution system, guiding leading enterprises to drive upstream and downstream enterprises to transform simultaneously, creating a smart supply chain.

6. Strengthen digital infrastructure construction. Accelerate the large-scale deployment of new network

infrastructure such as the Industrial Internet, the Internet of Things, 5G, and gigabit optical networks, and encourage industrial enterprises to upgrade their internal and external networks. Build an integrated system of industrial basic computing resources and application capabilities, accelerate the deployment of industrial edge data centers, construct edge computing facilities for specific scenarios, and promote the coordinated development of cloud, edge, and terminal computing power. Increase the supply of high-performance intelligent computing and build intelligent computing centers at computing power hub nodes.

Encourage large group enterprises and industrial parks to establish distinctive industrial internet platforms.

(III) Implement the Green Equipment Promotion Campaign

7. Accelerate the green transformation of production equipment. Promote the application of energy-saving and environmentally friendly green equipment in key energy-consuming industries and key processes. The steel industry should accelerate the ultra-low emission transformation of existing blast furnaces, converters, electric furnaces, etc., and strive to achieve environmental performance level A; the building materials industry should focus on pollution reduction, carbon reduction, energy saving and

consumption reduction in existing cement, glass, building sanitary ceramics, glass fiber and other fields, and upgrade related equipment and technologies such as raw material preparation, kiln control, grinding and crushing; the non-ferrous metals industry should accelerate the upgrading and transformation of green, efficient and environmentally friendly equipment such as high-efficiency and stable aluminum electrolysis, green and environmentally friendly copper smelting, and recycled metal smelting; and key light industries such as home appliances should accelerate the upgrading of secondary and above high-efficiency equipment.

8. Promote the energy efficiency upgrade of key energy-consuming equipment. In accordance with the "Advanced Energy Efficiency Level, Energy Saving Level and Access Level of Key Energy-Consuming Products and Equipment (2024 Edition)", with the focus on improving energy efficiency, promote the upgrading of key energy-consuming equipment such as boilers, motors, transformers, refrigeration and heating air compressors, heat exchangers, and pumps in various fields such as industry, and promote the application of energy-saving equipment with energy efficiency level 2 and above.

9. Accelerate the application of solid waste treatment and water-saving equipment. Focusing on major industrial solid waste generating industries, upgrade and transform processes with high industrial solid waste generation, upgrade equipment and facilities for the comprehensive utilization of industrial solid waste and recycled resources, and improve the level of industrial resource conservation and intensive utilization. For industries such as petrochemicals, steel, building materials, textiles, papermaking, leather, and food that have issued national standards for water intake (use) quotas, promote industrial water conservation and wastewater recycling, transform

industrial cooling circulation systems and wastewater treatment and reuse systems, and update a number of cooling towers and other equipment.

(iv) Implement actions to improve the level of inherent safety.

10. Promote the safety upgrade of aging petrochemical plants. Promote the application of continuous reactor, micro-reaction, and supergravity reaction technologies, as well as digital technologies such as reactor optimization control and predictive maintenance of pumps and turbines. Upgrade aging coal gasification furnaces, reactors (vessels), distillation columns, pumps and turbines, heat

exchangers, storage tanks, and other equipment. Properly mitigate safety risks associated with aging plants, such as high process risks, high failure rates of moving equipment, and susceptibility to leakage in static equipment, thereby improving the industry's inherent safety level.

11. Enhance the inherent safety level of the civil explosives industry. Focusing on promoting the technological upgrading and transformation of industrial explosives and industrial electronic detonator production lines, and aiming at unmanned operation of hazardous positions, implement projects of "mechanization replacing manpower, automation reducing manpower" and "robot

replacing manpower," and increase the promotion and application of safety technologies and equipment. Key upgrades and transformations will focus on fixed production lines for industrial explosives, on-site mixing explosives production points and on-site mixing explosives vehicles, and detonator filling and assembly production lines.

12.推广应用先进适用安全装备。加大安全装备在重点领域推广应用，在全社会层面推动安全应急监测预警、消防系统与装备、安全应急智能化装备、个体防护装备等升级改造与配备。围绕工业生产安全事故、地震地质灾害、洪水灾害、城市内涝灾害、城市特殊场景火灾、森林草原火灾、紧急生命救护、社区家庭安全应急等重点场景，推广应用先进可靠安全装备。

三、保障措施

（一）加大财税支持。加大工业领域设备更新和技术改造财政支持力度，将符合条件的重点项目纳入中央预算内投资等资金支持范围。加大对节能节水、环境保护、安全生产专用设备税收优惠支持力度，把数字化智能化改造纳入优惠范围。

（二）强化标准引领。围绕重点行业重点领域制修订一批节能降碳、环保、安全、循环利用等相关标准，实施工业节能与绿色标准化行动，制定《先进安全应急装备（推广）目录》，推广《国家工业和信息化领域节能降碳技术装备推荐目录》，引导企业对标先进标准实施设备更新和技术改造。

（三）加强金融支持。设立科技创新和技术改造专项再贷款，引导金融机构加强对设备更新和技术改造的支持。发挥国家产融合作平台作用，编制工业企业技术改造升级导向计划，强化银企对接，向金融机构推荐有融资需求的技术改造重点项目，加大制造业中长期贷款投放。

（四）加强要素保障。鼓励地方加强企业技术改造项目要素资源保障，将技术改造项目涉及用地、用能等纳入优先保障范围，对不新增土地、以设备更新为主的技术改造项目，推广承诺备案制，简化前期审批手续。

各地区工业和信息化主管部门牵头负责本地区工业领域设备更新工作组织实施，要完善工作机制，做好政策解读，加强协同配合，强化央地联动，建立重点项目库，推动各项任务落实落细。

Standard question:	Notice from seven departments including the Ministry of Industry and Information Technology on Issuing the Implementation Plan for Promoting Equipment Upgrading in the Industrial Sector	Issuing authority:	Ministry of Industry and Information Technology, National Development and Reform Commission, Ministry of Finance, People's Bank of China, State Taxation Administration, State Administration for Market Regulation, and State Financial Regulatory Commission
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