

Blueprint for Integrated New Energy Development

Policy Express

By LIN Yuchen

China's new policy blueprint to accelerate integrated and coordinated development of new energy marks a decisive shift in how the country plans, builds, and operates its rapidly expanding clean energy system.

The Guiding Opinions on Promoting Integrated and Synergistic Development of New Energy, issued by the National Energy Administration, position "integration and fusion" as the central pathway for the next stage of energy transition.

With new energy installed capacity surpassing coal for the first time during the 14th Five-Year Plan period, the document signals a structural recalibration aimed at ensuring both large-scale deployment and high-quality consumption of renewables.

The policy calls for comprehensive overhaul of development models across solar, wind, hydropower, storage, hydrogen, and emerging non-electric applications. By 2030, integrated development is expected to become a dominant paradigm, significantly enhancing the reliability, competitiveness, and systemic value of new energy while supporting broader green transformation.

A major pillar of the policy is multi-dimensional integrated development. The government will optimize the energy



Photo shows a ship powered by green energy. (PHOTO: XINHUA)

mix and storage ratios of large "sand-desert-Gobi" renewable bases, expand the role of dispatchable sources such as concentrated solar power, and deepen collaboration between renewables and coal for peak-shaving through molten salt storage, green ammonia co-firing, and other technologies.

China will also push water-wind-solar integration across major river basins and explore 100 percent renewable energy bases supported by pumped storage and new storage technologies. Provinces are encouraged to expand complementary wind, solar, gas, and storage development.

Spatial planning will be tightened to promote land-efficient, co-located

wind-solar projects, large-scale offshore wind clusters, and multi-use marine energy infrastructure. Distributed renewables will be expanded across transportation hubs, buildings, rural areas, and islands, supported by flexible grids, smart microgrids, vehicle-to-grid technology, and integrated "photovoltaic-storage-charging" solutions.

A deeper industrial transformation is central to the plan. China aims to drive "green manufacturing with green power" by building renewable-powered industrial clusters and low-carbon parks using green electricity, microgrids, and green-certificate trading.

High energy-consuming industries are encouraged to relocate to renewable

rich regions and upgrade processes to improve flexibility and reduce carbon intensity.

Emerging sectors such as computing power, new materials, and high-end manufacturing will be integrated with renewable bases, including the deployment of data centers near offshore wind farms.

Non-electric uses of renewables will be significantly expanded. China will strengthen wind-solar-hydrogen-storage coordination, accelerate R&D in dynamic electrolyzer operation, build large-scale green hydrogen, ammonia, and methanol bases, and integrate renewable heating through heat pumps, geothermal, hybrid heat sources, and long-duration thermal storage.

To ensure effective implementation, the policy mandates unified project planning, accelerated approval, optimized grid dispatch, stronger market mechanisms, multi-year green-power purchase agreements, and improved capacity compensation. It also calls for certification systems for green hydrogen and other non-electric energy carriers.

Overall, the guidance represents a strategic upgrade of China's new energy roadmap, shifting from rapid expansion toward deeply integrated, technologically advanced, and system-optimized development capable of underpinning China's long-term energy security and green modernization.



Case Study

Tianjin Platform Helps Enterprises Navigate Globalization

By LIN Yuchen & CHEN Xi

With global supply chains undergoing rapid restructuring, Chinese companies are increasingly viewing overseas expansion not as an option but as a strategic imperative. The Tianjin Economic-Technological Development Area (TEDA) has strengthened its "go global" support system with the establishment of a One-stop Overseas Service Base.

TEDA's emerging service architecture is designed to give firms the capability, standards, and confidence to compete in complex global markets.

The service base has already demonstrated its role as an interdepartmental coordination hub. When unmanned aerial vehicle manufacturer EFY Intelligent faced customs delays, the base convened the customs authority's special office, commercial regulators, and airport customs to clarify procedures and optimize workflows.

Export efficiency improved by 50 percent, and the company now has a standardized process for future large-scale shipments. For general manager Zhang Yun, the experience showed how targeted, cross-departmental intervention can remove immediate obstacles while building long-term capacity.

TEDA has developed a dual-track service model — "global presence abroad, strong support at home." It is anchored by a rapid-response mechanism: one-hour demand confirmation, 24-hour resource matching, and seven-day execution.

The base operates 13 domestic centers and 21 overseas service stations across Belt and Road regions, Europe, and the United States. Through partnerships with more than 60 business associations and over 100 specialized institutions, it provides a full-element service

matrix capable of responding to diverse needs, from compliance and logistics to market entry and factory localization.

To guide enterprises through different phases of globalization, TEDA created a five-stage service framework — guidance, launch, acceleration, safeguarding, and return. This is supported by 104 standardized procedures covering legal compliance, customs facilitation, cross-border finance, and overseas industrial development.

This structure has enabled companies such as Lianlong New Materials to advance major international projects, including securing site approval for a \$178 million R&D and manufacturing base. More than 40 enterprises have already received customized "one enterprise, one plan" services, with over 500 consultations and transactions handled.

Talent development is another pillar. To address the shortage in overseas-ready professionals, TEDA has established a Cross-border Digital Economy Talent Base, integrating industry, education, and training.

Focusing on "foreign language + cross-border e-commerce" and "foreign language + intelligent manufacturing," the base partners with over 30 universities and 200 experts, developing practical modules that have already trained more than 1,000 composite talents for 500 enterprises.

Companies report above 90 percent satisfaction with overseas position-matching and significant gains in market expansion efficiency.

Through this "one port, one island, dual-track, multi-node" system, TEDA aims to deliver a full-chain, full-cycle, and full-coverage support network that enables Chinese enterprises to navigate the world with greater security, speed, and strategic clarity.



Staff members operate at the Tianjin Platform. (PHOTO: XINHUA)

Transforming Sci-tech Feats into Industry Standards

By LIN Yuchen

China has issued a comprehensive framework to accelerate the transformation of scientific and technological innovations into formal industry standards so that a more efficient, innovative, and competitive industrial landscape can emerge.

It emphasizes the critical role of standards in bridging the gap between scientific research and commercial application and aims to align scientific breakthroughs with industry needs to enhance productivity, drive economic growth, and optimize the technological landscape across various sectors.

The objective is deeper integration of standardization efforts with scientific

advancements, reinforcing the importance of turning technology into actionable, scalable, and widely applicable industry norms.

At the core of this framework is a systematic approach to converting scientific achievements into formal standards. The guideline details the steps, including demand analysis, feasibility studies, and a robust evaluation process that ensures each technological breakthrough meets the criteria for widespread adoption.

New methodologies have been introduced for assessing the potential impact of these technologies, factoring in aspects such as market demand, competitiveness, safety, and innovation.

Technological achievements are cat-

egorized into three distinct types: public interest technologies, common technologies applicable across industries, and proprietary technologies with specialized use cases. This classification helps tailor the standardization process to the unique requirements of each area, ensuring that the standards are developed in line with both market needs and strategic national interests.

The policy also addresses the growing significance of international competitiveness. With China aiming to lead in global technological innovation, the guideline promotes the alignment of domestic standards with international norms. This will help break down technical trade barriers and facilitate smoother integration into global markets, further

positioning China as a key player in the international technological arena.

In addition, the document stresses the importance of data security, intellectual property rights, and environmental sustainability in the standardization process. These factors will be closely monitored to ensure that the standards foster technological growth as well as contribute to a sustainable, secure, and equitable future.

Through these revisions, China is reaffirming its commitment to technology-driven industrial development, strengthening its position in the global innovation ecosystem, and ensuring that scientific breakthroughs lead to tangible improvements in national and global industries.

Action Plan for Smart City Digital Transformation

By LI Linxu

China has established 2027 and 2035 as crucial milestones to reshape its urban landscapes into more efficient, livable and economically vibrant hubs.

The recently released action plan to deepen smart city development and advance citywide digital transformation is a detailed roadmap for harnessing data to revolutionize urban management, services and economic growth.

The plan, jointly issued by the Na-

tional Development and Reform Commission, the National Data Administration, the Ministry of Finance, the Ministry of Housing and Urban-Rural Development and the Ministry of Natural Resources, aims to make significant progress in data-driven urban economic and social development by the end of 2027.

Key objectives include achieving "efficient handling of one matter" coverage for critical city operations and "efficient completion of one matter" for high-frequency public services.

The digital economy is projected to become a new growth engine, with breakthroughs in intelligent governance, inclusive services and urban digital renewal.

More than 50 citywide digital transformation cities are to be established, with megacities and large cities taking the lead in creating new smart governance systems and deploying advanced, independently developed urban

large models.

By 2035, the vision expands to cultivating a group of modern cities with international competitiveness and global influence.

The plan is structured around several key action areas, such as smart and efficient urban governance, digital empowerment for emergency safety, digital services for a better life, and data-driven economic empowerment. Urban digital renewal and building a consolidated digital base are other action areas.

In smart and efficient urban governance, it focuses on building an integrated urban management system. The integration of systems for city operations, comprehensive management, traffic control, and emergency response is a priority.

Cities will be encouraged to build risk monitoring and early warning systems for public safety, production safety, and natural disasters. The use of large models for rapid analysis of extreme weather like rainstorms and typhoons will be promoted, along with developing digital emergency response plans for all types of disasters and scenarios.

It advocates for expanding integrated public services via platforms like

one-network for easy access, reducing processing time and the need for in-person visits.

The plan calls for activating the value of data elements to drive industrial development through urban development. It also encourages the development of new business models like data as a service and the growth of data-intensive sectors.

Efforts will be made to advance the digital upgrading of critical urban infrastructure, such as water supply, drainage, gas, and heating systems, using advanced technologies like AI to enhance safety and management.

The construction of unified and intensively managed urban digital infrastructure will be promoted, including perception networks, data transmission networks, and computing power.

To ensure successful implementation, the plan outlines supporting measures such as adapting urban governance systems for the digital era, establishing sustainable operation and maintenance models, and creating a comprehensive standard system for citywide digital transformation.



Visitors view creative models at an exhibition themed "Future City." (PHOTO: HONG Xing / Science and Technology Daily)

Developing New Quality Productive Forces in Light of Local Conditions

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In the next five years, higher strategic priority must be given to fostering new quality productive forces in line with local conditions, according to a symposium on China's economic and social development in the 15th Five-Year Plan period (2026-2030) in April.

The roles of technological innovation and the real economy were highlighted, and efforts urged to transform and upgrade traditional industries, de-

velop emerging industries, and make forward-thinking arrangements for industries of the future, so as to accelerate modernization of the industrial system.

The fourth plenary session of the 20th CPC Central Committee that concluded last month also stressed achieving greater self-reliance and strength in science and technology and steering the development of new quality productive forces.

Moon Samples Reveal Oxidation Theory Breakthrough

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This work provides the first direct evidence that strongly oxidized iron minerals, such as hematite, can form on Moon despite its overall reducing conditions. It sheds new light on Moon's redox state and the origin of its localized magnetic fields.

The research has been published in the international journal *Science Advances*.

The findings are expected to provide a crucial scientific basis for future lunar studies and deepen understanding of Moon's evolutionary history.

The Chang'e-6 mission's successful landing and sampling within the South Pole-Aitken Basin created a unique opportunity to investigate the extreme geological processes preserved in this ancient impact structure.