

Energy in China's New Era (I)

新时代的中国能源发展(上)

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Preamble

Energy is the foundation and driving force for the progress of human civilization. It matters to the economy, to people's lives, to national security, and to the survival and development of humanity. It is of vital importance in advancing social and economic development and public welfare.

Since the founding of the People's Republic of China (PRC) in 1949, under the leadership of the Communist Party of China (CPC), a relatively complete energy industry system has been established. This has largely been achieved through self-reliance and hard work. Since the launch of the reform and opening-up policy in 1978, to adapt to the rapid development of the economy and society, China has promoted the development of energy in a comprehensive, coordinated and sustainable manner. Today, China has become the world's largest energy producer and consumer. Its transition to efficient energy utilization has been the fastest in the world.

Since the 18th CPC National Congress in 2012, China has entered a new era, as has its energy development. In 2014, President Xi Jinping put forward a new energy security strategy featuring Four Reforms and One Cooperation¹, pointing out the direction for the quality growth of the energy industry with Chinese characteristics in the new era. China upholds the vision of innovative, coordinated, green, open and shared development with focus on high quality and restructuring of the supply side. It has been working on all fronts to reform the ways energy is consumed, to build a clean and diversified energy supply system, to implement an innovation-driven energy strategy, to further the reform of the energy system, and to enhance international energy cooperation. China has entered a stage of high-quality energy development.

A thriving civilization calls for a good eco-environment. Facing increasingly severe global problems such as climate change, environmental risks and challenges, and energy and resource constraints, China embraces the vision of a global community of shared future and accelerates its transformation towards green and low-carbon development in economy and society. In addition to promoting clean and low-carbon energy use domestically, China has been an active participant in global energy governance, exploring a path of worldwide sustainable energy alongside other countries. At the general debates of the 75th United Nations General Assembly in September 2020, President Xi pledged that China will scale up its Intended Nationally Determined Contributions by adopting more vigorous policies and measures, striving to have carbon dioxide emissions peak before 2030 and to achieve carbon neutrality before 2060. In the new era, China's energy strategy will provide forceful support for sound and sustained economic and social development, and make a significant contribu-

前言

能源是人类文明进步的基础和动力，攸关国计民生和国家安全，关系人类生存和发展，对于促进经济社会发展、增进人民福祉至关重要。

新中国成立以来，在中国共产党领导下，中国自力更生、艰苦奋斗，逐步建成较为完备的能源工业体系。改革开放以来，中国适应经济社会快速发展需要，推进能源全面、协调、可持续发展，成为世界上最大的能源生产消费国和能源利用效率提升最快的国家。

中共十八大以来，中国发展进入新时代，中国的能源发展也进入新时代。习近平主席提出“四个革命、一个合作”能源安全新战略，为新时代中国能源发展指明了方向，开辟了中国特色能源发展新道路。中国坚持创新、协调、绿色、开放、共享的新发展理念，以推动高质量发展为主题，以深化供给侧结构性改革为主线，全面推进能源消费方式变革，构建多元清洁的能源供应体系，实施创新驱动发展战略，不断深化能源体制改革，持续推进能源领域国际合作，中国能源进入高质量发展新阶段。

生态兴则文明兴。面对气候变化、环境风险挑战、能源资源约束等日益严峻的全球问题，中国树立人类命运共同体理念，促进经济社会发展全面绿色转型，在努力推动本国能源清洁低碳发展的同时，积极参与全球能源治理，与各国一道寻求加快推进全球能源可持续发展新道路。习近平主席在第七十五届联合国大会一般性辩论上宣布，中国将提高国家自主贡献力度，采取更加有力的政策和措施，二氧化碳排放力争于2030年前达到峰值，努力争取2060年前实现碳中和。新时代中

tion to ensuring world energy security, addressing global climate change, and boosting global economic growth.

The Chinese government is publishing this white paper to provide a full picture of China's achievements in its energy development and its major policies and measures for energy reform.

I. Developing High-Quality Energy in the New Era

China's energy strategy in the new era endeavors to adapt to domestic and international changes and meet new requirements. China will continue to develop high-quality energy to better serve economic and social progress, support the Beautiful China and Healthy China initiatives, and build a clean and beautiful world.

1. The New Energy Security Strategy

In its energy plans for the new era, China has adopted a new strategy featuring Four Reforms and One Cooperation.

—One reform to improve the energy consumption structure by containing unnecessary consumption. China is determined to carry out the principle of prioritizing energy conservation, and has tightened the control of total energy consumption and energy use intensity, and enforced energy conservation in all areas of social and economic development. It resolves to adjust its industrial structure. It emphasizes energy conservation in the process of urbanization, and works to develop a green and low-carbon transport system. China encourages hard work and thrift and calls people to conserve energy and work and live with green energy, and move faster towards an energy-saving society.

—One reform to build a more diversified energy supply structure. In the direction of green development, China has been vigorously promoting the clean and efficient utilization of fossil energy, prioritizing the development of renewable energy, developing nuclear power in a safe and orderly manner, and raising the proportion of non-fossil energy in the energy supply structure. China has intensified efforts for the exploration and exploitation of oil and gas resources, to increase reserve and production volumes. China has been building the production, supply, storage and sales systems for coal, electricity, oil and gas, while improving energy transportation networks, storage facilities, the emergency response system for energy storage, transportation and peak load management, and enhancing its supply capacity for safer and higher-quality energy.

—One reform to improve energy technologies to upgrade the industry. China is implementing the innovation-driven development strategy, building a system that nurtures innovation in green energy technologies, and upgrading energy technologies and equipment in an all-round way. China has strengthened basic research on energy, innovation in generic and disruptive technologies, and original and integrated innovation. China has started to integrate digital, big-data and AI technologies with technologies for clean and efficient energy exploration and exploitation, with a focus on smart energy technologies, to turn these technologies and related industries into new growth drivers for industrial upgrading.

—One reform to optimize the energy system for faster growth of the energy sector. China is determined to promote energy market reform, to marketize energy commodities and form a unified and open market with orderly competition. China is furthering energy pricing reform, to create a mechanism in which the market determines the price. China has been working to modernize its law-based energy governance system, developing new models of efficient energy management, and pushing forward reforms to streamline government

国的能源发展，为中国经济社会持续健康发展提供有力支撑，也为维护世界能源安全、应对全球气候变化、促进世界经济增长作出积极贡献。

为介绍新时代中国能源发展成就，全面阐述中国推进能源革命的主要政策和重大举措，特发布本白皮书。

一、走新时代能源高质量发展之路

新时代的中国能源发展，积极适应国内国际形势的新发展新要求，坚定不移走高质量发展新道路，更好服务经济社会发展，更好服务美丽中国、健康中国建设，更好推动建设清洁美丽世界。

(一) 能源安全新战略

新时代的中国能源发展，贯彻“四个革命、一个合作”能源安全新战略。

——推动能源消费革命，抑制不合理能源消费。坚持节能优先方针，完善能源消费总量管理，强化能耗强度控制，把节能贯穿于经济社会发展全过程和各领域。坚定调整产业结构，高度重视城镇化节能，推动形成绿色低碳交通运输体系。在全社会倡导勤俭节约的消费观，培育节约能源和使用绿色能源的生产生活方式，加快形成能源节约型社会。

——推动能源供给革命，建立多元供应体系。坚持绿色发展导向，大力推进化石能源清洁高效利用，优先发展可再生能源，安全有序发展核电，加快提升非化石能源在能源供应中的比重。大力提升油气勘探开发力度，推动油气增储上产。推进煤电油气产供储销体系建设，完善能源输送网络和储存设施，健全能源储运和调峰应急体系，不断提升能源供应的质量和安全保障能力。

——推动能源技术革命，带动产业升级。深入实施创新驱动发展战略，构建绿色能源技术创新体系，全面提升能源科技和装备水平。加强能源领域基础研究以及共性技术、颠覆性技术创新，强化原始创新和集成创新。着力推动数字化、大数据、人工智能技术与能源清洁高效开发利用技术的融合创新，大力发展智慧能源技术，把能源技术及其关联产业培育成带动产业升级的

administration, delegate powers, improve regulation, and upgrade service. It has strengthened planning and policy guidance for the energy sector, and improved the regulatory system of the energy industry.

—Comprehensive cooperation with other countries to realize energy security in an open environment. Under the principle of equality and mutual benefit, China is opening its door wider to the world. China promotes green and sustainable energy under the Belt and Road Initiative (BRI), and endeavors to improve energy infrastructure connectivity. China has been an active participant in global energy governance, increasing energy cooperation and exchanges with other countries, and facilitating international trade and investment in the energy sector. China has joined the international community in building a new model of energy cooperation, maintaining energy market stability, and safeguarding common energy security.

2. Guiding Philosophies for Energy Policies in the New Era

—Putting people first. China upholds the principle of energy development for the people, by the people and answerable to the people. Its primary goal is to ensure energy supply for people's life and to ensure that the poverty-stricken population have access to electricity. To this end, China has been improving energy infrastructure related to people's life and public services, and has integrated energy development with poverty eradication. China has launched programs on poverty reduction through energy support, which exemplify the fundamental role of energy supply, infrastructure and services in the battle against poverty.

—Promoting a clean and low-carbon energy. China embraces the vision of harmonious coexistence between humanity and nature, directing its efforts towards clean and low-carbon energy. China promotes green energy production and consumption, and has improved the relevant structures accordingly. China is increasing the proportion of clean energy and non-fossil energy at the consumption stage, reducing carbon dioxide emissions and pollutant discharge by large margins, and working hard to accelerate its transformation towards green and low-carbon development for the Beautiful China initiative.

—Ensuring the core status of innovation. China is focusing on transforming the energy sector through technical advancement. China is actively promoting independent innovation in energy technologies, and increasing sci-tech input in the national energy development. With enterprises playing a key role in innovation, China has been promoting close collaboration along the energy industrial chain between enterprises, universities and research institutes, to reduce technology imports and boost independent innovation so as to develop a new model where innovations of both upper and lower streams well interact and coordinate with each other.

—Pursuing development through reform. China will fully leverage the decisive role of the market in allocating energy resources, and ensure the government better play its part in this regard. It is endeavoring to advance market-oriented reform in the competitive areas of the energy sector, further display the role of the market mechanism, and build a high-quality energy market system. China has highlighted the guiding role of its energy strategy and planning, formed a law-based governance system and a regulatory system in the energy industry, and improved the financial and fiscal systems that support green and low-carbon energy transformation. All these measures aim to unlock potential and provide support for quality growth of the energy sector.

—Building a global community of shared future. Confronted by

新增长点。

——推动能源体制革命，打通能源发展快车道。坚定不移推进能源领域市场化改革，还原能源商品属性，形成统一开放、竞争有序的能源市场。推进能源价格改革，形成主要由市场决定能源价格的机制。健全能源法治体系，创新能源科学管理模式，推进“放管服”改革，加强规划和政策引导，健全行业监管体系。

——全方位加强国际合作，实现开放条件下能源安全。坚持互利共赢、平等互惠原则，全面扩大开放，积极融入世界。推动共建“一带一路”能源绿色可持续发展，促进能源基础设施互联互通。积极参与全球能源治理，加强能源领域国际交流合作，畅通能源国际贸易，促进能源投资便利化，共同构建能源国际合作新格局，维护全球能源市场稳定和共同安全。

(二) 新时代能源政策理念

——坚持以人民为中心。牢固树立能源发展为了人民、依靠人民、服务人民的理念，把保障和改善民生用能、贫困人口用能作为能源发展的优先目标，加强能源民生基础设施和公共服务能力建设，提高能源普遍服务水平。把推动能源发展和脱贫攻坚有机结合，实施能源扶贫工程，发挥能源基础设施和能源供应服务在扶贫中的基础性作用。

——坚持清洁低碳导向。树立人与自然和谐共生理念，把清洁低碳作为能源发展的主导方向，推动能源绿色生产和消费，优化能源生产布局 and 消费结构，加快提高清洁能源和非化石能源消费比重，大幅降低二氧化碳排放强度和污染物排放水平，加快能源绿色低碳转型，建设美丽中国。

——坚持创新核心地位。把提升能源科技水平作为能源转型发展的突破口，加快能源科技自主创新步伐，加强国家能源战略科技力量，发挥企业技术创新主体作用，推进产学研深度融合，推动能源技术从引进跟随向自主创新转变，形成能源科技创新上下游联动的一体化创新和全产业链协同技术发展模式。

——坚持以改革促发展。充分发挥市场在资源配置中的决定性作用，更好发挥政府作用，深入