Institute for Governance & Sustainable Development

Original Chinese version of the Action Plan
for Controlling Industrial-Sector Nitrous Oxide Emissions
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工业领域氧化亚氮排放控制行动方案

Action Plan for Controlling Industrial-Sector Nitrous Oxide (N_2O) Emissions

为贯彻《中共中央 国务院关于全面推进美丽中国建设的意见》有关要求，科学、合理、有序控制工业领域温室气体氧化亚氮排放，扎实推进工业绿色低碳转型，制定本行动方案。

To implement the relevant requirements of the "Opinions of the Central Committee of the Communist Party of China (CPC) and the State Council on Comprehensively Advancing the Construction of a Beautiful China," this Action Plan is formulated to scientifically, reasonably, and orderly control N_2O emissions in the industrial sector and to steadily advance the industry's green and low-carbon transformation.

一、 总体要求

1. Overall Requirements

以习近平新时代中国特色社会主义思想为指导，全面贯彻党的二十大和二十届二中、三中全会精神，深入贯彻习近平生态文明思想，落实全国生态环境保护大会部署，坚持降碳、减污、扩绿、增长协同推进，坚定不移实施积极应对气候变化国家战略，坚持系统观念，以资源循环利用、减排技术创新、协同控制为手段，加快形成工业领域氧化亚氮排放管理体系，推进减污降碳协同增效，有效控制工业领域氧化亚氮排放。

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, [we will] fully implement the spirit of the 20th CPC National Congress and the second and third plenary sessions of the 20th CPC Central Committee. [We will] thoroughly implement Xi Jinping Thought on Ecological Civilization, carry out the arrangements made at the National Conference on Ecological and Environmental Protection, and adhere to the coordinated advancement of carbon reduction, pollution control, green expansion, and economic growth. [We will] resolutely implement the national strategy of actively responding to climate change, adhere to a systematic approach, and accelerate the formation of a management system for N_2O emissions in the industrial sector through resource recycling, emissions reduction, technological innovation, and coordinated

control. [We will] promote synergistic benefits in pollution control and carbon reduction while effectively controlling industrial-sector N_2O emissions.

到 2030 年，工业领域氧化亚氮排放控制政策进一步完善，减排技术创新能力显著提高，排放管理能力明显加强，氧化亚氮回收利用和排放控制水平有效提高。己二酸行业、硝酸行业、己内酰胺行业单位产品氧化亚氮排放量持续下降，达到国际领先水平。此后，逐步加强工业领域氧化亚氮管控力度。

By 2030, industrial-sector N_2O emissions control policies will be further refined, technological innovation capabilities for emissions reduction will be significantly enhanced, emissions management capacity will be markedly strengthened, and the levels of N_2O recovery, utilization, and emissions control will be effectively improved. [Further,] N_2O emissions per unit of product in the adipic acid, nitric acid, and caprolactam industries will continue to decline, reaching internationally leading levels. Thereafter, N_2O emissions control and management in the industrial sector will be progressively strengthened.

二、 重点任务

2. Key Tasks

（一）推动氧化亚氮减排。推动己二酸、硝酸和己内酰胺生产企业开展氧化亚氮减排，通过使用治理设备、加装催化剂等方式，减少氧化亚氮排放。鼓励己二酸生产企业对氧化亚氮尾气进行回收提纯，鼓励氧化亚氮回收利用。（生态环境部、国家发展改革委、工业和信息化部按职责分工负责）

(1) Promote N_2O emissions reduction. Encourage adipic acid, nitric acid, and caprolactam producers to reduce N_2O emissions through measures such as operating treatment equipment and adding catalysts. Adipic acid producers are encouraged to recover and purify N_2O tail gas [(off gas)], and reutilize recovered N_2O. (Responsibility [for these key tasks is] divided among the Ministry of Ecology and Environment (MEE), the National Development and Reform Commission (NDRC), and the Ministry of Industry and Information Technology (MIIT), according to their respective mandates.)

（二）完善氧化亚氮控排配套政策。研究利用相关资金渠道支持建设氧化亚氮回收提纯装置和己二酸、硝酸和己内酰胺行业氧化亚氮减排装置。鼓励开展气候投融资，推荐具有氧化亚氮减排效益的项目纳入生态环保金融支持项目库和气候投融资试点项目库。加快推进利用温室气体自愿减排交易等市场机制鼓励工业领域氧化亚氮减排。（生态环境部、国家发展改革委、工业和信息化部按职责分工负责）

(2) Improve supporting policies for N_2O emissions control. Explore utilization of relevant funding channels to support the construction of N_2O recovery and purification facilities, as well as N_2O mitigation equipment in the adipic acid, nitric acid, and caprolactam industries. Encourage climate

finance initiatives and recommend projects with N_2O reduction benefits for inclusion in the ecological and environmental finance support project database and climate finance pilot project database. Accelerate the use of market mechanisms, such as voluntary greenhouse gas emissions trading, to incentivize N_2O reduction in industrial sectors. (Responsibility [for these key tasks is] divided among MEE, NDRC, and MIIT according to their respective mandates.)

（三）加强技术创新。持续开展源头和过程控制、资源化利用、监测和减排等关键技术的研发创新，开展氧化亚氮排放控制技术示范工程建设，支持工业领域氧化亚氮排放控制相关技术申报国家重点推广的低碳技术目录，推动工业领域氧化亚氮减排催化剂的研制与应用，加快推进重点领域氧化亚氮排放控制装备和技术的集成化和产业化，推动成立工业领域氧化亚氮控排产学研联盟，有效提升工业领域氧化亚氮减排能力。（生态环境部、国家发展改革委、工业和信息化部按职责分工负责）

(3) Strengthen technological innovation. Continuously advance research and development of key technologies in source and process controls, resource reutilization, monitoring, and emissions reduction. Implement demonstration projects for N_2O emissions control technologies. Support the inclusion of industrial-sector N_2O emissions control technologies into the National Catalogue of Key Low-Carbon Technologies for Promotion. Promote the development and application of catalysts for N_2O emissions reduction in the industrial sector. Accelerate the integration and industrialization of N_2O emissions control equipment and technologies in key sectors. Promote the establishment of an industry-academia-research alliance for industrial N_2O emissions control to enhance industrial N_2O reduction capabilities effectively. (Responsibility [for these key tasks is] divided among MEE, NDRC, and MIIT according to their respective mandates.)

（四）强化工业领域氧化亚氮协同管控。加强工业领域氧化亚氮与氮氧化物、挥发性有机物（VOCs）等的协同控制，研究探索建立协同控制制度，开展绿氨掺烧与氧化亚氮排放机理研究。开展工业领域氧化亚氮与臭氧层保护协同控制政策研究。研究在己二酸、硝酸和己内酰胺等重点行业建设项目环境影响评价中开展氧化亚氮排放评价，提出减污降碳协同控制措施。（生态环境部）

(4) Strengthen synergistic control of N_2O in the industrial sector. Enhance coordinated management of N_2O alongside nitrogen oxides, volatile organic compounds (VOCs), and other pollutants in industrial processes. Explore the establishment of a synergistic control framework and conduct research on the mechanisms for green ammonia co-firing[-related] N_2O emissions. Conduct policy research on the synergistic control of industrial-sector N_2O emissions and protection of the ozone layer. Study the incorporation of N_2O emissions assessment into environmental impact assessments for construction projects in key industries, including the adipic acid, nitric acid, and caprolactam [industries], etc., and propose synergistic pollution control and carbon emissions reduction measures. (MEE.)

（五）加强工业领域氧化亚氮监测、报告和核查体系建设。推进建立重点企业氧化亚氮排放报告制度，研究制定工业领域氧化亚氮监测标准和排放相关标准，在工业领域探索开展氧化亚氮排放源自动监测。加强工业领域氧化亚氮排放数据质量管理，持续提升专业化能力。（生态环境部牵头，工业和信息化部参与）

(5) Strengthen the development of monitoring, reporting, and verification systems for industrial-sector N_2O [emissions]. Advance the establishment of an N_2O emissions reporting system for key enterprises, research and formulate monitoring standards and related emission standards for industrial-sector N_2O, and explore the implementation of automated monitoring of industrial-sector N_2O emissions sources. Enhance the quality management of industrial-sector N_2O emissions data and continuously improve professional capabilities. (Led by MEE, with participation from MIIT.)

（六）加强国际交流与合作。坚持多边主义，坚持发挥联合国气候变化框架公约主渠道作用，遵循共同但有区别的责任原则、公平原则和各自能力原则，积极参与全球工业领域氧化亚氮控排交流和对话合作。（生态环境部、国家发展改革委、工业和信息化部按职责分工负责）

(6) Strengthen international exchanges and cooperation. Uphold multilateralism and leverage the primary role of the United Nations Framework Convention on Climate Change. Adhere to the principles of common but differentiated responsibilities, equity, and respective capabilities. Actively participate in global exchange, dialogue, and cooperation on industrial-sector N_2O emissions control in the industrial sector. (Responsibility [for these key tasks is] divided among MEE, NDRC, and MIIT according to their respective mandates.)

三、 组织实施

3. Organization and Implementation

（一）加强统筹协调。生态环境部会同有关部门建立协调配合的工作机制，组织落实工业领域氧化亚氮排放控制行动方案，明确任务分工，协调解决实施中遇到的重大问题。充分发挥行业协会等社会团体作用，督促企业自觉履行社会责任，稳妥有序开展工业领域氧化亚氮排放控制工作，确保各项重点举措落地见效。（生态环境部牵头，国家发展改革委、工业和信息化部参与）

(1) Strengthen coordination and collaboration. The MEE, in collaboration with relevant departments, will establish a coordinated working mechanism to organize the implementation of the Action Plan for Controlling Industrial-Sector N_2O Emissions. This will involve clarifying tasks and coordinating solutions to major issues encountered during implementation. The role of industry associations and other social organizations will be fully leveraged to urge enterprises to voluntarily fulfill their social responsibilities. Efforts will be made to steadily and orderly advance

the control of industrial-sector N_2O emissions, ensuring that all key measures are effectively implemented. (Led by the MEE, with participation from the NDRC and the MIIT.)

（二）加强宣传培训。普及工业领域氧化亚氮减排技术相关知识，开展工业领域氧化亚氮排放能力建设活动，稳步提升氧化亚氮排放数据质量。引导企业、高等学校、科研单位开展产学研合作，培养一批工业领域氧化亚氮排放控制技术性人才。加强对工业领域氧化亚氮排放控制的气候、经济和环境效益的宣传。开展工业领域氧化亚氮排放控制典型经验做法宣传。（生态环境部、国家发展改革委、工业和信息化部按职责分工负责）

(2) Strengthen publicity and training. Promote knowledge on N_2O emission reduction technologies in the industrial sector, conduct capacity-building activities for industrial-sector N_2O mitigation, and steadily improve the quality of N_2O emissions data. Guide enterprises, universities, and research institutions to engage in industry-academia-research collaboration, cultivating a cohort of technical professionals specializing in industrial-sector N_2O emissions control technologies. Enhance publicity of the climate, economic, and environmental benefits of controlling industrial N_2O emissions. Promote best practices in industrial N_2O emissions control. (Responsibility [for these key tasks is] divided among MEE, NDRC, and MIIT according to their respective mandates.)

（三）加强工作调度。生态环境部会同有关部门加强对行动方案实施情况的跟踪分析，定期调度工业领域氧化亚氮排放控制措施落实情况。（生态环境部牵头，国家发展改革委、工业和信息化部参与）

(3) Strengthen work coordination. The MEE, in collaboration with relevant departments, will ensure tracking and analysis of the implementation outcomes of this Action Plan, regularly monitoring the implementation of industrial-sector N_2O emissions control measures. (Led by MEE, with participation from NDRC and MIIT.)