CHINA METHANE EMISSIONS CONTROL ACTION PLAN

IGSD annotated draft English translation for reference purposes only. Bracketed text and page numbers are translator additions to improve flow and clarity. Footnotes are translator additions/annotations for reader reference. The translators will consider updates to this draft translation as additional information is available.

See the original *Chinese version of the Methane Emissions Control Action Plan* here.

Transmittal Notice

Notice of 11 departments, including the Ministry of Ecology and Environment, on the issuance of the "Methane Emissions Control Action Plan."

7 November 2023

To the people's governments of all provinces, autonomous regions, and municipalities directly under the Central Government, the Xinjiang Production and Construction Corps, and relevant departments of the State Council:

With the approval of the State Council, the Methane Emissions Control Action Plan is hereby issued. Please implement [the Plan] conscientiously.

Issuing authorities: Ministry of Ecology and Environment, Ministry of Foreign Affairs, National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Natural Resources, Ministry of Housing and Urban-Rural Development, Ministry of Agriculture and Rural Affairs, Ministry of Emergency Management, and National Energy Administration.

Methane Emissions Control Action Plan

In order to implement the "Outline of the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035" and the "Opinions of the Central Committee of the Communist Party of China and the State Council on Completely, Accurately, and Comprehensively Implementing the New Development Concept and Successfully Undertaking Carbon Peaking and Carbon Neutrality," carry out the national strategy to actively respond to climate change, strengthen the coordination of air pollution prevention and methane emissions control, and scientifically and cooperatively manage and control methane emissions in an orderly manner, this Action Plan has been formulated.

1. Facing the situation

Methane is the second largest[1] greenhouse gas in the world, with a high [global] warming potential and a short [atmospheric] life. Actively controlling methane emissions in a prudent and orderly manner combines the climate benefit of slowing down global warming, the economic benefit of energy resource utilization, the environmental benefit of synergistic control of pollutants, and the safety benefit of reducing production accidents. In recent years, China has achieved some results in the resource utilization of methane. However, methane emissions control still faces challenges such as weak statistical and monitoring basis, incomplete regulations and standard system, etc., and urgently needs improvement in technical and management capacity. It is necessary to take more vigorous measures to effectively improve the fundamental capacity for statistical measurement of methane emissions,[2] as well as monitoring and supervision, etc., promote the control of methane emissions in a comprehensive and orderly fashion and actively participate in the global governance of climate change.

2. Overall requirements

(1) **Guiding ideology.**

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, fully implementing the spirit of the 20th National Congress of the Communist Party of China, thoroughly implementing Xi Jinping Thought on Ecological Civilization, carrying out the [positions of the] National Conference on Ecological Environmental Protection, adhering to synergizing carbon reduction, pollution reduction, greening, and growth, and unswervingly implementing the national strategy of actively responding to climate change, adhering to a systemic concept, dealing with the relationship among emissions reduction, development and security, leading with a comprehensive green transformation of economic and social development, taking consolidation of basic capacity as the key, with efficient utilization, technological innovation and synergistic control as the means, we will accelerate the formation of a methane emissions supervision system, promote the synergistic effect of pollution control and carbon reduction, and control methane emissions in an orderly and effective manner.

(2) **Working principles.**

Adhere to integration and coordination. Adhere to the systematic concept, strengthen the utilization of resources and source control, and enhance the synergized reduction of pollution and carbon emissions. Make a comprehensive plan, carry out integrated measures and work together to create a new situation of comprehensive control of methane emissions.

Adhere to building a solid foundation. Based on the improvement of laws and regulations, led by technological innovation and application, and supported by capacity building in statistical

[1] The original Chinese uses "second largest" (第二大). Methane is the "second most important" greenhouse gas in terms of radiative forcing of anthropogenic greenhouse gas emissions.

[2] On the topic of methane metrics and measurement and China, see Gabrielle Dreyfus & Richard "Tad" Ferris (IGSD), Metrics and Measurement of Methane Emissions, *in* Innovative Technologies for Greenhouse Gas Emissions and Carbon Sequestration Monitoring (Scoping Study for China Council for International Cooperation on Environment and Development Special Policy Study, 2023).

measurement, monitoring and supervision, the foundation of methane emissions control will be strengthened.

Adhere to taking different measures based on different situations. Follow the scientific discipline for methane emissions control, adopt different measures taking into account the characteristics and differences of different fields and regions, explore through pilot projects, and solidly promote methane emissions control.

Adhere to a steady and orderly approach. Take into full consideration the actual capacity of the relevant industries, set reasonable work objectives and tasks, scientifically identify key work priorities and difficulties, and adhere to a step-by-step and from-easy-to-hard work rhythm, so as to advance [methane] work in a forceful and effective manner.

Adhere to risk prevention. Strengthen the awareness of risks, adhere to the bottom-line thinking, based on the actual national situation, attend to the relationship between methane emissions control and energy security, food security, security of industrial chain and supply chain and safe production, and prevent and resolve all kinds of major risks.

(3) Main targets.

During the "14th Five-Year Plan" period,[3] a system of policies, technologies and standards for controlling methane emissions is gradually established, the basic capacity for statistical measurement, monitoring and supervision of methane emissions is effectively improved, and positive progress is made in the resource utilization of methane and emissions control. The intensity of methane emissions per unit of agricultural products in the plantation and breeding industries is stabilized and then decreased, and the resource utilization rate of urban domestic waste and the rate of harmless disposal of urban sludge continues to rise nationwide.

During the "Fifteenth Five-Year Plan" period,[4] the system of methane emissions control policies, technologies and standards is further improved, the basic capacity of statistical measurement, monitoring and supervision of methane emissions is significantly upgraded, and the capacity and management level of methane emissions control are effectively improved. The utilization level of coal mine gas is further improved, and the methane emissions intensity per unit of agricultural products in the plantation and breeding industries is further reduced. Thereafter, the oil and gas extraction industry will strive to gradually realize zero conventional flaring for onshore oil and gas extraction.

3. Key Tasks

(1) Strengthen the construction of methane emissions monitoring, measuring, reporting and verification systems.

[3] 2021-2025.

[4] 2026-2030.

1. Strengthen methane emissions monitoring. Explore the development of a methane emission monitoring system on a pilot basis and promote methane emissions source monitoring in key areas. According to the characteristics of methane emissions in China, the monitoring of methane environmental concentrations will be carried out under the existing ecological environment monitoring system, and an integrated sky-earth methane monitoring system, including ground-based monitoring, unmanned aerial vehicles, and satellite remote sensing, will be established step by step.

2. Study the establishment of a methane emissions measuring, reporting and verification system. Study and promote the establishment of a measuring and reporting system for methane emissions by enterprises in key industries, and promote the regular reporting of methane emissions data by large emission sources such as coal mines, oil and gas fields, farms, landfills and sewage treatment plants. Combined with the preparation of national and provincial greenhouse gas inventories, gradually realize the normalized measurement of methane emissions. Organize and carry out data verification, sampling and on-site inspection to steadily improve the quality of methane emissions data.

3. Enhance the level of informatization management of methane emissions data. Promote the construction of an integrated management system for greenhouse gas emissions data, strengthen the integration of information on methane emissions data collection, analysis and utilization, and promote interagency data sharing. Explore and carry out research on the inverse modeling of emissions based on atmospheric methane concentration, and strengthen the calibration of the measurement data against the inverse-modeling data.

(2) Promote methane emissions control in the energy sector.

4. Strengthen the comprehensive utilization of methane. Promote the control and management of methane emissions from the venting of oil and gas fields, and encourage enterprises to carry out the recycling and utilization of associated gas and vented gas in accordance with local conditions, and if it is not possible or difficult to be recycled, venting should be carried out after combustion. Encourage and guide coal enterprises to increase the extraction and utilization of coal mine gas. By 2025, the annual utilization of coal mine gas will reach 6 billion cubic meters; by 2030, the collection rate of associated gas from oilfields will reach the international advanced level.[5]

5. Popularize the application of leak detection and repair technologies. Explore and gradually improve the technical specifications for leak detection and repair in the oil and gas sector, and promote the normalized application of leak detection and repair technology for the whole industrial chain. Strengthen the research and application of advanced pipeline maintenance and repair technologies and equipment, and effectively improve methane leakage control capabilities.

[5] "International advanced level" can also be understood as "on par with advanced international practices or standards."

6. Promote the gradual reduction of conventional flaring[6] in oil and gas systems. Optimize the construction and management of ground engineering in oil and gas fields, and reduce the amount of natural gas flared in flaring systems. Scientifically plan and design new oil and gas projects, and strive to gradually reduce conventional flaring on the basis of ensuring production safety.

(3) Promote methane emissions control in the agricultural sector.

7. Promote the resource utilization of livestock and poultry waste. Focus on large-scale livestock and poultry farms, improve livestock and poultry manure storage and treatment facilities and equipment, promote technologies such as closed manure treatment, gas collection and utilization or treatment, establish manure resource utilization accounts, explore the implementation of nutrient-balanced management of livestock and poultry manure, and raise the level of livestock and poultry manure treatment and resource utilization. Develop biogas in rural areas according to local conditions, encourage the construction of large-scale biogas/bio-natural gas projects in suitable areas, explore incentive and regulatory mechanisms for the end-use of biogas/bio-natural gas, and advance centralized biogas supply or heating, integration of biogas power generation into the grid, and the application of bio-natural gas for vehicle use or incorporation into gas pipeline networks. By 2025, the comprehensive utilization rate of animal and poultry waste will reach more than 80%, and by 2030, more than 85%.

8. Scientifically control methane emissions from enteric fermentation. Focusing on large-scale livestock and poultry farms, select and promote high-yield and low-emission livestock and poultry breeds, popularize low-protein diets, whole-plant silage and other technologies, use feed additives based on plant extracts, probiotics and multifunctional nutritional licking bricks in a reasonable manner, improve livestock and poultry feeding management, implement precision feeding, explore high-yield and low-emission technology models, and guide the reduction of intestinal methane emissions per unit of livestock products.

9. Promote methane emissions control in paddy fields in an orderly manner. Focusing on the main rice-producing areas, strengthen water management in paddy fields, popularize water-saving irrigation techniques in paddy fields according to local conditions, shorten the duration of an anaerobic environment in paddy fields, and reduce methane production and emissions per unit of paddy grain. Improve the management of fertilizer application in paddy fields, and promote the application of compost to the fields. Select and popularize high-yield, high-quality, water-saving and drought-resistant rice varieties, and demonstrate key technologies such as aerobic cultivation, so as to form a high-yield and low-emission rice planting model.

(4) Strengthen methane emissions control from waste and sewage treatment.

[6] "Conventional flaring" (常规火炬) as used here can be understood to refer to routine or non-emergency flaring.

10. Promote the control of methane emissions from waste disposal. Promote the reduction of domestic waste at the source, classified recycling and resource utilization, and improve the resource utilization system for urban domestic waste. Promote the construction of food waste treatment facilities in an orderly manner. Strengthen the comprehensive improvement of domestic waste landfills and raise the level of landfill gas recycling and utilization. By 2025, the resource utilization of urban domestic waste will increase to around 60% nationwide.

11. Strengthen the collection and utilization of methane from sewage treatment. Comprehensively enhance the efficiency of urban domestic sewage collection and treatment, and steadily raise the level of harmless treatment and resource utilization of sludge. Encourage capable sewage treatment facilities to adopt anaerobic digestion of sludge to generate biogas and enhance its recycling and utilization. By 2025, the rate of harmless treatment of urban sludge will reach over 90%.

(5) Strengthen coordinated control of pollutants and methane.

12. Strengthen the synergistic control of pollutants and methane. Make full use of existing ecological and environmental laws and regulations, standards, and policies, and build a management system that integrates the reduction of pollutants and the control of methane emissions. Strengthen the synergistic control of volatile organic compounds and methane, and properly dispose flammable gases containing methane generated by industrial production. Promote the synergistic control of odor-emitting pollutants and methane in landfills. Encourage industries generating wastewater with a high content of organic matter and good biodegradability to negotiate with urban wastewater treatment plants on the concentration of water pollutants in the pipeline in accordance with laws and regulations, so as to reduce the production of methane. Promote the technological upgrade of motor-vehicle and ship power systems to realize synergistic control of pollutants and methane. By 2025, the synergistic control of pollution and methane emissions will be significantly improved.

13. Optimize synergistic control technology routes. Formulate technical guidelines for the synergistic control of pollutants and methane in key areas. Promote the use of integrated control technologies such as hydrocarbon vapor recovery and utilization, sealing for work zones, and safe oxidative combustion in oil and gas extraction. For livestock and poultry waste, promote solid-liquid separation, classified treatment,[7] and deep application as fertilizer to the fields. Popularize the use of high-efficiency methane-producing technologies for high-concentration organic industrial wastewater, together with high-efficiency treatment technologies.

(6) Strengthen technological innovation and methane emissions control supervision.

[7] "Classified treatment" (分质处理) for livestock and poultry waste refers to the practices of undertaking different treatment measures for waste with different physical and/or chemical properties.

14. Strengthen key technological innovation. Strengthen research on the characteristics of methane emissions in different sectors, continuously carry out research and development and innovation in key technologies such as resource utilization, high-yield and low-emission breeding and monitoring, strengthen the construction of demonstration projects on methane emissions control technologies, incorporate methane emissions control technologies into the national catalog of key recommended low-carbon technologies, speed up the integration and industrialization of methane emissions control equipment and technologies in key fields, and develop a number of national key research and development and innovation projects.

15. Strengthen the supervision of methane emissions control. Fully implement the standards for coal mine gas emissions limits, pollution control of domestic waste landfills and pollutant discharge from urban sewage treatment plants, strengthen the supervision of methane emission data quality, and explore the use of satellite remote sensing and other technologies to carry out supervision of abnormal methane emissions. Guarantee funds for the supervision of methane emissions, and continuously improve specialized supervision capacity.

(7) Accelerate the construction of regulatory, standardization, and policy systems.

16. Strengthen the regulatory system. Improve methane emissions control regulations. Promote the revision of relevant regulations and standards on coal mine safety at an appropriate time. Research and introduce regulations and systems related to the reduction of organic waste at the source and the improvement of efficiency in its resource utilization.

17. Establish and improve the technical standardization system. Further improve methane emission standards for coal mine gas and oil and gas methane leakage in due course, and strictly control methane emissions. Formulate technical specifications for methane emissions control in rice, livestock and poultry breeding and waste resource utilization. Formulate and revise technical specifications for methane emissions monitoring, measurement, reporting and verification, improve the protocol for greenhouse gas emissions reduction in methane utilization projects, and update the default emissions factors in a timely manner.

18. Innovate and improve economic incentive policies. Promote the incorporation of projects with methane emissions reduction benefits into the ecological environment-oriented development project pool. Explore and study methane emissions reduction incentive and subsidy policies for ruminant farming and rice planting in major production areas. Improve the voluntary greenhouse gas emissions reduction trading mechanism and support qualified methane utilization and emissions reduction projects to carry out voluntary greenhouse gas emissions reduction trading. Encourage methane emissions control projects to carry out climate investment and financing.

(8) Strengthen global methane governance and cooperation.

19. Actively participate in global methane governance. Adhere to multilateralism, follow the principle of common but differentiated responsibilities, the principle of equity and the principle of respective capabilities, and actively and constructively participate in global methane governance.

20. Carry out global methane exchanges and cooperation. Through platforms such as South-South cooperation on climate change and the "Belt and Road" International Green Development Coalition, jointly promote global methane exchanges and cooperation. Participate in dialogues and cooperation related to standards for the identification of methane low-emission technologies, equipment, and products.

4. Organization and implementation

(1) **Strengthen overall planning and coordination.** The Ministry of Ecology and Environment, together with relevant departments, will set up a coordinated working mechanism to organize the implementation of the Action Plan for Methane Emissions Control, and coordinate the resolution of major problems encountered in its implementation. Industry associations and other social organizations will have a full role to play, and enterprises are urged to consciously fulfill their social responsibilities. [8]

(2) **Strengthen the fulfillment of responsibilities.** Relevant departments in all regions and key industries and enterprises should fully recognize the importance of methane emissions control, carry out the work of methane emissions control in a steady and orderly manner, clarify the division of tasks, and ensure that all key measures are effectively implemented.

(3) **Strengthen publicity and training.** Popularize the knowledge related to the development of methane emissions inventories, and carry out training on the establishment of systems for monitoring, measurement, reporting and verification of methane emissions, as well as the control of pollutants and methane. Guide enterprises, colleges and universities, and scientific research institutions to carry out collaboration, and train a group of technical personnel in energy, agriculture and waste methane emissions control. Strengthen publicity on the climate, economic, environmental and safety benefits of methane emissions control. Publicize lessons and best practices of methane emissions control.

(4) **Improve evaluation and supervision.** The Ministry of Ecology and Environment, together with relevant departments, will strengthen the tracking and analyzing of the implementation of this Action Plan, and regularly monitor the progress of the implementation of the methane emissions control targets.

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[8] This would include the China City Gas Company Methane Emissions Control Initiative and the China Oil and Gas Methane Alliance. The China Oil and Gas Methane Alliance committed to reduce the average methane emission intensity of fossil gas production to less than 0.25% by 2025 and strive to reach the world's leading level by 2025. *See* ChinaNews.com (18 May 2021) *China Oil and Gas Enterprise Methane Emission Control Alliance is established to build an integrated methane control platform throughout the production, transportation and selling processes* [中国油气企业甲烷控排联盟成立 搭建"产运销"一体甲烷管控平台] (hyperlink to original Chinese).