



METHANE
GUIDING
PRINCIPLES

Methane Guiding Principles Signatory

Beijing Gas Group
January, 2024



Company: Beijing Gas Group

Year of Joining Methane Guiding Principles: 2018

Senior Representative:

Principle One:

Continually reduce methane emissions.

- Please state what specific activities or projects your company has undertaken to reduce methane emissions. Please refer to the previous year’s annual MGP reporting where applicable to refer to intended activity. Link to sustainability report where relevant to provide further detail.
- Describe how the reduction was achieved including description of the asset type, technology type, timeframe. What was the end result?
- Provide data to support your description e.g., the actual amount of emissions reduction achieved, or the reduction in methane intensity.

2023 Completed Activity	2024 Intended Activity
<ul style="list-style-type: none"> • In the field of standard research, Beijing Gas has taken the lead in developing a methane emission accounting method applicable to Chinese urban gas supply enterprises. It has played a leading role in formulating the recommended national standard titled "Greenhouse Gas Emission Accounting and Reporting Requirements Part XX: Urban Gas Supply Enterprises," filling the gap in greenhouse gas emission accounting standards for Chinese urban gas enterprises. • In terms of methane monitoring, high-precision onboard laser detection technology is employed, combined with handheld mobile intelligent inspections, to achieve comprehensive monitoring and control of methane emissions from buried pipelines. For on-ground gas facilities, a laser gimbal is installed to enable real-time monitoring of the gas station, promoting the systematization, normalization, standardization, and internationalization of the methane monitoring and measurement system. 	<ul style="list-style-type: none"> • Enhance detection and monitoring efforts. Implementing a grid-based inspection mechanism for the pipeline network facilities within the company's operational scope, continuously increasing inspection frequency and coverage. Improve the accuracy and granularity of detection technology and install real-time monitoring equipment in applicable gas facilities. This ensures timely response and effective handling when conditions require. • Promote the application of emission reduction technologies. In large-scale on-ground gas facilities such as gas stations, regulating-metering station, and CNG/LNG filling stations, advocate the implementation of Leak Detection and Repair (LDAR) measures to reduce methane leakage from component sealing points. Universally promote the use of mechanical sealing equipment and technical services across the gas



- In terms of management approaches, experiences and practices are systematically reviewed, analyzed, and distilled from technical, managerial, standard, and Integrated Energy perspectives. With a goal-oriented approach, the methane emission control practices are optimized and refined from the aspects of controlling methane emissions, operational venting, accidental venting, etc. This process results in the formulation of a checklist summarizing Beijing Gas's experiences in methane emission control.
- In methane emission reduction, mechanical sealing technology is employed to replace manual cutting or line modification, enabling continuous operation without interruption and significantly reducing methane emissions during operations. In some gas stations, the implementation of Leak Detection and Repair (LDAR) measures is explored to minimize methane leakage from equipment components' sealing points.

industry to decrease methane emission intensity during industry-wide operations.

Principle Two:

Advance strong performance across the gas supply chain

Please include answers to the following questions:

1. Did you participate in any methane research or plan to do so?
 2. Did you conduct any outreach on methane management?
- Describe what action you have taken to engage industry players across the value chain to better understand how to achieve robust methane emissions management. Outreach activity could include training sessions, participation in webinars, influencing of NOJV partners, or publication of guidance. Activity could also include commercial incentives or engagement with investors to drive better performance by others.
 - Provide details of any outcomes that resulted from your action.

2023 Completed Activity	2024 Intended Activity
<ul style="list-style-type: none"> • Beijing Gas actively participates in oil and gas industry conferences, sharing technical experiences and management practices in methane emission reduction within urban gas transmission and distribution systems. This involvement allows Beijing Gas to learn from advanced industry practices. • Beijing Gas hosted the "12th China Gas Operations and Safety Seminar – Methane Emission Reduction Boosting Safe Operations in Urban Gas Enterprises Subconference." The event brought together government officials, industry leaders, experts, and elites from both the business and academic sectors. A total of nine experts participated in exchanges and shared insights, aiming to establish consensus within the gas industry. Together, they shoulder the responsibility of ensuring the safe operation of methane in response to climate change and strive to make significant 	<ul style="list-style-type: none"> • Domestically, Beijing Gas will continue to maintain close connections with organizations such as the China Oil and Gas Methane Emission Reduction Alliance. It will organize and participate in industry conferences, training sessions, technical exchanges, and other activities. The aim is to sustain broad communication and collaboration with stakeholders along the entire natural gas value chain. Beijing Gas will engage in cooperative research projects, promote technological innovation in methane emission reduction, and contribute to the dissemination of experiences. Collaborative innovation mechanisms will be established with universities and relevant research institutions, fostering a "production, academia, research, and application" approach, continually enhancing its operational management and technical capabilities. • Internationally, Beijing Gas will continue



contributions towards achieving China's "dual-carbon" goals.

- Participating in the China Oil and Gas Enterprises Methane Emission Control Alliance Technical Exchange Meeting, collectively advancing the sharing and collaboration of methane control technologies and experiences among member enterprises. Beijing Gas shared its methane emission control technologies and management practices, while also learning from excellent methane emission control practices of upstream, midstream, and downstream oil and gas enterprises in the industry.
- Participating in the "Advanced Roundtable Meeting on Methane Emission Control in the Energy Industry", initiated by the Environmental Defense Fund (EDF) and the China Energy Research Association. The meeting involves analyzing challenges in methane emission control in urban gas, sharing advancements in methane emission control technology, discussing critical topics related to methane reduction, and enhancing awareness of methane emission reduction.
- Actively participating in the "2023 Member Conference and Technology-Led High-Quality Development Seminar of the Science and Technology Working Committee of the China Urban Gas Association." During the seminar, Beijing Gas Group shared its experiences and practices in methane emission control.
- Beijing Gas Group actively organizes and conducts energy-saving and low-carbon publicity efforts. It has compiled and distributed the "Energy-Saving, Low-Carbon Propaganda Handbook," emphasizing key management recommendations for reducing and preventing greenhouse gas emissions. This handbook serves as a reference for

to play a bridging role, facilitating international dialogues on methane emission control within the domestic oil and gas industry. It aims to promote advanced management experiences and operational practices on a global scale.



daily production and management activities

- Participating in the drafting of the manuscript "Methane Emissions in the Oil and Gas Industry," led by the Environmental Defense Fund (EDF) in the United States. Responsible for the fourth chapter, "Best Practices for Methane Emission Reduction in the Oil and Gas Industry," specifically the fifth section, "Best Practices for Methane Emission Reduction in Gas Transmission and Distribution." Conducting research on advanced methane reduction technologies domestically and internationally, contributing efforts to methane emission reduction in urban gas.

Principle Three:

Improve accuracy of methane emissions data.

- Describe action taken to improve methane emissions data collection methodologies. This could be application of new technology at an operated site(s), investment and participation in R&D initiatives, development of monitoring/modelling software, or support to research that improves the accuracy of the quantification of methane emissions.
- Where new technology /software has been piloted or adopted, it is helpful to describe how it works, the reasons it was selected, and how it was deployed. Any data that can be shared to demonstrate improvements is useful.
- How these new methods/technologies has been adopted into your accounting process if at all.

2023 Completed Activity	2024 Intended Activity
<ul style="list-style-type: none"> • Pioneering the application of the emission flux method for estimating methane emissions from small-scale, multiple-point sources like gas stations. Utilizing a mobile measurement platform mounted on ground vehicles, measurements were conducted at two gas stations in Beijing. A comprehensive algorithm for inversely estimating methane emissions from small-scale multiple-point sources on the ground was developed. This algorithm was used to estimate methane emissions from gas gate stations, providing data and scientific support for the development of methane reduction plans for these stations. • Comprehensive detection and repair quality management is an effective approach to control methane emissions. To further enhance the level of methane emission control at Beijing Gas, gas stations with demonstrative significance were selected and mini-program for methane emission control was designed and developed. Based on the actual 	<ul style="list-style-type: none"> • In 2024, Beijing Gas will continue its research on methane emission technologies and methods for urban gas. Increase the quantity and diversity of actual measurement samples. Various detection technologies and methods such as mobile surveys, OGI, FID, and HI-FLOW will be cross-validated to continually enhance the accuracy of provided data.



conditions and requirements of methane emission detection and repair at these stations, and leveraging the latest information technology, a WeChat mini-program entrance was installed on mobile devices (including smartphones and tablets). The mini-program and its management backend were designed and developed to achieve quality management in detection and repair.

Principle Four:

Advocate sound policy and regulations on methane emissions

Advocacy consists of active participation in legal consultation processes, external policy statements, and direct engagement with government.

- Consider providing details on the region or regulation involved, how you undertook your advocacy, others involved, and the outcome.

2023 Completed Activity	2024 Intended Activity
<ul style="list-style-type: none"> • Utilizing the mechanism called "Advanced Roundtable Meeting on Methane Emission Control in the Energy Industry", established by the China Energy Research Association, to share the challenges and solutions faced by urban gas methane emission control in China. Beijing gas strives to formulate policy recommendations supporting the development and implementation of relevant policies, drive methane reduction in the energy sector, reduce greenhouse gas emissions, and contribute to achieving the "dual-carbon" goals and global sustainable development. 	<ul style="list-style-type: none"> • Policy Advocacy: Advocate for the initiation of national-level research projects, fostering a sustained communication mechanism with policy makers through project studies. This aims to drive the formulation of various methane reduction support policies. • Standard Research: Continue to enhance industry exchanges, take a leading role in promoting the establishment of methane quantification detection standards. This lays the foundation for the construction of a monitoring, accounting, and reporting system for methane emissions in the gas industry.

Principle Five: Increase transparency

Please include answers to the following question:

1. Are you participating in OGMP 2.0, or do you intend to do so? If you are participating in OGMP 2.0 you may provide a link to the website.
 - Describe what activity you have carried out e.g., providing information in relevant external reports on methane emissions data, methodologies, and progress and challenges in methane emissions management.
 - If you have contributed towards the standardization of comparable external methane reporting describe the activity, you have taken.

2023 Completed Activity	2024 Intended Activity
<ul style="list-style-type: none"> • Beijing Gas Group diligently interprets the requirements of the OGMP2.0 report, especially in terms of identifying emission sources, categorizing emission types, and employing accounting methods at different levels. This provides a reference for Beijing Gas Group in compiling the "Greenhouse Gas Emission Accounting and Reporting Requirements Part XX: Urban Gas Supply Enterprises." 	<ul style="list-style-type: none"> • None

Methane Emissions:

<p>Do you report absolute methane emissions within your sustainability report? <i>If so, provide link.</i></p>	<p>Beijing Gas actively participates in the ESG (Environmental, Social, and Governance) carbon disclosure work of its parent company, Beijing Enterprises Group. The ESG report elaborates on relevant information concerning methane emission control and management efforts by Beijing Gas. However, due to the lack of quantifiable detection standards and limited samples in the detection data, it is currently insufficient to accurately reflect the actual emissions of the enterprise. Therefore, this information is not available at this stage.</p>
<p>Do you report a methane intensity within your sustainability report? <i>If so, provide link.</i></p>	<p>Information is currently unavailable for the same reasons mentioned above.</p>
<p>What is your organization's total absolute methane emissions? Provide a figure in tons. Provide latest data publicly available.</p>	<p>Information is currently unavailable for the same reasons mentioned above.</p>
<p>State your methodology.</p>	<p>Information is currently unavailable for the same reasons mentioned above.</p>
<p>State your reporting boundary.</p>	<p>Information is currently unavailable for the same reasons mentioned above.</p>
<p>What are your organization's methane intensity? Provide latest data publicly available.</p>	<p>Information is currently unavailable for the same reasons mentioned above.</p>
<p>State your methodology.</p>	<p>Information is currently unavailable for the same reasons mentioned above.</p>
<p>State your reporting boundary.</p>	<p>Information is currently unavailable for the same reasons mentioned above.</p>
<p>Do you have a methane emission target? If yes, please state what it is, including the boundaries and methodology. If no, are you developing such a target? Please state your intended timeline.</p>	<p>Strive to control the methane emission intensity of operational facilities to below 0.12% by 2025, with the goal of reducing the emission intensity to near-zero by 2030.</p>

