



METHANE
GUIDING
PRINCIPLES

Methane Guiding Principles Signatory Reporting

ENN Energy Holdings
2025



Company: ENN Energy Holdings

Year of Joining Methane Guiding Principles: March, 2021

Senior Representative: Mr Pang Xulin, The Head of technological innovation

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.

2024 Completed Activity

- ENN Energy continuously optimize methane emission control measures and actively explore innovative technologies to further enhance the energy efficiency of natural gas and drive the transformation process towards low-carbon energy.
- In 2024, we participated in the exchange activities organized by industry associations such as the Standards Committee of the China City Gas Association, the Intelligent Gas Network of the China City Gas Association, the China Association for Science and Technology, and the China Civil Engineering Society, exploring cutting-edge technologies for methane emission control.
- We actively participate in standard formulation. In 2024, we were involved in the compilation and review of the national standards Requirements for Greenhouse Gas Emission Accounting and Reporting, Part XX: Urban Gas Supply Enterprises and Technical Standard for the Operation, Maintenance and Emergency Repair of Urban Gas Facilities. We also took the lead in compiling the group standard Cloud Platform Scanning Laser Combustible Gas Detection System and participated in compiling the group standard Technical Requirements for Unattended Stations of Urban Gas.

2025 Intended Activity

- **Comprehensive Deployment of Intelligent Monitoring System**

Based on the existing pipeline network, we will further expand the deployment scope of Internet of Things (IoT) devices such as intelligent cathodic protection and pressure monitoring, achieving real - time and all - round monitoring of the pipeline network operation status.

- **Expansion of Intelligent Inspection**

We will expand the pilot scope of the intelligent inspection program to cover most of the company's core business areas. Through pilot applications in different geographical environments and business scenarios, we will further verify and improve the feasibility and effectiveness of the intelligent inspection program.

- **Upgrade of Inspection Equipment**

We will establish a regular maintenance and renewal mechanism for inspection equipment to ensure that the equipment is always in good operating condition.

- **Maintenance of Pipeline Network Facilities**

We will formulate a detailed maintenance plan for pipeline network facilities, and conduct regular maintenance and upgrade of key facilities such as gate stations, storage and distribution stations, and old pipeline networks.

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.

2024 Completed Activity

2025 Intended Activity

Principle Three:

Improve accuracy of methane emissions data.

Please include answers to the following questions:

- 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.

2024 Completed Activity

- We continue to deploy and upgrade the methane laser cloud platform detection at gate stations and storage and distribution stations to improve the detection accuracy and coverage. Moreover, we incorporate methane management into our daily operations. Through multiple measures such as deploying laser cloud platforms at all plants and stations, upgrading and renovating old pipeline networks, and strengthening the safety inspection of indoor gas facilities, we implement the methane emission control work. Meanwhile, at the pipeline end, we cooperate with equipment manufacturers to develop intelligent pipeline stake equipment, enabling intelligent identification and real-time danger indication of pipeline leaks and third-party construction. This equipment has been successfully applied in some member enterprises, effectively reducing the risk of pipeline leaks. At the same time,

we actively recycle the boil-off gas (BOG) in the LNG scenarios. The annual recycling volume reaches 45.76 million cubic meters.

- In 2024, ENN Energy further strengthened the safety management of pipeline network operations and strictly implemented the standards for Internet of Things (IoT) devices such as intelligent cathodic protection and pressure monitoring. Relying on IoT and digital and intelligent technologies, we upgraded pipeline integrity products and optimized PDCA intelligent products. With pipeline risk assessment as the core, we enhanced the capabilities of intelligent monitoring and intelligent identification to ensure the safe operation of the pipeline network.
- In addition, ENN Energy actively explored and piloted intelligent pipeline network inspection solutions. Based on user needs and business pain points, through technical means such as AI, edge computing, and large models, and in combination with different carriers such as drones, pipeline inspection vehicles, and buses, a package of intelligent inspection measures was formed. In 2024, the company carried out pilot projects of intelligent inspection solutions in Langfang, Shijiazhuang, Bozhou and other places, and gradually transformed the pilot experience into digital and intelligent products and business models.
- In terms of inspection equipment, the company actively deployed advanced equipment such as ppb-level laser inspection vehicles, ppm-level laser inspection vehicles, and ppm-level electric inspection vehicles to improve the inspection efficiency, achieve precise monitoring of minor leaks, effectively increase the leak identification rate, and reduce pipeline risks and potential hazards.

Number of pressure monitoring devices: 88,358

Number of combustible gas detection devices for valve wells: 29097

Number of intelligent cathodic protection monitoring devices for steel pipeline: 3,799

2025 Intended Activity

- To better ensure the management of liquefied natural gas (LNG) during the processes of transportation, storage, and conversion, ENN Energy will continuously improve the "Safety Guardian System for Unattended Plants and Stations". In coordination with digital and intelligent products such as laser pan-tilt systems, infrared thermal imaging pan-tilt systems, and electronic fences, it realizes round-the-clock, 360-degree surveillance without blind spots. This enables the prompt detection of minor leaks, and timely handling and closed-loop disposal are carried out accordingly.

Principle Four:

Advocate sound policy and regulations on methane emissions.

Please include answers to the following questions:

- 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.

2024 Completed Activity

- In 2024, ENN Energy participated in all the meetings organized by the China Oil and Gas Methane Alliance and took part in the discussions on relevant topics such as the latest progress of the Oil and Gas Methane Partnership (OGMP 2.0), BP's methane monitoring and emission reduction practices, the research and application of methane measurement and emission reduction technologies for oil and gas pipelines, and the progress of methane monitoring technologies. We also provided valuable support for the publicity of the Oil and Gas Methane Alliance Booth in COP29.
- In terms of standard formulation, ENN Energy was involved in the revision of the national standards for the safety technology of urban gas facilities and the preparation of the enterprise standard Technical Construction and Operation Standard for Intelligent Plants and Stations, providing clear specifications for the construction of urban gas facilities and intelligent plants and stations.

2025 Intended Activity

- ENN Energy will continue to actively participate in the meetings and networking events organized by the China Oil and Gas Methane Alliance. In addition, ENN Energy will cooperate with the government in the formulation of national and industry standards, contributing valuable practical measures.

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.

2024 Completed Activity

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2025 Intended Activity

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Methane Emissions

**Do you report absolute methane emissions within your sustainability report?
If so, provide link.**

Type answer here...

**Do you report a methane intensity within your sustainability report?
If so, provide link.**

Type answer here...

**What is your organization's total absolute methane emissions?
Provide a figure in tons.
Provide latest data publicly available...**

Type answer here...

State your methodology.

Type answer here...

State your reporting boundary.

Type answer here...

**What are your organization's methane intensity?
Provide latest data publicly available.**

Type answer here...



State your methodology.

Type answer here...

State your reporting boundary.

Type answer here...

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.

Type answer here...

