



# **Biodiversity Conservation Report**

ENN Energy Holdings Limited

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## **About this Report**

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This report covers ENN Energy Holdings Limited (hereinafter referred to as "ENN Energy") and its affiliates.

### Terminology

ENN Energy, the Company or we — ENN Energy Holdings Limited (2688.HK).		
ENN Liu'an —	- Liu'an Xinao Gas Co., Ltd., an affiliate of ENN Energy.	
Quanzhou Gas ————	- Quanzhou Gas Co., Ltd., an affiliate of ENN Energy.	
ENN Guangzhou Baiyun ———	- Guangzhou Baiyun Xinao Gas Development Co., Ltd., an affiliate of ENN Energy.	
ENN Chuzhou —	- Chuzhou Xinao Gas Co., Ltd., an affiliate of ENN Energy.	
ENN Yueyang	- Yueyang Xinao Gas Co., Ltd., an affiliate of ENN Energy.	
ENN Kaifeng —	- Kaifeng Xinao Gas Co., Ltd., an affiliate of ENN Energy.	

### Reference Standards

This report is prepared and reported with reference to Taskforce on Nature-Related Financial Disclosures (TNFD).

### Languages

The *Biodiversity Conservation Report (2022)* is available in both Chinese and English (in case of discrepancies in the content, the Chinese version shall prevail).

### Extended Reading

For more content and information related to ecological and environmental protection, please visit the website of ENN Energy at www.ennenergy.com.

For information related to ecological and environmental protection, please refer to:

*ENN Energy Holdings Limited Environmental, Social and Governance Report 2021*, and *Decarbonisation Action 2030 - ENN Energy's Net-zero Roadmap* on the website of ENN Energy, www.ennenergy.com.

## Introduction

In recent years, with the ravages of the COVID-19 epidemic, the disappearance of rare species, and the growing biodiversity crisis, people are reminded of and warned about the importance of maintaining a close relationship with the nature. The current crisis is also an opportunity to turn the tide. The United Nations has established the Convention on Biological Diversity and formulated the Sustainable Development Goals (SDG) related to biodiversity, encouraging governments and enterprises around the world and aligning with them to work concertedly for biodiversity conservation.

In China, biodiversity conservation has also attracted great attention from all walks of society. In October 2021, President Xi Jinping delivered a speech in the 15th session of the Conference of the Parties to the *Convention on Biological Diversity* (COP15), promising that China would vigorously develop the cause of biodiversity conservation, urging industries to strengthen biodiversity conservation from multiple aspects such as energy structure adjustment. The white paper *Biodiversity Conservation in China* released by the State Council also pointed out that China would continue to strengthen the biodiversity conservation as a national strategy and would improve the long-term conservation mechanisms led by the government and facilitated by enterprises with public participation.

ENN Energy is committed to sustainable development routes including biodiversity conservation. It clarifies mediumand long-term decarbonisation action goals, and incorporates biodiversity conservation concepts and measures into its corporate strategy. In 2022, the Company refers to the guidelines of the Taskforce on Nature-Related Financial Disclosures (TNFD) and publishes its first *Biodiversity Conservation Report*, which focused on natural gas distribution and integrated energy sales and services, disclosing the Company's practical work and value created in biodiversity conservation.



# **About ENN Energy**

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ENN Energy has been in the city pipeline gas business since 1992 and is one of the largest clean energy distributors in China. Its principal business is the investment, construction, operation, and management of pan-energy projects, gas pipeline infrastructure, and gas filling stations in China. It also sells and distributes a wide range of energy products, pipeline gas, and LNG and provides other low-carbon energy solutions. Based on the customers' demands, it focuses on the development of the whole value chain of energy, using clean energy technologies and digital intelligence management to transform towards low-carbon businesses while reducing carbon emissions for its customers and society. In this way, it contributes to China's achievement of the carbon peaking and carbon neutrality goals and creates a low-carbon future together. ENN Energy is currently a constituent of the Hang Seng Index, the Hang Seng China Enterprises Index, the Hang Seng Composite Large Cap Index, the Hang Seng ESG 50 Index, the Hang Seng Sustainable Enterprises Benchmark Index, and the MSCI China Large Cap Index.



# **Biodiversity Conservation Strategy**



## **Our Policies**

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## **Metrics and targets**

"NO-net Loss (NNL)" \* of biodiversity is an important task in the daily operation of ENN Energy and is also an important indicator that we use to assess the biodiversity conservation results. We regularly collect the achievements of our member companies, such as how many environmental assessments they have conducted and what ecological conservation initiatives they have taken. Each year we will evaluate, manage, and disclose key biodiversity management indicators including the frequency and area of ecological restoration, soil restoration, and river treatment, as well as the frequency of wildlife protection, and the number of animals protected. By bringing "Net Positive Impact (NPI)"\* to the environment, we further solidify our long-term mission of biodiversity conservation initiatives and practices.



ENN Energy initiates biodiversity assessment and conservation in all scenarios of its business development and implements projects to protect the ecological environment and biodiversity around its operation sites. We encourage our member companies to promote, procure, and use sustainable natural resources that have a low impact on the ecological environment and are beneficial to biodiversity conservation to minimise the impact on the ecological environment around our operation sites. On this basis, we create a systematic green industry system through biodiversity restoration and sustainable use of natural resources so that our business development can coexist with the natural environment, and we can join our hands to

### {٥} Governance

The Company has released its Biodiversity Conservation Policy. It reviews and discloses its performance on biodiversity conservation annually, which is considered a key part of its ESG management. We govern our biodiversity conservation from three aspects, that is, sustainable management of natural resources and raw material use, restoration of disturbed land and habitats, and respect for indigenous peoples and reduction of impacts on communities. The conservation policy incorporates resource use and waste management in all scenarios of the business, ecological conservation initiatives by suppliers, site selection and subsequent ecological restoration of projects, as well as communication with local indigenous people.



Based on the environmental impact caused by the production and operation process of ENN Energy and the business development needs to implement biodiversity management strategies, we should: first of all, strengthen environmental management in the design and procurement, construction, and operation stages to reduce the degree of ecological impact through resource consumption management, pollutant management, soil and water conservation, ecological restoration, and other dimensions; secondly, organise and encourage member companies to participate in ecological conservation actions and actively cooperate with ecological conservation and governance projects in national areas to bring positive benefits to the ecology; thirdly, explore and develop the application of renewable energy, continuously increase the proportion of renewable energy in the energy consumption structure, and assist our customers and the society in biodiversity conservation while reducing our ecological impact.

# Risk management:

We strictly require our member companies to implement environmental impact assessment and biodiversity due diligence following the requirements of national policies to fully identify potential biodiversity risks in each project. On this basis, we request them to formulate and implement corresponding comprehensive management programs to fully identify and properly manage ecological risks. At the same time, we hire a third-party professional institution every year to analyze potential ecological risks and impacts based on our corporate business and formulate risk analysis sheets.

\*No-net Loss (NNL): after being compensated by various measures, the structure and functionality of the ecosystem should be the same as before the project construction, without any loss to the local ecological value.

\*Net Positive Impact (NPI): the impacts of human activities on local species and the ecological environment are offset through project restoration and other actions, where the impact of the action taken offsets or outweighs that of the project on biodiversity.

write a new chapter of the clean and green energy development of ENN Energy.



# **Biodiversity in Surrounding Areas**



With our operations spreading throughout China, ENN Energy is inextricably bonded to the diverse ecosystems in China. The 2020 Report on the State of the Ecology and Environment in China shows that China has a variety of terrestrial ecosystems including forests, bamboo forests, brushwood, meadows, grasslands, wetlands, coasts, islands, lakes, etc., and is home to abundant species. Its forest coverage rate and comprehensive vegetation coverage of grassland are 23.04% and 56.1%, respectively. The regions where ENN Energy's main operations are located, such as Hebei, Henan, Zhejiang, Shandong, Guangdong, Jiangsu, Fujian, and Inner Mongolia, all have different kinds of ecosystems and biological resources. For effective biodiversity conservation, we have conducted in-depth studies and surveys on the ecosystems and biodiversity status in our main operation sites, so that we can tailor our biodiversity conservation initiatives "to local conditions".

### Hebei

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### **City-gas Integrated energy**

Hebei Province, subjected to a temperate - warm temperate climate, has many types of terrain, such as plateaus, mountains, and plains. Crisscrossed by rivers and with a long coastline, the province has many types of ecosystems such as forests, grasslands, and brushwood. Fuping County of Baoding City and Chongli District of Zhangjiakou City are listed as national ecological civilization construction areas, and Hebei has other key areas such as the "two districts" (Bashang Plateau District and Binhai District) and "two mountains" (Taihang Mountains, Yanshan Mountains, and Hengshui Lake).

### Henan

### **City-gas Integrated energy**

Located in the northern subtropical and warm temperate climate zone. Henan Province has obvious transitional characteristics of the climate. It is rich in plants and animals as well as wetland resources, with more than 300 natural protected areas and nearly 200 species of protected wild animals at all levels. It is also an important water conservation area, soil and water conservation area, and flood regulation area in central China. Luoning County of Luoyang City and Yongcheng City of Shangqiu City are listed as national ecological civilization construction areas.

### Fujian

### **City-gas Integrated energy**

Located on the southeast coast of mainland China, Fujian Province has complex topography, diverse types of landforms, large offshore and coastal intertidal zones, long coastlines, and high species richness. Its Sanming City, Longyan City, and other cities are national ecological civilization construction areas, with another dozen of priority areas of land and marine biodiversity conservation, such as Wuyishan District, Minjiang River Basin, and Coral Distribution Area.

### Guangdong

### **City-gas Integrated energy**

Located in the tropics and subtropics, Guangdong Province has rich forest and grassland terrestrial ecosystems, as well as a large area of marine ecosystems. The cities of Dongguan, Foshan, and Shanwei are listed as national ecological civilization construction pilot areas, and the province also has biodiversity conservation priority areas such as Nanling Mountain, Luofu Mountain, and Lianhua Mountain.





Inner Mongolia has the largest natural forest area in China, mainly including zonal ecosystems such as forest, brushwood, grassland, and desert, and azonal ecosystems such as wetland and sand, among which grassland is the most dominant type of natural ecosystem. Darhan Muminggan United Banner and Hinggan League are national ecological civilization construction areas, and Inner Mongolia is also home to five biodiversity conservation priority areas, including Hulunbuir and Xilin Gol Prairie.





Straddling the warm temperate zone, northern subtropics, and central subtropics, Jiangsu Province has a forest ecosystem that is transitional and has both northern and southern characteristics. The province is dominated by secondary forests and artificial forests, with fewer natural forests. Its wetland resources are one of the richest in China, among which the offshore and coastal wetlands are important channels for migrating birds. Wujiang District of Suzhou City and Yancheng City are ranked as national ecological civilization construction areas.



Zhejiang Province has excellent natural conditions of light, heat, and water. It mainly includes terrestrial ecosystems such as forests, wetlands, and grasslands, as well as marine ecosystems such as coastlines and islands. Zhoushan and Ningbo are listed as national ecological civilization construction areas, and the province also has biodiversity conservation priority areas such as Qiandao Lake watershed and Zhoushan fishing grounds.



### Inner Mongolia

### **Coal business City-gas Integrated energy**

### Shandong

### **City-gas Integrated energy**

Shandong Province is located in the lower reaches of the Yellow River, and on the verge of the Bohai Sea and the Yellow Sea. It has terrestrial ecosystems such as forests, brushwood, meadows, and wetlands, as well as marine ecosystems such as coastal zones and islands within its jurisdiction. The West Coast New Area of Qingdao and Jiaozhou City are listed as national ecological civilization construction areas, and Shandong Province also has biodiversity conservation priority areas such as Liugongdao Island and its surrounding

### Jiangsu

### **City-gas Integrated energy**

### Zhejiang

### LNG terminals City-gas Integrated energy

# **Conservation Initiatives in Business Scenarios**



### Natural gas distribution Land-use change





### **Integrated energy sales** and services

### Land-use change

- New projects are required to conduct due diligence for assessments related to biodiversity, through which more than 90% of new projects should apply;
- Try to select areas without rare plants and animals as the site for the construction of relevant facilities, so as to mitigate the potential impact on the surrounding ecological environment;
- Organise and encourage member companies to participate in local projects including river regulation, soil restoration, greening renovation of wasteland and construction sites, and other projects to minimise the impact on the surrounding environment due to land-use changes caused by the construction of pan-energy production facilities.

### **Climate change**

- Promote the application of clean energy and continuously increase the proportion of renewable energies such as solar energy, industry residual heat, and biomass in the energy structure:
- Improve the energy efficiency of energy production facilities through continuous technological improvements, optimization of operational strategies, and core technologies of intelligent energy management platforms;
- Select operation areas to establish pilot projects, form a demonstration application of carbon capture and sequestration projects in 2025, and then gradually deploy carbon capture and sequestration technology in the panenergy business.



### Construction and installation

Pollution

he noise volume to meet the requ

Avoid work at night: the construction uni

time, noise control measures must be

• Wastewater management: swage reatment facilities should be set up at the

should be entrusted to a qualified unit fo

vastewater quality testing and sewage

screens, dust felts, etc., to prevent dust

the construction is not signed or the

Waste management: improve the management system of hazardous waste,

om reaching residents:

ollect and treat the waste

of national standards

strictly taken

### Land-use change

regulations during the construction preparation stage, and set up evaluation nstruction area should be vanda

- Regularly monitor the impact caused to land and soil during the construction stage he ecological damage if the surrounding and has been impacte
- Conduct supplier assessment and encourage themto appropriately maintair prative environmental access list

### Climate change

project starts to investigate vegetatio types, canopy density, grassland cov esults, reducing greenhouse gas e ation to achieve "ne

 Actively organise and participate in local tree planting activities to increase the number of trees planted and their

ENN Energy attaches great importance to the environmental impact on the surrounding ecosystems in daily operations and is committed to continuously improving its biodiversity conservation policies. It adheres to the goal of improving environmental management and ecological environmental protection, and strives to build a modernised world in which people and nature live in harmony. We are deeply aware of the necessity and importance of biodiversity, and therefore, according to the classification of biodiversity influential fatcors in Nature's Assets -Why Biodiversity is Good for Business, we sort out the ecological impacts caused by our business operations from five dimensions, that is, land-use change, climate change, pollution, overdevelopment, and species invasion, and put together biodiversity conservation measures taken to alleviate these impacts.

\*The main business of ENN Energy does not involve matters related to species invasions, and it neither introduces alien species within its operation sites nor spread species to other areas through product sales.

### Low-carbon trade transportation **Climate change**

- Promote and use intelligent systems to optimise routes of trade transport vehicles, thereby improving vehicle scheduling and operational efficiency and reducing greenhouse gas emissions;
- Replace oil fleet with gas fleet and phase out trade transport fleet that use petroleum by 2025;
- Install residual gas recovery equipment in LNG filling stations and equip vehicles with IoT equipment to monitor the pressure of LNG transport fleet in real-time, thus recovering LNG effectively.





### **Green office**

### **Climate change**

- Continuously increase the proportion of renewable energy used in daily operations by using building photovoltaics, heat pump technology application, renewable energy vehicles, etc.;
- Improve energy efficiency through digital intelligence and comprehensively reduce the intensity of fossil energy use in daily operation



### Pollutant

• Recyle and handle office waste appropriately, and contact municipalities and suppliers with professional qualifications to dispose the waste in accordance with national regulations.



# **Ecological Co-existence Cases**

## **Biodiversity Conservation of Natural Gas Distribution Business**

### Non-excavation Process to Minimise the Impact on Land

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Case

When ENN Guangzhou Baiyun was laying the medium pressure natural gas pipeline in Xiongfeng Village, Guangzhou, it figured out that the pipeline had to cross tributaries of rivers, woodlands, bird habitats, and other areas with well-protected ecological environments. After certain research and demonstration, ENN Guangzhou Baiyun adopted a non-excavation pipeline construction process and completed the projects of this pipeline section within 5 days, which not only shortened the construction period but also minimised the impact on the surrounding ecology, environment, and organisms.



### **Oingliu River Treatment and Construction Protection**

ENN Chuzhou actively fulfilled its responsibility to protect the local water and soil when carrying out the landscape treatment of Qingliu River and the pipeline crossing project in Suchu Industrial Park. In an attempt to minimise the negative ecological impact caused by the construction, it undertook multiple protection methods such as setting up construction fences and dust screens, setting up solid waste centralised management stations, preventing noise pollution and selecting noise reduction equipment, managing exhaust gas emission equipment as well as cleaning roads and managing dust pollution.



# **Biodiversity Conservation of Integrated Energy Sales and Services**

### "Four-Network Integration" to Innovate Renewable Energy Supply

ENN Energy operates a "Four-Network Integration" project in the National Economic and Technical Development Zone in Xuancheng, Anhui Province, which is an industry-leading project that integrates renewable energy into its integrated energy sales and service project. With the incremental distribution network as an entry point, the project integrates renewable energy such as photovoltaics, wind power, waste heat from power plants, and biomass, and incorporates a multi-energy net formed by energy storage technologies, which enables them to provide customers with a safe and stable energy supply while minimising greenhouse gas emissions and the impact on the ecology. After the project reaches its designed capacity, it can reduce greenhouse gas emissions by about 300,000 tons per year.



### **Promote the Development of Distributed Photovoltaics**

When providing energy services to a customer in Yangkou, Shouguang, ENN Energy made full use of the roof area of 11 factories in the local park and established 2 sub-distributed photovoltaic power plants. With an integrated automation monitoring system capable of remote metering, remote signaling, remote control, remote regulation, remote execution of scheduling, accident and fault alarm, as well as the "regular inspection + intelligent energy platform monitoring" by operation and maintenance personnel, the project's power generation efficiency is optimised to match the customer's needs, while reducing greenhouse gas emissions by about 14,000 tons per year.





# Biodiversity Conservation of Construction and Installation Business

# Maintenance of Green Plants in the Construction of Natural Gas Pipelines in Liu'an

As part of the gas construction project in Sungang Township of Liu'an City, the S366 medium pressure natural gas pipeline project of ENN Liu'an had to cross the provincial highway and about 900 square meters of vegetation at the provincial highway ramp needed to be destroyed during the construction. In order to reduce the impact of the gas pipeline laying project on the local ecology, ENN Liu'an reached a cooperation agreement with a local green conservation unit to plant trees, and restore and maintain the construction area according to the landscaping and planting standards after the construction was finished.



Ecological Restoration of Gas Pressure Regulating Station and High-Pressure Pipeline Construction Section in Quanzhou

The high-pressure natural gas pipeline project from Xiameimen Station in Nan'an City to Taishang Gas Pressure Regulating Station, which was the responsibility of Quanzhou Gas, ran through complex environments such as ecological woodlands, railroads, forest parks, and mining areas. Therefore, as the 3-kilometer-long pipeline was laid, some of the local vegetation would be damaged. During the construction process, Quanzhou Gas restored and replanted the vegetation alongside the pipeline by advancing in sections.

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# Biodiversity Conservation of Low-carbon Transportation Business

### Intelligent Scheduling Platform to Optimise low-carbon Trade Capacity

ENN Energy has integrated multiple systems such as the Great Gas Website, Yuntu Cloud, and Customer Big Data System to create an intelligent scheduling platform tailored for the energy trading business. As the Company continues to dig deep into and innovate the Internet and IoT technologies, the intelligent scheduling platform can accurately perform functions such as demand forecasting, price estimation, and capacity planning, reducing the main source of greenhouse gas emissions caused by empty vehicles in energy trade transportation, thus improving the utilization rate of transport capacity resources and reducing the unit energy consumption of transport vehicles.



# **Biodiversity Conservation of Green Offices**

### Office Building Incorporating Renewable Energy Applications

In 2021, ENN Energy completed a green renovation project for its headquarters building. By installing distributed photovoltaic power plants on the roof, upgrading and maintaining related components of the ground source heat pumps, optimising the energy efficiency of the water heater and lighting system, and installing electrical automation and intelligent energy systems, ENN Energy successfully transformed its headquarters building into a low carbon building, reducing electricity consumption by 36%, and saving up to 283 MWh of electricity every year.



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## **Biodiversity Conservation for Public Interests**

### East Dongting Lake Wetland Conservation Activities

As the East Dongting Lake Nature Reserve becomes popular, the environmental changes in the reserve caused by the gathering of people have brought pressure on the local migratory birds. In particular, many bird enthusiasts approached birds closely for better observation, which affected the habitat of the birds. In this situation, ENN Yueyang actively responded to the call of the local Bureau of Natural Resources and organised its staff to participate in the swan guarding action, patrolling the scenic area to stop tourists from harassing the swans, promoting the knowledge and laws of migratory bird protection, and guiding people to participate in migratory bird and wetland protection.



Kaifeng Urban Greening and Arbor Day Activities

ENN Kaifeng has been a pioneer in ecological conservation among ENN Energy member companies and has been involved in local tree planting activities for years. On the 44th National Arbor Day in 2022, ENN Kaifeng organised a number of corporate volunteers to participate in tree planting projects in several road sections of Kaifeng City, dressing the originally brown land in green under the spring sun.





2022 is an important year for the development of biodiversity conservation. At the call of the United Nations, more and more countries, enterprises, and individuals participate in biodiversity conservation. Biodiversity conservation is climate change, public health, food and water security, as well as sustainable living. In the meantime, this is also our original aspiration to propel the development of biodiversity conservation in the energy sector.

ENN Energy released their Decarbonisation Action Plan 2030 in 2021, where it integrated sustainability into its corporate strategy and made a commitment to achieve net-zero emission by 2050. Now we have decided to go a step further by focusing not only on making continuous efforts to deal with climate changes but also on ecological and biodiversity conservation in general. The Company makes further response to the call of the country and society to give full play to its clean energy properties to protect diverse ecologies and create a long-lasting

Looking ahead, we will use the publication of this Biodiversity Conservation Report as a vital point to avoid, reduce, restore, and offset the negative impacts on biodiversity caused by the Company's operations and achieve a "Net Positive Impact (NPI)" on biodiversity and ecosystems. In addition, the Company will continue to work with the government, industry associations, suppliers, and customers to influence the social and public awareness of biodiversity conservation and encourage them to take action, thereby building a vibrant community of life on Earth.

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