

2021

Environmental, Social and Governance Report

VNET Group, Inc.
NASDAQ:VNET



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About the Cover Design

We make unremitting efforts to reduce the impact of human activity on the natural environment. Guozigou Bridge is a grand landscape blending technology with natural scenery and a perfect embodiment of humanity's pursuit of harmonious co-existence of nature and infrastructure.



Message from CEO

In 2021, VNET celebrated an important milestone: our 25th anniversary of foundation and 10th anniversary of listing. The creation and development of a company are inseparable from the opportunities endowed by our time. Amid profound changes unseen in a century, we have experienced both unprecedented challenges and opportunities. On the one hand, the COVID-19 outbreak, worsening climate change and sluggish economic recovery have collectively put our world in one of the most difficult situations in decades. On the other hand, digital advancement and adaptation accelerated by these challenges have paved the way to new infrastructure and a more digitalized future closer to us than ever. We are seeing technologies such as cloud services, 5G, and artificial intelligence (AI) driving the development of industrial clusters, and the physical-digital integration generating huge demand for data storage and computing capacity. Having thrived for more than two decades, VNET is well seasoned in weathering both opportunities and challenges posed to us by the world around us. This time more specifically, we see the possibilities of reshaping the business philosophy for our company and the industry.

We believe in long-term commitments and responsibilities for our industry, environment, and society, as they are the foundation of our ongoing success in a highly competitive, ever-changing market. To this end, we always adhere to the national strategy, contribute to the economic and social development, and proactively improve our ESG management and performances:

Towards zero carbon: VNET has developed the "4C" strategy for our 2030 carbon neutrality commitment and continued to make progress toward this target by the following initiatives: explore and expand opportunities for new energy applications and increase their utilization in total energy consumption; commit to building green data centers and promoting green operations throughout business phases including planning and design, construction, and operation management; extend full support to global climate actions, gradually reduced the impact of business operations on the environment, and contributing to the battle against climate change.

Digital empowerment: Over the past 25 years, VNET has made unremitting efforts to underpin core foundation of digital infrastructure. Based on the "wholesale + new retail" dual-core strategy and the SPEAR plan, we have accelerated the construction of the next-generation intelligent information infrastructure. Relying on new features such as new-generation data center services, the Blue Cloud Digital Asset Management Platform, Cloud Native and cloud-network integration, we continue to play a key role in the Nation's "Digital China" blueprint, and contribute to the new-generation digital economy across the globe.

Mutual growth: Internally we give top priority to enriching talent pool and enhancing talent development, and have done so by actively creating a diverse and inclusive workplace that respects employees' rights and interests, while enabling their development. Externally we collaborate with our partners to create a low-carbon and energy-efficient supply chain, achieve green development, and promote industry innovation and change. Additionally, we honor our social responsibility with concrete actions by proposing the joint action series of "Digital Rural Revitalization – Reshaping Top 100 Brands" and establishing a talent training alliance featuring "Intelligent Operation and Maintenance", contributing to cultivating outstanding talents for our industry.

Looking back on 2021, we actively expanded our "circle of friends" for sustainability. We joined the UN Global Compact, voiced support for TCFD, and created VNET's own sustainability management system "SHIELD" (Social, Human, Innovation, Environment, Leadership and Development) to measure and manage our progress in relevant aspects.

As a domestic leader and a global key player, VNET seeks to contribute to a greener, more prosperous and harmonious future with our partner. We strive to do so by leveraging our industrial resources, technological capacity, and operational know-how as we believe in a sustainable digital future for the world economy.

VNET Group, Inc.
CEO Samuel Shen

About VNET

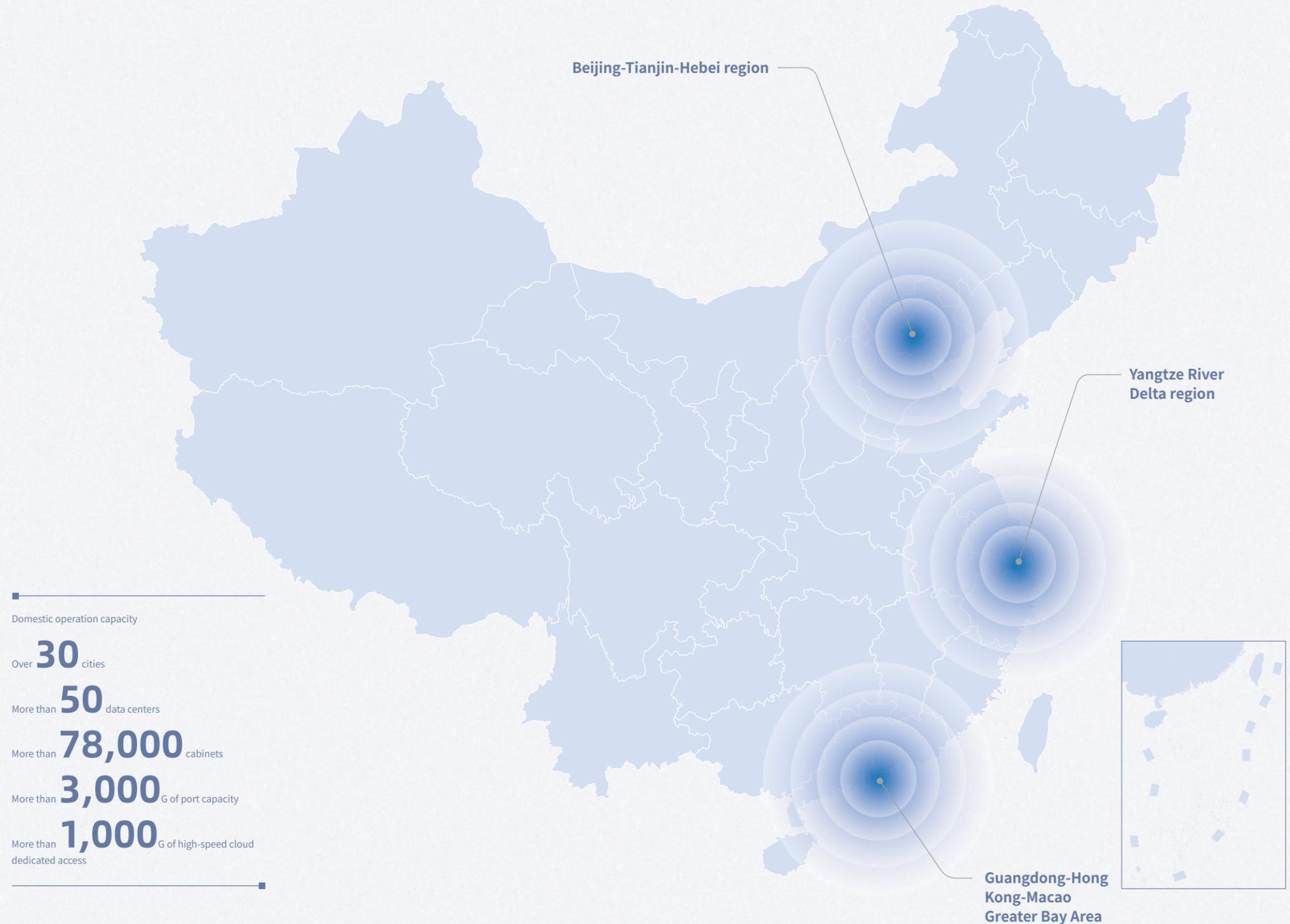
Group Profile

Founded in 1996, VNET Group, Inc. (hereinafter referred to as "VNET", the "Group" or "we") is one of the most influential cyberinfrastructure service providers in the world. We are one of leading third-party carrier-neutral data center service providers and the only leading Internet Data Center (IDC) provider in China powered by the dual-core strategy combined hyper-scale green IDC wholesale solutions with next-generation IDC retail solutions.

VNET is committed to providing industry-leading tailored one-stop data center solutions for ultra-large clients and building an infrastructure operation platform with core wholesale advantage, hyper-scale operation capacity and high value added. With cloud native and hybrid cloud solutions at the core, we focus on creating comprehensive IT solutions covering value-added cabinets, network services, bare metal services, hybrid cloud services, and operation and maintenance services. We aim to become a partner of industrial users in their full lifecycle of digital transformation.

As of the end of the reporting period, the Group operated more than 50 data centers in over 30 cities throughout China, with more than 78,000 cabinets, more than 3,000G of port capacity and more than 1,000G of high-speed cloud dedicated access. This makes us stand out as a new engine for customers' digital transformation. In addition, VNET supported the entry of large international cloud solutions into the Chinese market, including Microsoft Azure, Office 365, Dynamics 365, Power Platform, etc. These platforms have been introduced to China and are now under independent operation.

VNET has provided solid business foundations for a base of over 6,500 enterprises across the globe, including nearly 100 high-growth industry leaders. This has been achieved using our strong resource and capital strength, powerful innovation capacity, efficient delivery capability, and excellent operational capability. Besides the existing large data center clusters, VNET is catering a new collection of scaled-up, standardized, eco-friendly, high-capacity data centers in efforts to meet the demand of the rapid market expansion of enterprises in China and beyond.



Domestic operation capacity

Over **30** cities

More than **50** data centers

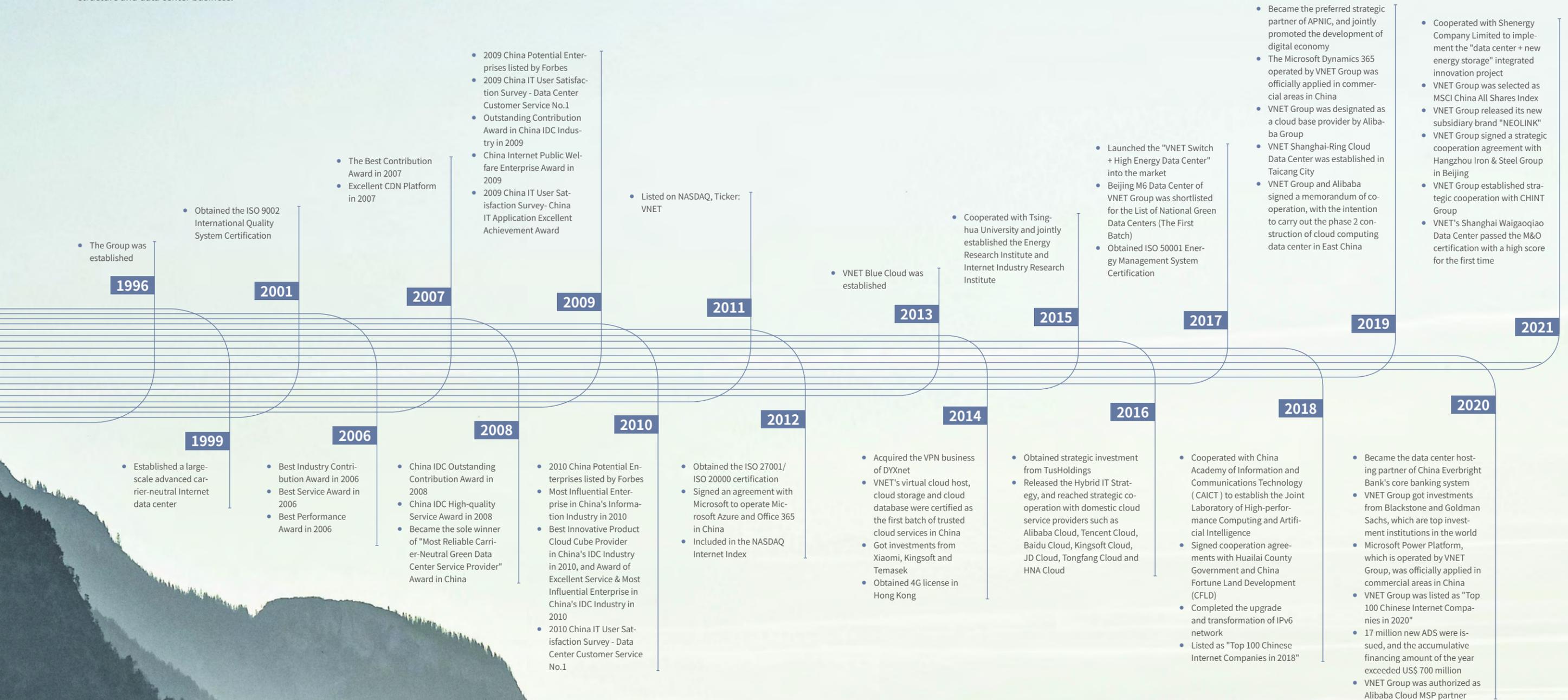
More than **78,000** cabinets

More than **3,000** G of port capacity

More than **1,000** G of high-speed cloud dedicated access

Quarter-century's Performance Highlights

The end of 2021 marked VNET's 25th anniversary. Unremitting efforts have led us to receive numerous achievements and awards in cyberinfrastructure and data center business.



Responsible Governance

Governance Structure

In strict accordance with the Company Law of the People's Republic of China, the Securities Exchange Act of the United States and other relevant laws and regulations, VNET consistently improves the modern corporate governance structure, actively creates a positive internal and external governance environment, protects the interests of all shareholders, and promotes the healthy and stable development of the Group. The robust governance structure is comprised of the general meeting of shareholders, the Board of Directors and its subordinate committees, as well as the management. Under the supervision and guidance of these Board committees, the Board of Directors provides consultation and suggestions on the management of various divisions. This involves formulating relevant strategies, supervising their implementation, and monitoring the operational and financial performance of the Group, ensuring soundness of internal control and risk management systems. Our Board committees' scope of responsibilities is published on the official website¹ of VNET and is available to all shareholders.

We believe that board diversity brings different perspectives for the development of the Group and provides a solid foundation for promoting sustainability. In accordance with committee charters, the Corporate Governance and Nomination Committee evaluates the Board structure every year in terms of independence, expertise, skill and experience of Board members. It is devoted to selecting the most qualified members according to the principle of diversity. The factors to be considered include but are not limited to gender, cultural background and race. This is to ensure the balance between skill, experience and view diversity and improve the board effectiveness.

As of the end of the reporting period, the Board of Directors consisted of six members, including one executive director and five independent non-executive directors. The current directors of the Group are all equipped with professional qualities and strong educational background. The composition of the Board of Directors is as follows:

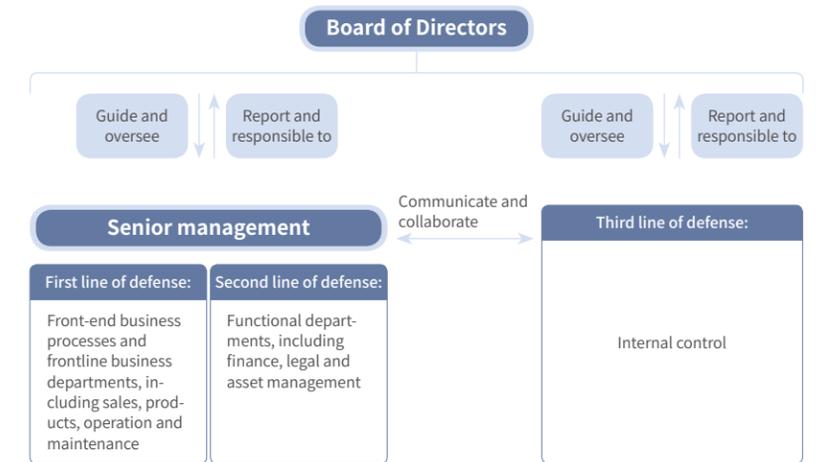
Title	Name	Educational Background	Expertise		
			Industry experience	Risk management	Financial management
Founder and Chairman	Mr. Josh Sheng Chen	Bachelor of Electrical Engineering	✓	✓	✓
Independent Director	Mr. Yoshihisa Ueno	Bachelor of Business Administration	✓	✓	✓
Independent Director	Mr. Kenneth Chung-Hou Tai	Master of Business Administration; Bachelor of Electrical Engineering	✓	✓	✓
Independent Director	Mr. Sean Shao	Master of Management	✓	✓	✓
Independent Director	Mr. Erfei Liu	Master of Business Administration	✓	✓	
Independent Director	Mr. Yao Li	PhD in Economics	✓	✓	

The Group encourages our directors to take up professional training and courses tailored to their needs, as well as providing them with legal and regulatory updates for reference and study. We aim to enhance the board's awareness and performance in the respective areas. We invest in the anti-corruption training for them. As of the end of the reporting period, all directors of the Group have participated in various forms of anti-corruption training.

1. <https://ir.vnet.com/corporate-governance/board-of-directors>

Risk Prevention and Control

VNET firmly believes that the effective risk management and internal control hold the key to the success of the Group. In accordance with the NASDAQ's Corporate Governance Guidelines and other guidelines, we develop risk management and internal control systems tailored to the characteristics of our business development. We identify and give early warnings to financial and non-financial risks in the operation process, as well as put in place an effective risk prevention and control mechanism. We also clearly define the roles and responsibilities assumed by the Board of Directors, Board of Supervisors, management, internal control teams and external audit agencies in the risk prevention and control system to ensure both soundness and effectiveness.



"Three lines of defense" for risk management

Based on the COSO Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and in accordance with the Sarbanes-Oxley Act, VNET adopts the three lines of defense model for risk management. The model distinguishes the level and role of different lines of defense involved in risk management and defines the control process for risks of various types. The first line of defense focuses on the prevention and control of business-related risks through regular business processes. The second line of defense manages risk-related tasks and activities from the perspective of functional departments. It guides and oversees the first line of defense to optimize risk management. The third line of defense provides post-event examination and assessment of the operation of the first and second lines of defense by the Internal Control Department. In doing this, we identify problems and arrange for rectifications to ensure the implementation and optimization of risk management policies and responsibilities.

Forward-looking risk management

VNET pays particular attention to risks that are highly sensitive to corporate operations, such as the risk of relevant transactions. We are committed to implementing a comprehensive and forward-looking risk management system, and effectively controlling potential

risks such as climate change and energy supply risks. We have formulated a series of emergency response guidelines, such as the Response System for Sudden-onset Emergencies, and obtained the disaster recovery information security service qualification certification issued by China Cybersecurity Review Technology and Certification Center, which safeguards the normal business operation of the Group amid potential risks.

In 2021, the Internal Control Department of the Group carried out risk identification and risk importance assessment, including risks of information security, human resource, and climate change. The department reports on the results of important risk assessment and internal control effectiveness to the Board of Directors and is subject to its supervision.

Internal control audit

We conduct annual test and self-evaluation of the effectiveness in the design and execution of the internal control system. We also invite external auditors annually to assess the effectiveness of the internal control of financial reports and disclose the significant defects identified in the internal control of non-financial reports. The full text of financial and internal control audit reports presented by the auditors are published on our official website for review and supervision by all parties.

Business Ethics

We believe in the importance of upholding business ethics in the fiercely competitive and fast-changing global business environment and pledge to conduct business operations in accordance with the highest ethical standards. We formulated and issued the Code of Business Conduct and Ethical Standards, requiring employees of the Group and third-party agencies to engage in business activities accordingly.

As a corporate member of United Nations Global Compact (UNGC), VNET has always unwaveringly protected internationally recognized human rights. We oppose any disregard or violation of human rights, and never tolerate any unlawful discrimination or harassment against race, ethnicity, region, gender, age, nationality or class, etc. We incorporate personal privacy protection, employee rights protection, and supply chain human rights protection into our business activities and proactively promote the implementation of related work. We also respect the right of existence and development for the poor, the disabled and other special groups, and lend support to the development of human rights in disadvantaged and remote areas.

Compliance Management

VNET adheres to the concept of "doing business with integrity". We strictly abide by relevant laws and regulations, including the Company Law of the People's Republic of China, the Anti-Unfair Competition Law of the People's Republic of China, the Anti-Monopoly Law of the People's Republic of China, the Foreign Corrupt Practices Act of the United States, and the Sarbanes-Oxley Act, as well as establish a complete and sound compliance management system tailored to the Group. The Group formulated and issued the Regulations on Compliance and Information Security Management and other systems, which specify issues such as anti-corruption, anti-monopoly, intellectual property and confidentiality. We also form a three-tier compliance management system:

- The Compliance and Information Security Management Committee formulates the overall policies and objectives related to compliance management
- The Compliance and Information Security Working Group ensures daily business compliance
- Relevant departments are responsible for risk identification and implementation

To address the impact of increasing external threats such as natural disasters and external attacks on the business stability and information security of our data centers, we strengthen the construction of business continuity management system and obtain the certificates. These include Business Continuity Management System (ISO 22301) and Information Security Management System (ISO 27001) certifications.

In accordance with the laws and regulations related to intellectual property, such as the Patent Law of the People's Republic of China, the Trademark Law of the People's Republic of China, and the Copyright Law of the People's Republic of China, the Group has established a robust intellectual property management system and specified the organizational structure of intellectual property management and the responsibilities of all departments involved. In 2021, the Group enhanced management in aspects such as patent, domain name, trademark, and copyright, enlarged product categories involved in registration and the scope of protection, as well as actively developed a comprehensive intellectual property system. In case of infringement of intellectual property rights, we will activate an emergency feedback mechanism and set up special teams to col-

lect and analyze the evidence. We will also issue a warning letter in time to safeguard our legitimate rights and interests. Thanks to our excellent intellectual property management, we won the honor of "Beijing Intellectual Property Demonstration Unit" in 2021.

To avoid infringement of the intellectual property rights of third parties, we meticulously review the terms of intellectual property rights in the contract and agree on the ownership of intellectual property rights to avoid disputes. We also keep track of patent application within the industry and identify infringement in advance. If any violation is identified, we will promptly notify relevant departments of rectification before deadline. In 2021, VNET was not involved in infringement of the intellectual property rights of others.

The Group gives high priority to the construction of compliance culture and actively organizes the publicity and education on compliance. We design a series of compliance courses through the platform, "VNET E-learning". In addition, all employees are urged to enhance their compliance awareness and improve the business ethics of compliance, veracity and integrity.



Business Continuity Management System and Information Security Management System certifications



Anti-corruption

VNET adopts zero-tolerance policies towards corruption. Adhering to the handling principles of education, supervision, punishment, and protection, we establish a complete integrity management system and formulate various policies, such as the Gift Registration System, the Integrity Inspection System, the Integrity Conservation System, the Integrity and Whistleblowing Rewards Program, and the Whistleblowing and Whistleblower Protection Policy. In addition to specifying the anti-corruption system, supervision management, integrity education, whistleblowing, and investigation, we also require all employees and third-party suppliers to sign the Anti-bribery Commitment Letter, and implement an effective whole-process anti-corruption mechanism, so as to ensure the healthy, stable and long-term development of the Group.

Risk prevention

VNET establishes an anti-corruption risk identification management process, conducts regular bi-annual inspections to identify and urge relevant departments to resolve risks in a timely manner. Based on the risk identification and evaluation system model, we identify potential integrity risks and management loopholes within the Group in the daily work. After confirming the existence of risks, the Integrity Department and the Audit Department will jointly conduct investigations, and carry out quantitative analysis of integrity risks. According to the complaints and feedback from external channels, we also investigate post responsibilities and corruption risks, identify the risks of corruption events and solve them promptly.

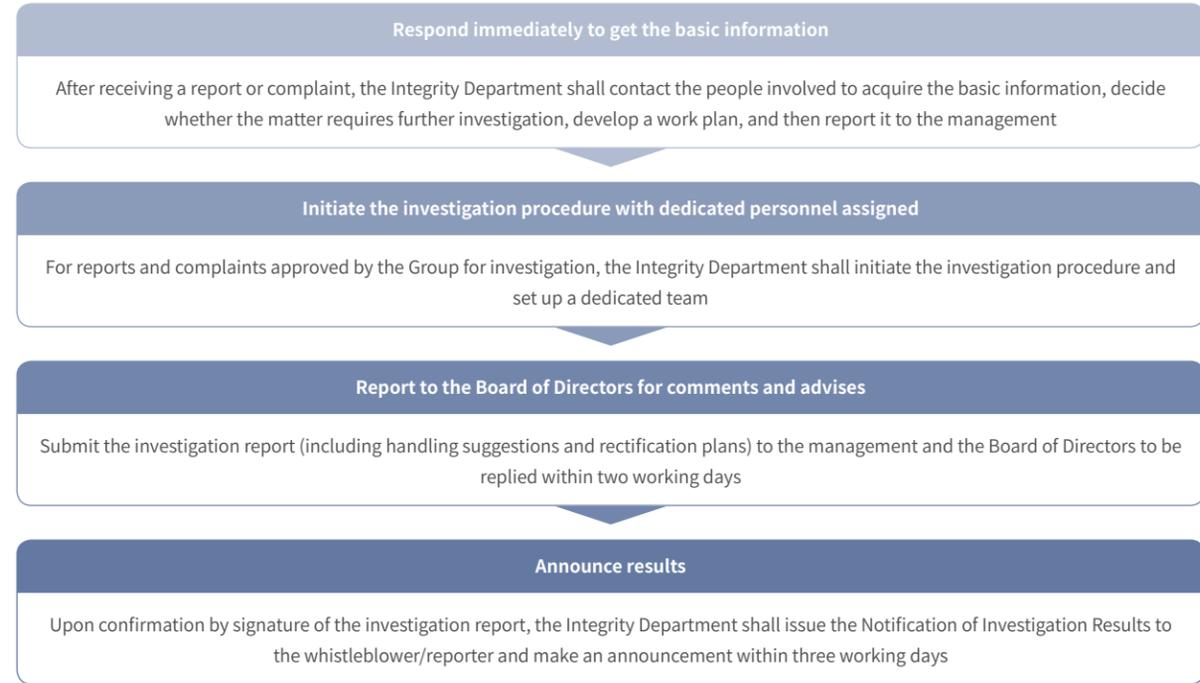
Whistleblowing mechanism

VNET has developed an effective whistleblowing and handling system led by our Integrity Department. Any stakeholder or individual can make a complaint, either using their name or remaining anonymous, by e-mail, phone, or other means. We resolutely fight non-compliant misconducts such as accepting, giving or seeking bribes, and kickbacks.

VNET has developed a sound whistleblowing process and whistleblower protection system. We initiate investigations for reports and complaints and set up units to carry out these investigations. The investigation process and results are reported directly to both the management and the Board of Directors.

The Group offers whistleblowing channels to all relevant parties, including employees and suppliers:

-  Whistleblowing Hotline | (010)84562121-1897
-  Address | VNET, No.10, Jiuxianqiao East Road, Chaoyang District, Beijing
-  Whistleblowing E-Mail | Ju.bao@vnet.com
-  Handling Post | Head of the Integrity Department
-  Postal Code | 100016



In 2021, the Group handled two valid reports and complaints that were investigated. The first case was related to embezzlement. After the incident occurred, we immediately conducted an investigation, successfully recovered the funds and dismissed the employees involved. Moreover, we issued a warning notice within the Group. The second case involved the improper reception of performance-based bonus. We persuaded the employees involved to leave and gave warning at the anti-corruption meeting. There were no corruption-related legal proceedings against the Group or our employees in 2021.

Whistleblower protection

The Group protects and respects every whistleblower. We adhere to the "protection of whistleblowers and anonymous investigations" to resolutely safeguard their interests. We also strictly control the access to whistleblowing-related information within the Group. Confidential materials that are involved in the investigations are protected through such means as technical encryption and physical isolation. The whistleblower-related information, such as name, workplace, and contact details, shall not be disclosed under any circumstances unless there is consent from the whistleblower. The Group also welcomes anonymous whistleblowing and makes whistleblowing channels available.

The Group deals with the investigators who violate the confidentiality of whistleblowing, fail to perform their duties, retaliate against the whistleblowers, or take hostile measures against other investigators in a serious manner. If the circumstances are serious enough to constitute a crime, they shall be transferred to judicial organs.

Anti-corruption promotion and training

VNET highly values the anti-corruption training and focuses on building a corporate culture of transparency and integrity. The Group has publicized 15 articles and warning cases on integrity education to all employees and directors through DingTalk bulletin boards and office posters. We carry out integrity training and educational seminars tailored to those departments and employees with higher corruption risks, and supervise their behaviors in daily management. In addition, VNET joined the Anti-Fraud Alliance in 2019, and participated in online courses and offline training sessions organized by the Alliance on a regular basis to ensure the best practice of business ethics and compliance requirements are met.

VNET has established integrity education column, open integrity education training courses. This aims to enhance employees' integrity awareness and create a strong integrity operation atmosphere. In 2021, the Group organized integrity education and training for the management. The chairman, CEO and senior management all participated in the training and delivered important speeches, further enhancing the integrity awareness among the management and reinforcing the line of defense against anti-corruption.

In 2021, VNET achieved 100% coverage of anti-corruption training for directors, management and employees.



The management receives integrity training

ESG Strategy

ESG Governance Structure

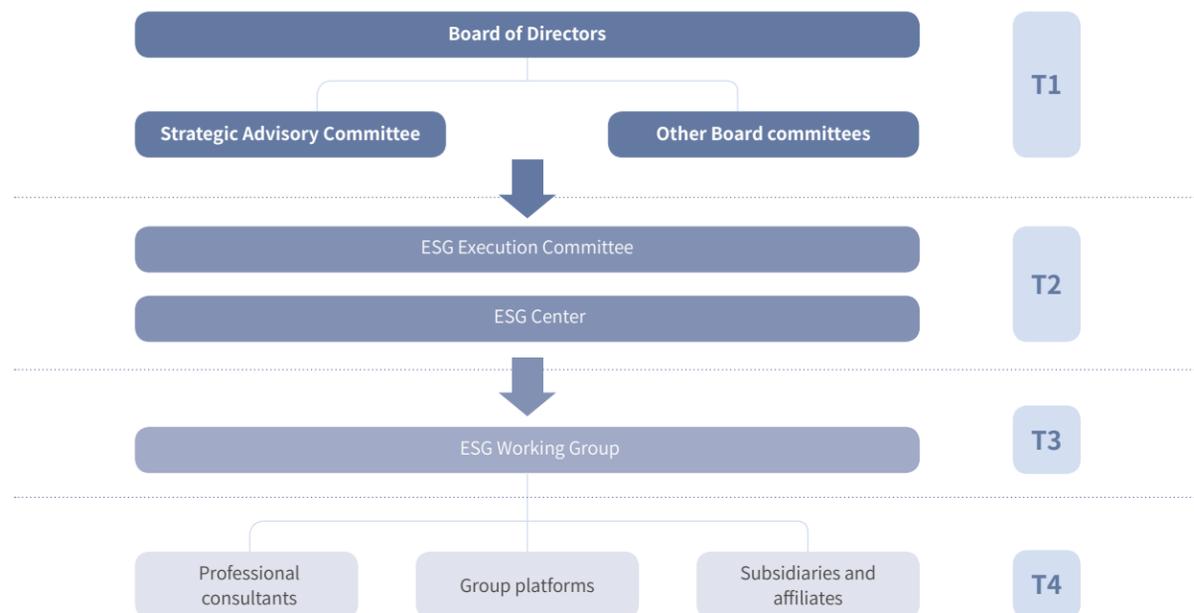
VNET integrates environmental, social and governance (hereinafter referred to as the "ESG") management philosophy into major decisions of the Group, promotes high-quality development of the Group, and safeguards the interests of investors, customers, employees, communities and other stakeholders. The Group incorporates ESG governance into the corporate governance structure, which consists of all levels of corporate hierarchy including the board, board committees, management, coordinating departments and business departments.

Tier 1: The Board of Directors steers the ESG strategy of the Group and takes ultimate responsibility for ESG-related matters. The Strategic Advisory Committee takes the role of supervision to effectively supervise and manage the implementation of the ESG-related work at the Group level.

Tier 2: Led by the CEO, the ESG Execution Committee is comprised of senior management of relevant departments. The Committee is mainly responsible for developing ESG strategies, annual performance targets and plans of key improvement areas. The Committee reports the progress of ESG-related work to the Strategic Advisory Committee on a quarterly basis. The ESG Center is responsible for coordinating the planning, promotion and implementation of ESG-related work.

Tier 3: The ESG Working Group, consisting of leaders from respective functional departments, promotes the ESG-related work both within and outside the Group.

Tier 4: With the Group platform and our affiliates serving as main working parties, the ESG-related work is implemented with the assistance of professional consultants.



Sustainability System

As a member of UNGC, we pledge to support its Ten Principles and the achievement of the United Nations Sustainable Development Goals (SDGs). To benchmark and align with SDGs, we have developed a sustainability system called SHIELD and integrated 18 identified sustainability issues into six implementation areas, namely Social, Human, Innovation, Environment, Leadership, and Development. We also supervise and assess our ESG performance in a holistic manner to improve our sustainability management.



Stakeholder Engagement

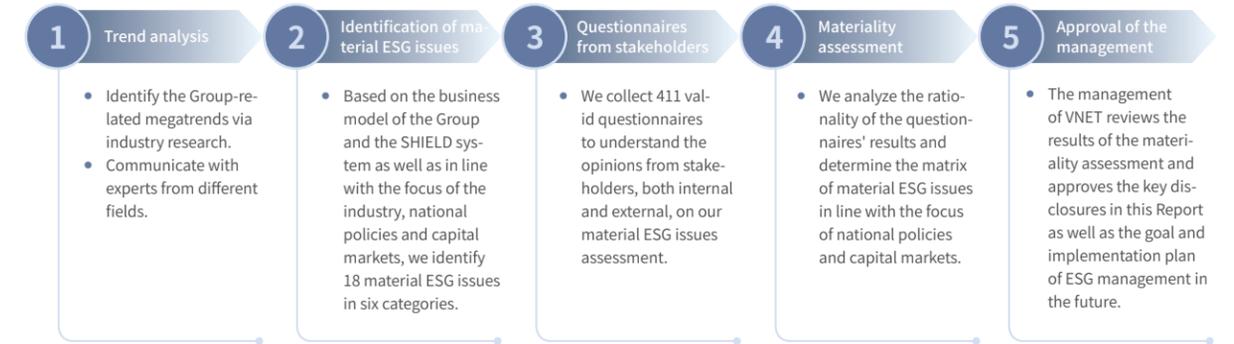
Communication with Stakeholders

VNET values the communication with stakeholders, establishes regular communication mechanisms, identifies and actively responds to the ESG topics that our stakeholders focus. In 2021, the communication mechanisms with the stakeholders of the Group are as follows:

Major stakeholders	Stakeholders' concerns	Major communication channels
Government and regulators	<ul style="list-style-type: none"> Business compliance Ecological conservation and environmental protection Climate change Carbon emissions Waste management Utilization of water resources Renewable energy 	<ul style="list-style-type: none"> Government consultation Information disclosure Thematic reports Statistical statements
Shareholders and other investors	<ul style="list-style-type: none"> Corporate governance Business compliance Renewable energy Carbon emissions Climate change 	<ul style="list-style-type: none"> Information disclosure General meetings of shareholders Roadshows On-site visits
Employees	<ul style="list-style-type: none"> Diversity and equal opportunities Protection of employee rights and interests Attraction and retention Occupational health and safety Training and development 	<ul style="list-style-type: none"> Seminars Union Trainings Reporting mailbox
Customers	<ul style="list-style-type: none"> Quality products and services Privacy and data security Business ethics Carbon emissions 	<ul style="list-style-type: none"> Product launches Satisfaction surveys Communication and complaint channels
Suppliers and other partners	<ul style="list-style-type: none"> Sustainable supply chains Business compliance Business ethics 	<ul style="list-style-type: none"> Procurement activities Supplier trainings
Media, NGOs and industry associations	<ul style="list-style-type: none"> Quality products and services Privacy and data security Ecological conservation and environmental protection Climate change Utilization of water resources Renewable energy Sustainable supply chains 	<ul style="list-style-type: none"> Industry summits Information disclosure Communication mechanisms Press conferences
Public and communities	<ul style="list-style-type: none"> Community engagement and contribution Ecological conservation and environmental protection 	<ul style="list-style-type: none"> Questionnaires Charitable activities Poverty relief projects

Materiality Assessment

In 2021, the Group established a comprehensive ESG topic list in accordance with the SHIELD sustainable system, which will be applicable in the medium and long run. The procedure of our material issues assessment is as follows:



Our materiality assessment is as follow:



We will enhance the disclosure of material issues in accordance with the results of this assessment. In daily operations, we will take on board these results as guidance for our future work. We will consistently optimize our work, as part of the efforts to respond to stakeholders' expectations. This will increase trust and cooperation whilst jointly advancing the sustainable development of the Group and the society.

Climate Action: Towards a Zero-carbon Future



- Commitments to Carbon Neutrality
- Climate-related Financial Disclosures
- Green Practice throughout Operation Cycle
- Key Environmental Performance

Facing the global challenge of climate change, VNET sets an ambitious goal of carbon neutrality as part of the efforts to advance the low-carbon transition of the Group.

The average annual Power Usage Effectiveness (PUE) of data centers with stabilized operations in 2021 was

1.37

The average annual carbon emission reductions of installed photovoltaic projects in Boxing Data Center reached

156.66 tons

3 data centers were awarded *"National Green Data Center"*

2 Data Centers were awarded *"5A Green Data Center Ratings"*

VNET Foshan Smart City Data Center was awarded *"Gold Medal of ODCC Green Data Center Assessment"* and *"Innovative Data Center on Carbon Emission Reductions"*

VNET Beijing Xingguang Data Center was awarded *"Model Case of Green and Low-carbon development"*

VNET Taicang International Internet of Vehicles Big Data Industrial Park was awarded *"Demonstration Data Center of low-carbon development in the Yangtze River Delta"*

Awarded *"2021 Data Center Technological Achievements, Second Prize"*

Awarded *"2020 Leaders in Energy Efficiency in Beijing (Data Center), Advanced Technology Award"*

Awarded *"2021 Carbon Neutrality Practice Award in China's IDC Industry"*

To achieve net zero set out in the Paris Agreement, China announced the goals of "striving to peak carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060" in September 2020. In line with China's "dual carbon" goals and the Group strategy of sustainability, VNET has taken the initiative to make the application of clean technologies one of its core strategies and develop carbon neutrality strategies. We also support our customers and partners with cloud services to reduce energy consumption in IT infrastructure, to jointly build a zero-carbon society.

Commitments to Carbon Neutrality

Our Targets

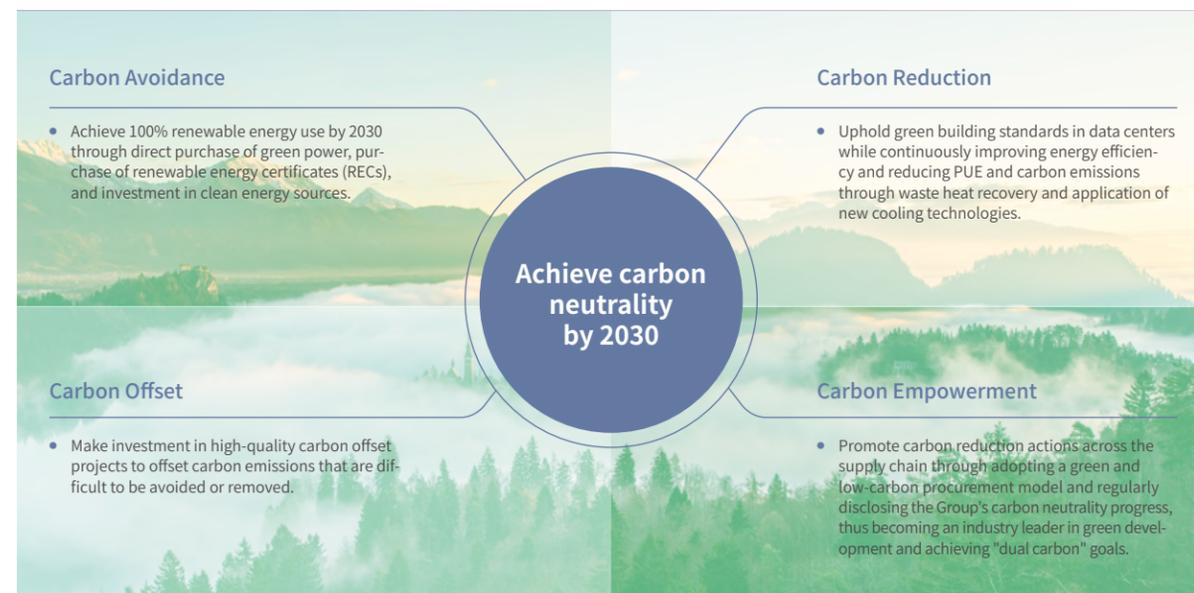
Faced with the global challenges of climate change, VNET, as a leading and responsible IT infrastructure service provider, has set ambitious carbon reduction targets. These are based on the results of carbon emission inventory and third-party verification in combination with our past carbon reduction practices, in an attempt to drive the Group's low-carbon transition. Our carbon reduction commitments are as follows:

VNET Carbon Neutrality Targets

By 2030
Achieving operational **carbon neutrality**
in Scope 1 and Scope 2 emissions
Achieving **100%** renewable energy use in operations

Our Strategies

Based on our current carbon emission status and business model, we have developed a "4C" pathway towards carbon neutrality, namely, carbon avoidance, carbon reduction, carbon offset, and carbon empowerment. This will fully leverage an array of approaches including renewable energy transition, energy-saving technology use, carbon sinks, carbon trading and empowerment of the upstream and downstream industrial chain.



Based on the current renewable energy policies, analysis of market and technology trends, as well as an in-depth feasibility study of on-site resource access methods, VNET has formulated the following short-term and long-term directions of action and pathways, with a view to gradually develop feasible targets for stages.

Strategies	Directions of action	Short-term pathways	Long-term pathways
Carbon avoidance	Green power trading	Conduct green power trading in some data centers and actively promote exchanges and cooperation with government and power generation enterprises; Prioritize the convenience of direct green power use during the site selection phase.	Promote and scale up green power trading in data centers.
	Renewable energy investment	Actively explore quality renewable energy investment projects.	Actively invest in renewable energy projects, and cooperate with power grid dispatching while meeting our internal power demand.
	Renewable energy certificates	Purchase RECs to supplement green power trading and investment.	
	Distributed renewable energy	Install distributed photovoltaic (PV) equipment in data centers to power office and lighting system;	Expand the sources and application of distributed renewable energy equipment in the park and explore market-based trading;
Continue to study energy storage technology and expand its application in data centers;		Further exploit the role of energy storage technology in the steady supply of renewable energy;	
Carbon reduction	Conduct in-depth research on the application of hydrogen energy in data centers.	Continue to promote the application of other types of clean energy such as hydrogen energy in data centers where feasible.	
	Green buildings	Increase standards for new constructions and optimize existing buildings	Achieve 100% green buildings.
	Application of energy-saving technology	Continue to improve energy efficiency standards for newly purchased equipment and increase the energy efficiency of existing equipment; Promote waste heat recovery.	Achieve 100% high-efficiency equipment.
Carbon empowerment	Smart operation & maintenance system	Realize comprehensive perception, smart analysis, and smart operation & maintenance of digital assets.	Promote the full coverage of smart operation & maintenance system in self-owned data centers to empower the industrial chain.
	Carbon offset	Investment in quality carbon offset projects	Actively explore opportunities to invest in quality carbon offset projects; Keep tabs on the carbon trading market.
Carbon empowerment	Industrial chain empowerment	Strive for 100% green procurement; Participate in the formulation of standards for zero-carbon data centers.	Establish internal green procurement standards to achieve 100% green procurement; Promote low-carbon development in the industry, share green practices, and drive the entire industrial chain towards zero-carbon emissions.

Our Actions

As shown by VNET's statistical records and carbon emission inventory results, the majority of carbon emissions from our operations come from electricity use. Therefore, the transition to renewable energy is an essential pathway to reducing greenhouse gas emissions and mitigating climate change.

Multi-dimensional renewable energy practices

- Distributed renewable energy

In some of our data centers, we have either installed renewable energy generation equipment or reserved equipment installation locations, such as rooftop PV systems for office or park lighting. This move only realizes the integrated utilization of solar energy and buildings to enhance the percentage of green power use in data centers, but also lays the foundation for boosting the comprehensive energy utilization in the park.

Case // Beijing Yizhuang Boxing Data Center PV project

In 2021, our Beijing Yizhuang Boxing Data Center PV project was successfully connected to the grid, becoming VNET's first data center to use solar energy for park lighting. With sufficient external light, solar panels can convert the solar energy into electricity via the photoelectric effect and store the electricity in the battery, which will be preferably used for equipment power supply when needed. The installed capacity of this PV project is 194.4 kW, with an average annual power generation of around 180,000 kWh, reducing approximately 59.79 tons of standard coal and 156.66 tons of CO₂ emission.



Beijing Yizhuang Boxing Data Center

- Photovoltaic + Energy storage technology application

VNET continues to enhance the application of energy storage technology in data centers and implement large-capacity energy storage projects. We are the first in the industry to realize the innovative application of "data center + photovoltaic power + large-scale energy storage", creating the first project in China where new large-scale energy storage technology is applied to large data centers.

Case // "Photovoltaic + energy storage" technology in data center in Foshan

In July 2021, VNET built the first domestic project to apply the "photovoltaic + energy storage" technology in a data center in Foshan. The project is equipped with an energy storage capacity of 2 MWh, and together with the municipal grid, supply power for the data center. Based on the grid demand and demand for renewable energy, we adjusted the charge and discharge strategy, to solve the problem of unstable power generation of PV equipment, and

provided effective solutions for applying distributed clean energy power generation in our data center. In 2021, our data center was included in the first batch of green data centers to receive the Gold Certificate from the Chinese Institute of Electronics and obtain the title of "Carbon Emission Reduction Data Center Innovator" jointly issued by the China Academy of Information and Communications Technology and other institutions.



- Strategic energy cooperation

In order to speed up the application of renewable energy, we cooperate with leading companies in the energy sector to explore the best way to increase the proportion of renewable energy in energy use.

In January 2022, VNET signed strategic cooperation framework agreements with three leading power companies in China. We will give full play to our advantages and conduct in-depth cooperation in the construction of distributed renewable energy power generation systems in data centers, long-and short-term trading of green power, as well as long-and short-term integrated energy solutions associated with RECs. We will also discuss the development of the "source-grid-load-storage integration" pilot project and the promotion of the technologically innovative "SPEAR" pilot project.

We have also signed a strategic cooperation agreement with a hydrogen energy technology company to integrate new technologies, including energy storage and hydrogen energy, and increase the proportion of renewable energy supplying data centers. Within the renewable energy system, hydrogen energy has played a pivotal role in achieving carbon neutrality due to its renewable, safe and environment-friendly attributes. VNET has been on the way to explore the application of hydrogen energy technology as backup power supply, in "source-grid-load-storage integration" and local "micro-grid" as well as our future business models.

Participation in the industrial standards' development

As a leading service provider and low-carbon practitioner for data centers in China, VNET actively participates in the formulation of relevant standards for green data centers, taking a leading role in following the path of "green, energy-saving, and carbon-reducing" in order to achieve sustainable development.

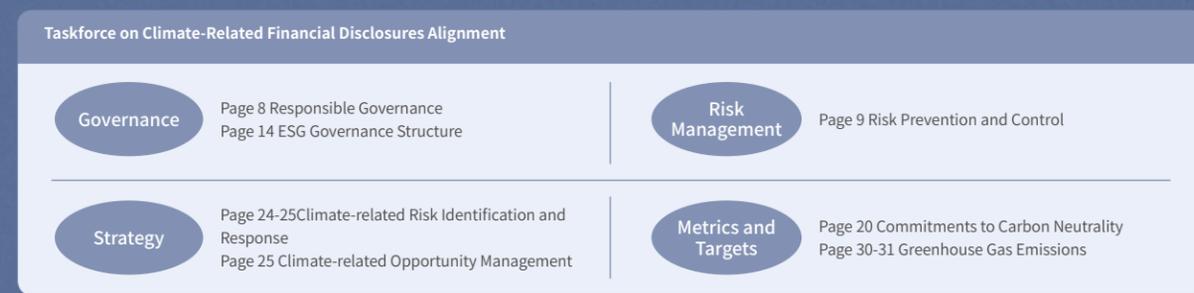
In 2021, the Construction Standards for Zero-Carbon Data Centers co-edited by VNET was officially implemented. It sets forth the corresponding technical requirements for realizing zero-carbon data centers and specifies the carbon emissions calculation methods for the full life cycle, providing important guidance for the "decarbonization" of data centers. In addition, the Accounting Guidelines of Greenhouse Gas Emissions in Data Centers co-edited by VNET has also been issued and implemented, which provides a solid reference for the calculation of carbon emissions in data centers and serves as an effective data basis for setting the carbon neutrality targets for the industry.

Climate-related Financial Disclosures

Global climate change has led to frequent occurrence of extreme events, ecological degradation, and continuous environmental issues such as air, soil and water, all of which have posed a serious threat to the survival of humanity. In 2021, at the COP26 Summit in Glasgow, UK, China and the United States issued the China-US Joint Glasgow Declaration on Enhancing Climate Action in the 2020s, which will have a crucial and profound influence on the cooperation to combat global climate change. We have incorporated climate risk management into our corporate strategy and announced our support for the Task Force on Climate-Related Financial Disclosures (TCFD) in alignment with international standards and practices in December 2021. As an important player in China's digital infrastructure development,

we also strive to be a green contributor in addressing global climate change.

VNET has incorporated climate change into risk management systems. We regularly evaluate all asset-and business-related risks and opportunities based on their potential impact on the finance and stability of business activities, as well as the concerns from our customers and shareholders. The Group will establish an effective internal control mechanism based on risk assessments to minimize the negative impact of climate-related risks and seize new opportunities.



Climate-related Risk Identification and Response

Physical risks

Acute

At the company level, worldwide extreme weather events caused by climate change, such as extreme rainfall, typhoons, and floods, may threaten the physical security, stable power supply, and long-term electricity cost of our data centers and the IT infrastructure of our customers. Moreover, the growing frequency and intensity of regional extreme weather events further increases the possibility and impact of acute risks. Due to the key role played by our data centers in our customers' businesses, service disruptions or major equipment damage may directly or indirectly harm the business continuity and economic benefits of our customers.

To mitigate the impact of such risk, we consider the risk exposures of extreme weather events at different stages of the asset life cycle. In addition to managing potential risks through scientific site selection and design standards for data centers, we also take preventive measures to reduce losses associated with acute weather events. We evaluate and check the effectiveness of these measures annually and ensure that effective management measures are in place for climate change risk factors in each data center. Meanwhile, VNET receives reports from insurance service providers, and purchases insurance for each item of asset accordingly.

Chronic

Chronic events triggered by climate change may lead to higher operational instability and costs. For example, severe droughts can result in a higher water use cost. Fires caused by continuous heat may cause operational disruption or loss of assets. Sea level raise may have an impact on data centers in coastal areas.

We will conduct sensitivity analysis and scenario analysis of climate change, and continue to implement sustainability projects, so as to minimize our environmental impact and mitigate related climate change risks. For example, we engage in strategic cooperation with the power industry companies, facilitate the development and use of renewable energy, design and build data centers with higher energy efficiency, and improve energy and water efficiency in the operation.

Transition risks

Policy and legal

As new carbon emission-related laws, regulations, policies and taxes come into effect, compliance costs may rise. To reduce such risk, we strengthen energy control and gradually increase the share of clean energy. We also set up a team to regularly study national policies and provide solutions to ensure operational compliance.

More stringent construction specifications and standards for data centers may involve higher design and construction costs and the application of new technologies. To mitigate such risk, our design and construction team builds data centers to high standards, and reduces the impact of any construction specifications on the operation and development of data centers.

Technology

Failure to identify and apply emerging technologies promptly, such as low-carbon technology and artificial intelligence, may present greater climate-related risks to our operations. To reduce such risk, we actively explore the possibility of technological progress and strengthen the construction of future intelligent information infrastructure through the SPEAR plan.

Market

Our suppliers may have to deal with rising costs due to climate change, indirectly leading to cost increase at our side. To mitigate such risk, we seek suppliers that are less vulnerable to climate change, such as using alternative energy or evaluating the use of alternative raw materials.

The shift in customer preferences may draw more attention to low-carbon data centers and renewable energy, thereby affecting the marketing of our core business. To manage such risk, we actively track customer needs through a communication feedback mechanism, strive to make critical advances on renewable energy and low-carbon targets (emission reduction targets), and accelerate the construction of low-carbon data centers.

Reputational

As our customers and investors are increasingly concerned about climate change-related issues, any inaction or delay in addressing climate change may damage our reputation, further affecting our earnings and growth. To address such risk, VNET has established the ESG management mechanism to regularly assess the impact of climate change-related issues on our reputation and continuously improve the transparency of our sustainability-related disclosures.

Climate-related Opportunity Management

Energy efficiency

Improving energy efficiency can reduce the PUE and operating costs of our data centers. To leverage these opportunities, we focus on monitoring, identifying and implementing energy efficiency optimization projects, and keep track of the performance and cost optimization.

Alternative energy

Transitioning to low- and zero-emission energy sources and investing in new renewable energy solutions will potentially lower our operating expenses in the long run and reduce the exposure of data centers to possible risks in carbon-related regulations, fees or taxes. Additionally, we have the opportunity to increase our revenue by developing renewable products and solutions for our customers. To this end, our energy team is committed to continuously increasing the proportion of renewable energy use through procurement, cooperation and related technology R&D and application, and developing clean energy solutions to realize our renewable energy targets and minimize carbon emissions in a cost-effective way.

Products and services

Developing sustainable data centers and providing low- and zero-carbon products and services are crucial to improving our market competitiveness in the future. We can support our customers in sustainable development by providing renewable energy and sustainable development solutions, which will become an important mean to attract and retain our customers. To seize such opportunities, we continue to increase the investment in low-carbon development and provide low-carbon products and services that meet our customer needs.

Market

Our diversified product portfolio enables us to leverage a wide range of public utility incentives, and renewable energy and low-carbon products. Meanwhile, the associated low carbon technology investments are paying off and attracting more investors to sponsor our business growth in a cost-effective way. We actively evaluate the feasibility of issuing green bonds and will invest the funds raised into designing, building and operating our sustainability projects.

Resilience

Our customers rely on our stable data centers to ensure their data privacy, security and business continuity. Through site selection, climate change response plans, insurance, green building design, efficient operation and maintenance, as well as practices in data privacy, cybersecurity and physical security, we continue to improve our resilience to climate change and further enhance our market competitiveness by providing stable and high-quality data center services.



Green Practice throughout Operation Cycle

In order to fulfill our commitments to carbon neutrality and contribute to China's "dual carbon" goals, VNET is actively following a green development path that is "high-efficient, low-carbon, intensive and circular", with the focus on improving the energy utilization rate throughout the life cycle of design, construction, operation and maintenance of data centers. We deeply explore the potential of energy conservation and emission reduction in our daily operation, in line with the strategic planning of green development at the industrial and national level. In 2021, the average PUE of our stabilized data centers was 1.37.

Planning and Design

During the planning, design and construction phases of data centers, we comply with the Code for Design of Data Centers (GB 50174-2017), with "avoiding local ecological damage" as our primary principle. We adhere to the green design and construction standards to ensure that our data centers are green from the outset.

Planning and siting

During site selection phase, we attach great importance to the availability of clean energy and the assessment of environmental impact, to ensure that there is no environmental pollution risk in the target area while developing control measures and emergency plans to minimize potential negative impact on the environment.

We are also concerned about the protection of biodiversity in the area where the project is located. We strictly abide by the requirements and principles of various biodiversity-related regulations and principles such as the Convention on Biological Diversity of the United Nations, and assess the biodiversity impact of the project to avoid or mitigate potential impacts.

Green buildings

In the designing period of data centers, we benchmark with the international design standard of Tier III Ready and strive for the maximum greenness while ensuring the computational power of our data centers. All new data centers are designed in accordance with the one-star green building standard. For architectural design, we adopt more energy-saving and environment-friendly building structures or designs. For the selection of building materials, we give priority to materials that are durable, environment friendly and recyclable. In addition, we plan to apply for green building certification such as LEED or GREEN BUILDING for all newly-planned data centers.

High-efficiency equipment

The energy consumption of data centers mainly comes from IT equipment, cooling system, and power supply and distribution system. Therefore, we have applied a range of green equipment or technologies to improve the energy efficiency of data centers.

- IT equipment

The increasingly expanding data centers have put forward higher requirements for IT infrastructure deployment and energy efficiency management in computer rooms to achieve lower carbon emissions per unit of computational power. We select energy-efficient IT equipment for newly constructed data centers and phase out high energy consumption equipment in existing data centers. We also actively apply energy-saving technologies for IT equipment to improve energy efficiency and minimize energy waste.

- Cooling system

A large amount of heat is generated during the equipment operation in data centers. The 7*24 uninterrupted operation has strict requirements on the ambient temperature and humidity. While the cooling system is essential in ensuring the stable operation of the equipment, it also causes high energy consumption. Therefore, we have improved the operation efficiency of the cooling system by optimizing the airflow organization design, using high-efficiency energy-saving units, smart temperature control system, and air-conditioning AI energy efficiency management technology. All of these have helped to reduce the PUE of the equipment room and greenhouse gas emissions (GHG).

For the heat generated from the equipment operation in data centers, we recover the waste heat to avoid energy waste.

- Power supply and distribution system

VNET optimizes the structure of power distribution systems and uses high-efficiency and energy-saving distribution equipment to reduce the power loss and improve the efficiency of energy transmission. Moreover, we use the industry-leading dynamic environment monitoring system to monitor the equipment of the power system in a real-time basis and issue timely alarms to avoid energy waste caused by equipment failures.

Case

Hebei Data Center adopted multiple energy-saving technologies

VNET's Hebei data center is designed and constructed in accordance with the Grade A requirements in the Code for Design of Data Centers. The park is equipped with rainwater collection devices for recycling use to reduce water consumption. The PV panel installation locations are reserved on the rooftop of the building or in the park for connecting clean energy equipment in the future. A smart lighting control system is put in place for centralized control so as to minimize power waste. By controlling the temperature of the supply and return water, adopting diffused air supply, and extending the free cooling time of the cooling system, we manage to further reduce the energy consumption in the park. The project is expected to be operational in 2023.

Case

Air-conditioning (AC) AI energy efficiency management

Drawing on years of experience in large-scale IDC data centers, VNET has been actively exploring in-depth cooperation with well-established manufacturers in the industry, carrying out research on AI energy efficiency management of AC system, and applying AI technology in the AC control system.

The management system can obtain historical and real-time operating data of the cooling system, equipment, and pipelines, and establish a comprehensive database for real-time energy monitoring. Moreover, it can, after data analysis, deliver the optimal operation model and strategy for realizing the smart control and management of cooling energy consumption, and provide feedback on the relevant operation strategy and parameters to the on-site operators for strategy execution, to reduce the energy consumption of the system. Currently, the system has been deployed in some of our data centers.

Case

Waste heat recovery

In one of VNET's data centers in north China, we have, based on the actual on-site conditions, and recovered the heat from the medium-temperature water generated during the operation. The recovered heat is used to supply office heating in winter and domestic hot water supply to achieve cascade energy utilization. The overall water source heat pump energy consumption is significantly reduced. In 2021, our waste heat recovery project was selected as a "Green Low Carbon Demonstration Case" by the Beijing Communications Industry Association.

Construction Process

During the construction process, we build the three-level management network for construction site environmental governance. We also adopt various measures to prevent the environmental pollution generated during construction, such as dust, noise, and wastewater. In addition, we strengthen waste management, and minimize or recycle construction wastes, thus reducing the environmental impact generated during construction.



Dust management

- The construction site shall be equipped with the person responsible for dust prevention and control, on-site cleaner, and sprinkler for dust removal;
- The closed enclosure management shall be implemented on the construction site. Hardening and greening shall be conducted at site entrances and exits, key roads and material storage yards;
- The dust-type construction materials and construction waste on the construction site shall be stored in closed warehouses or covered. When the warehouse is fully occupied, they shall be cleaned up and transported to the designated qualified waste recycling unit in a timely manner;
- The project team shall prepare the air pollution emergency plan and initiate the emergency response promptly when pollution warning is issued.



Noise management

- Preference shall be given to low-noise equipment or the construction shall be equipped with muffler equipment, and noise reduction measures shall be adopted during the installation process;
- Improving operation efficiency and reduce the operation time of noise-making equipment;
- Conducting construction in strict accordance with the timetable stipulated by the noise management regulations of the nation or the place where the project is located.



Emission management

- For domestic sewage and production wastewater, we use collection pipes and collection tanks to separate rainwater and sewage. After pretreatment, the sewage and wastewater shall be reused or discharged into municipal sewage treatment pipes.
- For construction waste, we reduce the generation of construction waste through such means as making technical improvements and strengthening management and recycling. For the construction waste generated, we hire qualified third parties for compliance disposal.

Operation Management

Green management system

To pursue green development and strengthen environmental and resource management, the Group has formulated the guidelines, such as the Carbon Emissions Management System and the Energy Management System, which aims to guide energy saving and consumption reduction and continuously explore pathways to improving resource utilization and reducing carbon emissions. In 2021, VNET's main business involves the premises were awarded the Environmental Management System (ISO 14001) and Energy Management System (ISO 50001) certifications respectively.

Intelligent operation system

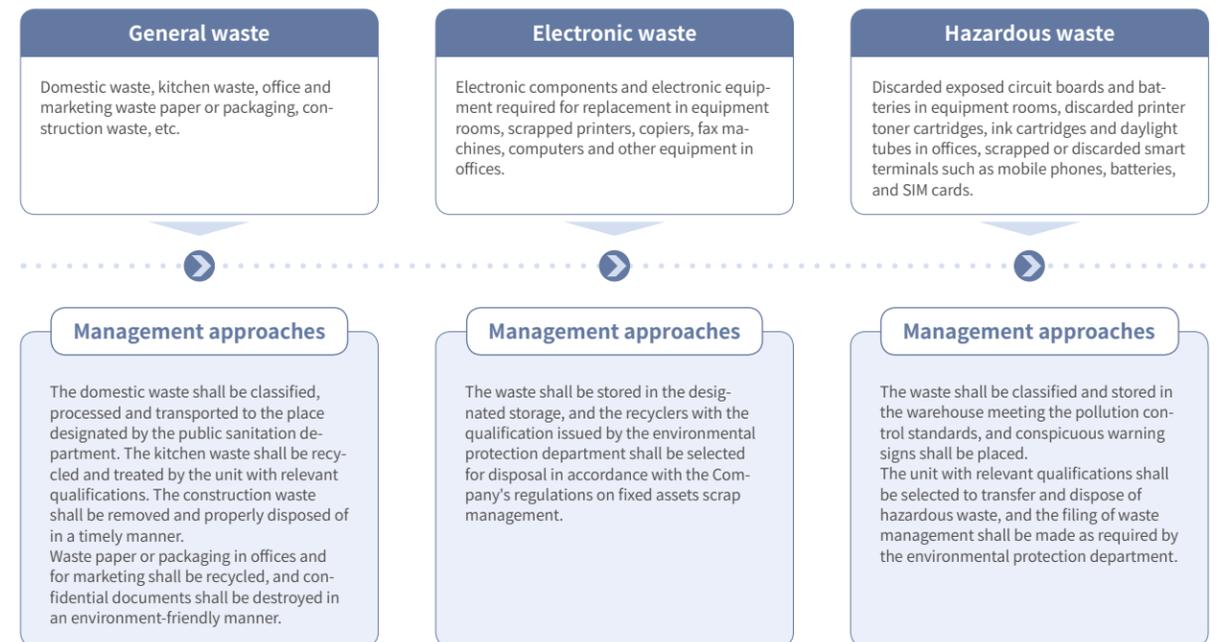
The Data Center Infrastructure Management (DCIM) platform system is a digital-twins-based intelligent operation and management solution for data centers. The system can effectively achieve the high efficiency and low power consumption through the functions, such as "centralized intelligent monitoring" and "intelligent capacity". Up to now, the DCIM platform has been successfully launched in over 20 of our green data centers, effectively reducing PUE by 1% to 5% and improving resource utilization rate by about 10%.

Waste reduction

In strict accordance with relevant laws and regulations, VNET constantly strengthens the management of solid wastes generated in business operations, including the storage, transportation and disposal of solid wastes. We also engage in preventing and controlling environmental pollution risks, and continuously improving the efficiency of comprehensive waste utilization.

VNET is committed to recycling resources. We recycle the scrapped IT equipment in the data centers, fill the service gap at the end of the IT equipment use cycle, and maximize the recycling of customers' electronic waste.

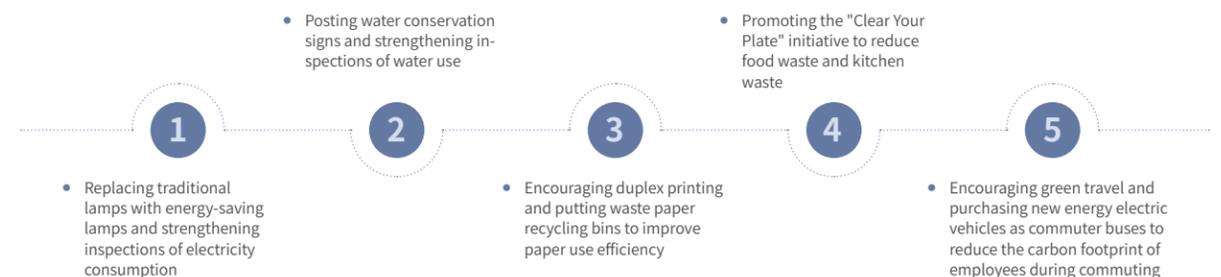
- Secure recycling: We cooperate with service providers with professional data destruction qualifications to carry out full demagnetization, data removal and physical destruction treatment of stored media in scrapped IT equipment, and to prevent information leakage;
- Environment-friendly treatment: We cooperate with qualified recycling partners to dispose of scrapped equipment in accordance with relevant laws and regulations, improve the efficiency of resource use and reduce pressure on the ecological environment.



Green office

VNET attaches importance to the environmental management at our offices. A series of energy-saving and consumption-reducing measures and policies are adopted as part of our green office initiative.

The Group posts posters and slogans in the office area to publicize the concept of saving electricity, paper and water. In accordance with the Beijing Municipal Regulations on the Management of Household Waste, we proactively carry out garbage classification in the office area, prepare garbage classification bins, popularize garbage classification related knowledge, encourage employees to implement garbage classification policies, and promote green lifestyle.



Key Environmental Performance

Energy and Water Resources

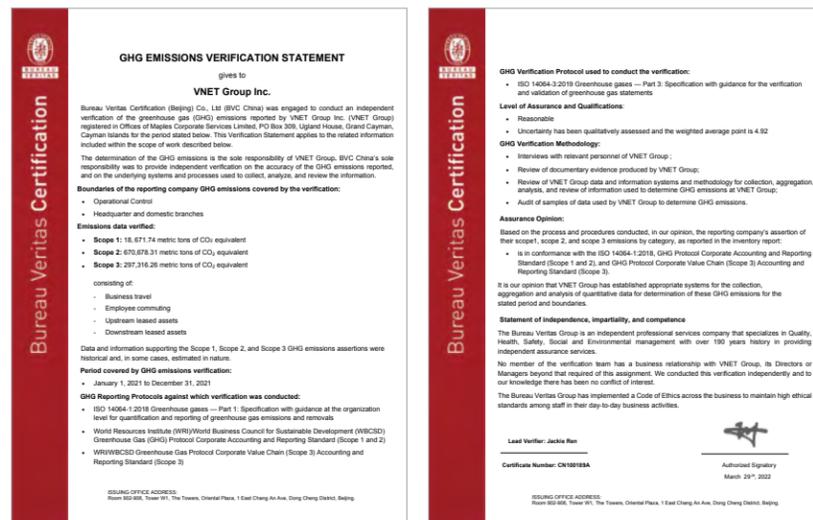
VNET according to the ISO 50001 Energy Management System to establish a comprehensive energy and water management system. We implement cross-regional monitoring and tracking of energy and water resources, and through the DICM platform to achieve precise control of the cooling system to ensure that the system is in optimal operation.

Metric	2021
Energy consumption (MWh)	866,712.84
Gasoline (MWh)	151.99
Diesel (MWh)	2,481.38
Purchased electricity (MWh)	862,966.65
Purchased heat (MWh)	1,112.82
Energy intensity (MWh / \$1,000 revenue)	0.89
Water consumption (tons)	1,928,831.77
Water intensity (tons / \$1,000 revenue)	1.99

- Notes: (1) The data cover the data centers and offices that VNET put into operation in 2021, which means it has a larger statistical scope than that in 2020.
 (2) Comprehensive energy consumption is calculated according to the conversion factor in the General Principles for Calculation of the Comprehensive Energy Consumption (GB/T 2589-2020) of the People's Republic of China.
 (3) The water mainly comes from municipal tap water, and there are no problems in obtaining suitable water source.
 (4) Packaging data are not applicable.

Greenhouse Gas Emissions

VNET conducted an organizational carbon emission inventory with 2021 as the base year. The carbon emission inventory covered the greenhouse gas emissions of Scope 1, Scope 2, and partial Scope 3 within the organizational and reporting boundaries of 2021. The greenhouse gases involved include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF₃), and sulfur hexafluoride (SF₆). The carbon emission inventory results show that the five types of greenhouse gas emissions involved during the reporting period are CO₂, N₂O, CH₄, HFCs, and SF₆.

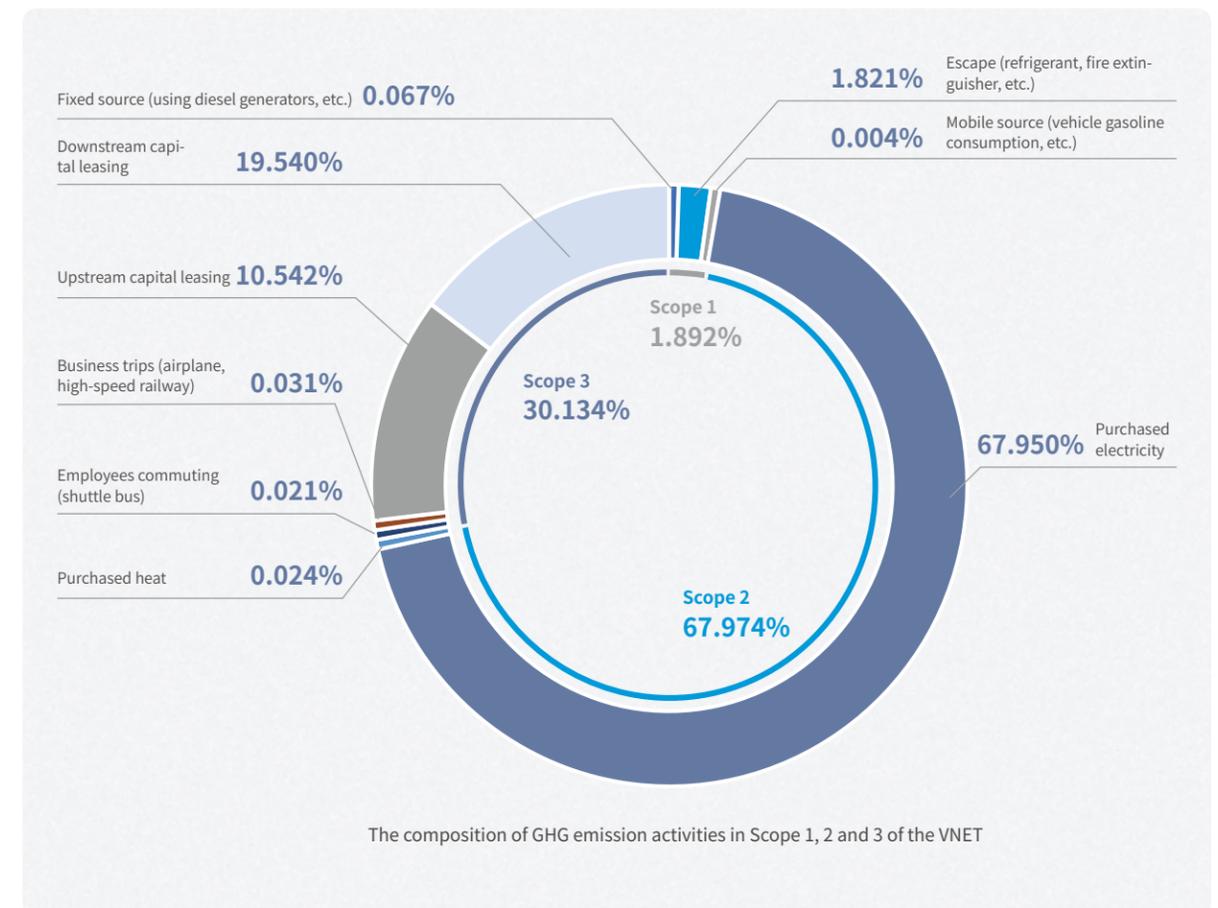


In accordance with the ISO14064-1:2018 Specification with Guidance at the Organizational Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals, the Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard, the Greenhouse Gas Protocol: Corporate Value Chain Accounting and Reporting Standard, the ISO14064-3:2019 Guidance for Verifying and Validating Greenhouse Gas (GHG) Statements, and other applicable

laws and regulations and relevant standards, VNET conducted the stocktaking of greenhouse gas emissions and removals in 2021, and also invited qualified third-party institutions for verification. The emission coefficients are derived from the 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories issued by the Intergovernmental Panel on Climate Change (IPCC), the China Energy Statistical Yearbook 2021 and other authoritative references.

Metric	2021
Total GHG emissions (ton CO₂e)	986,666.31
Scope 1 (ton CO ₂ e)	18,671.74
Scope 2 (ton CO ₂ e)	670,678.31
Scope 3 (ton CO ₂ e)	297,316.26
GHG intensity (ton CO₂e / \$1,000 revenue)	0.71

- Notes: (1) The data cover the data centers and offices that VNET put into operation in 2021, which means a larger statistical scope than that in 2020.
 (2) As companies approach Scope 3 in very different ways, greenhouse gas emissions per unit of GDP are calculated on the basis of the total of Scope 1 and 2.



Creating Core Value: Digital Empowerment



- Premium Products and Services
- Information Security Management

Over the past 25 years, VNET has been committed to building a core foundation of digital infrastructure through the initiation of the dual-core strategy of "wholesale + new retail" and the "SPEAR" plan.

VNET applied for
42 patents
47 software copyrights
139 trademarks in 2021
 Won **3** trusted cloud assessment certifications in 2021
0 customer complaints

Nationwide customer satisfaction after the call was **100**% for the third consecutive year

The rate of the hotline calls received within 25 seconds reached

96.95%

Ranked **1st** by Frost & Sullivan in the *Independent Market Research on China's Retail-type Third-party Carrier-neutral Data Center Industry*

Included in the *MSCI China Index*

Awarded *"Trusted Cloud Services Best Practice in Energy Industry"*

Awarded *"Cornerstone of Digital Transformation in the Greater Bay Area"*

Awarded *"Cloud Computing Center Technology Award and Talent Award"*

Awarded *"Top Cloud Connect Award"*

Awarded *"Outstanding IT and Cloud Computing Award"*

Awarded *"Asian Technology Excellence Award 2021"*

Awarded *"Excellent Hybrid Cloud Case 2021"*

Awarded *"Management and Operation (M&O) Certification"*

Leveraging the characteristic of being the core case of digital infrastructure, VNET formulated an innovative "new retail + wholesale" dual-engine strategy for its business models. On the "new retail" side, it is a combination of leveraging our conventional advantage in retail-cabinets-hosting business, well-established network connectivity and multi-cloud environment, as well as our innovative "cabinet, machine, cloud and network" integration achievements. Together, these capacities of ours help create the future generation of IT infrastructure, provide our clients with a customizable one-stop solution to their cloud-network integration needs, and meet clients' demand for all aspects of digital transformation starting at the infrastructural level. On the "wholesale" side, our data center business is geared toward top internet companies, especially top public cloud companies, by providing a one-stop data center service. Our capacity includes data center construction and technical services, long-term operation and maintenance services, as well as capital resource integration services. In sum, we provide an all-around, independently controlled, secured and credible data space that is customizable for our clients.

At the same time, VNET also launched the global collaborative innovation initiative "SPEAR" (Secure, Power, Edge, AI, Revolution) to promote a new power system from the high energy-consuming end. In the fields of "source, grid, load, and storage", VENT is actively participating in promoting the global zero-carbon cause and China's "dual carbon" goals. In 2021, the first demonstration project of the SPEAR plan has been implemented.

With the accelerated digital transformation of enterprises and society, VNET will continue to leverage its strengths and pursue technological innovation to drive the innovative development of China's digital economy under the new infrastructure.

Premium Products and Services

Product and Business Innovation

Guided by customer needs, VNET is always upgrading and tapping into new businesses to meet the increasing demand for data centers and cloud services throughout social digitalization. We give top priority to product quality to deliver premium, secure, and reliable services to customers.

As of the end of the reporting period, VNET owns 195 patents, including:

Inventions.....	137
Utility model patents.....	30
Design patents	28

In 2021, VNET applied for:

Patents.....	42
Software copyrights.....	47
Trademarks	139

Blue Cloud products

The advancement of cloudification is ushering in a new round of digital transformation in industries. Under the Group's development model of "One Body Two Wings", VNET Blue Cloud pioneered a one-stop service pattern for industry verticals during the entire life cycle of cloudification. In 2021, VNET Blue Cloud launched integrated services of clouds and terminals and independently developed the Blue Cloud Digital Asset Management Platform, which was underpinned by the self-developed cloud platform of mobile device management, to support digitalization and cloudification of enterprises in multiple scenarios.

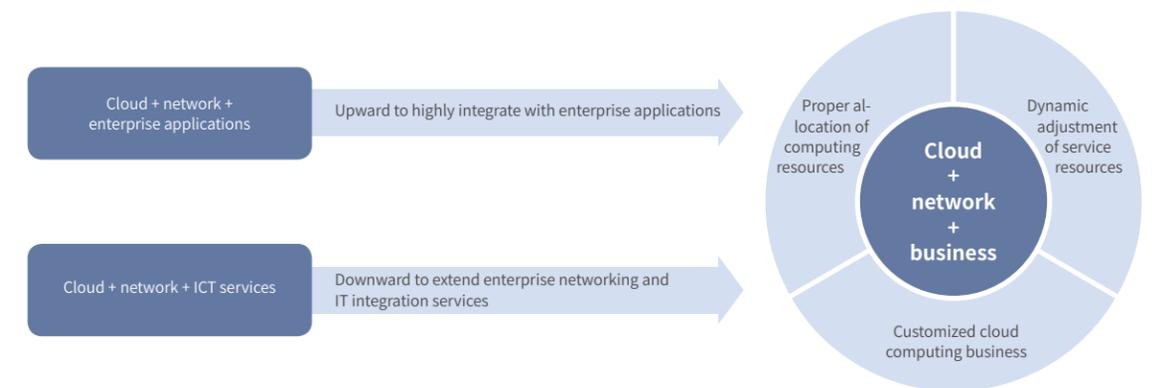
Cloud native and smart data center evolution

In the post-pandemic era, cloud computing has expedited its progress from the bottom-level approach of cloud migration to the more sophisticated landscape of cloud native. In 2021, NEOLINK Tech, a subsidiary of VNET, announced that it had officially completed the full acquisition of Tenxcloud, a leader in the field of cloud native applications and data platforms. VNET made a breakthrough in leveraging "IDC new retail + Cloud Native" to promote new infrastructure construction for our customers.

Cloud-network integration and innovation

As 5G speeds up the advancement from cloud-network collaboration to cloud-network integration in data centers, VNET continues to foster integration capabilities in this regard. Thanks to our strong network connectivity and our robust multi-cloud ecosystem, we have innovated IT infrastructure capabilities in the 5G era and worked with an increasing number of industry partners to fully empower customers from a wider field of sectors.

On December 1, 2021, the list of "2021 Asia Pacific Cloud & Datacenter Awards" hosted by W.Media, a leading technology media in the Asia-Pacific region, was officially announced. NEOLINK, a sub-brand of VNET, won the "2021 Outstanding IT and Cloud Computing Award" for its strong IT infrastructure and continuous innovation in cloud network integration.



Stability Assurance

VNET are dedicated to ensuring that customers enjoy both solid and reliable quality of service. With reference to the Information Technology Infrastructure Library (ITIL) and UPTIME management and operation standards, we have established a standardized operation and maintenance process to enhance system security and stability. We have adopted the Battery Monitoring System and Building Automation to monitor the operating parameters and operating status of

data centers in real time. In addition, they can diagnose and address faults, whilst ensuring the safe and stable operation of data centers. We pay particular attention to the assurance of operational stability during emergencies. This is highlighted by the formulation of relevant plans and corresponding work processes so that data centers can maintain stable operation under abnormal circumstances.

Case Ensuring "Double 11" operation

"Double 11" is an annual national shopping spree as well as an annual test for the comprehensive technical capabilities of IDC. In 2021, we provided our customers with a plan, where a cybersecurity team carried out checks of the equipment operation, supplies, and physical environments in advance. They also organized enhanced learning of the incident reporting process. During this important period, we strengthened inspections, increased inspection frequency, and followed guidelines to ensure daily zero fault

reports. We intensified the monitoring for all kinds of infrastructure, responded to and handled faults rapidly, and adhered to the principle of "ensuring operation before troubleshooting" to ensure that business would return to normal as soon as possible.

During "Double 11.11" in 2021, we ensured smooth business operations with no incidents or risks, delivering a satisfactory performance in this period.



Operational stability is the core metric in measuring the quality of our products and services. We have formulated comprehensive response plans for various contingencies to ensure the stable operation of the data center under various special circumstances.

In case of extreme weather such as power outage, high or low temperatures, blizzard, heavy rainfall, earthquake, heavy fog, strong

wind and other events as well as subsequent power outages, we have developed a series of emergency plans. These cover risk assessment, pre-warning and handling processes that provide professional guidance to cope with the increasingly acute impact of extreme weather events.

In response to large-scale power restrictions on the supply side, we take the following countermeasures:

- 1 • Enhancing communication with grid authorities to gain deeper insights and actively carrying out staggering power consumption
- 2 • Developing emergency plans and determining response plans in advance for quick access to the emergency power system
- 3 • Continuously promoting the application of energy storage technologies in data centers and the implementation of large-capacity energy storage projects to reserve storage in case of power restrictions on equipment rooms on a staggered basis
- 4 • Gradually increasing the proportion of green electricity, such as wind and photovoltaic energy, used in equipment rooms, gradually reducing and subsequently eliminating the possibility of facing staggered power restrictions in equipment rooms

Customer Services

VNET prioritizes customer service improvements in addition to product reliability. We offer superior after-sales services that feature faster response, improved service, and enhanced customer satisfaction.

In 2021, we optimized the process of the customer satisfaction survey to cover more business units and synchronized relevant data to the management in real time so that service quality could be improved under an enhanced oversight. Additionally, the service

process and response have been optimized as our customer service team received technical and soft skills training, developed tools and other ways to raise efficiency. In 2021, we received no customer complaints, maintained 100% national customer satisfaction after phone calls for the third consecutive year whilst ensuring that 96.95% of the hotline calls were received within 25 seconds.



Information Security Management

VNET takes "standardized management, security and reliability, continuous improvement, customer trust" as its information security policy. We believe that only continuous endeavors in information security enable us to provide high-value products and services that are trusted by customers. This minimizes our business risks while maximizing investment returns along with business opportunities. In 2021, we witnessed no major information leaks or breaches relating to customer privacy and information security.

Building the System

In 2021, VNET continued to strengthen the construction and implementation of the information security management system and received several international certifications, including Information Security Management System (ISO 27001) and Information Technology Service Standards (ITSS), to provide system security for information assets.

VNET's information security management objectives	Achieved or not
No major information security incidents	✓
No damage or loss of information assets	✓
Continuous and reliable operation of business systems	✓
No leaks of confidential business information	✓
No more than one customer confidentiality complaint per year	✓
No operational disruptions in large IDCs	✓
No network outages in large IDCs	✓

Information security management architecture

VNET has established a Compliance and Information Security Management Committee, which is the highest leading body for the management of compliance and information security. The Compli-

ance and Information Security Working Group under the committee is responsible for daily information security management with the primary goal of ensuring business legality, compliance, security and alignment as well as efficient operations.

In strict accordance with the ISO 27001 Information Security Management System, we have developed the Compliance and Information Security Management Regulations that clearly outlines the overall guidelines and objectives. On top of this, we have refined the Information Security Management System Guidelines, the Information Security Risk Management Procedures and other regulations to clarify the responsibilities and guide the practices of local businesses and operation locations.

In relation to risk management, the Group has established a mechanism to identify and manage information security risks. This regularly assesses the risks and rectifies those that are deemed unacceptable. As for compliance management, our Compliance Department has established a smooth communication mechanism with various supervision authorities, such as the Ministry of Industry and Information Technology (MIIT), the Cyberspace Administration of China (CAC), and the Ministry of Public Security. This enables VNET to keep track of and evaluate changes in the legal environment, based on which targeted management practices can be adopted in partnership with other departments.

Certification for Information Security Management System

In 2021, VNET continued to promote the certification of information security management systems.

Currently, our data centers are certified as level 3 by the China Cybersecurity Review Technology and Certification Center (CCRC) for information system security integration service, information security emergency response service, and information security risk assessment service. In addition, we are ISO 27001 certified in our main operating regions.



Information security service qualification certificates

Trusted Cloud Services (TRUCS) certification is the only recognized certification system pertaining to cloud services in China. It is jointly developed by the Data Center Alliance, the Cloud Computing Open Source Cloud Alliance for Industry and CAICT. With professional compliance technology and operational strength, VNET Blue Cloud has been TRUCS-certified since the first batch of certificates were issued in 2014. To date, Blue Cloud has received 11 TRUCS certificates and won the "2020-2021 Best Practice of Trusted Cloud Services for the Energy Industry" Award.

Privacy and Data Security Protection

VNET has utilized world-leading encryption methods, protocols, and algorithms to ensure that customer data is securely transmitted and confidentially stored within our infrastructure. We have applied a variety of security protection technologies and methods to fully secure the customer cloud computing environment. While discussing technology types with our customers in the early phase of a project, we delved into their requirements on information security to customize cloud platform solutions. This includes, but is not limited to, the selection of cloud platforms and security components as well as suggestions on security strategies and network isolation.

In addition, VNET formulated the Regulations on Access Management Systems, the Office Network Security Access Management Regulations, the Remote Access Permission Management Regulations and other regulations to standardize security operations by employees in different working environments.

Fostering Culture

VNET is fully aware that the implementation of information security management does not only depend on the continuous improvement of systems, mechanisms, and technologies but also relies on the full engagement of employees. We highly value fostering an information security culture and awareness among our employees and offering targeted training covered multiple dimensions such as information security regulations, concepts, systems and technologies. This aims to prepare them for different risks in different positions that they may face. In 2021, 100% of our employees received training on information security.

Formulating Industry Standard

As an industry leader, VNET pursues the overall improvement of information security in the entire industry. We have maintained close ties with the China Electronics Standardization Institute (CESI), the National Information Security Standardization Technical Committee, CAICT, and the Cloud Computing Standards and Open-Source Promotion Committee, to deeply get involved in formulating relevant policies and standards.

In 2021, we participated in the preparation of national, industrial and group standards such as the Information Technology Service - Grade Criteria for Business Continuity of Data Center and the Cloud User Data Protection Capability Assessment Method - Part 2: Private Clouds.

Network access

- Employees must follow all the regulations on equipment, networks, accounts, IPs, and firewalls

Operating equipment

- Data loss prevention (DLP) terminals are installed on all staff devices to ensure any programs stored inside the computer can be managed before, during, and after an event

Physical environment

- Data centers are designed under national grade-A standards and meet the requirements on physical environment security at classified protection level 3. Furthermore, we incorporate differentiated customer requirements to provide physical security management equipment at a higher level

Risk management

- The Group has established routine operation and maintenance response processes. This includes regularly identifying potential information security risks and deploying regular measures such as monthly terminal patching and quarterly server patching to continuously improve risk management

Emergency response

- The Group has established a response mechanism for emergency/major information leakage incidents to enable personnel to respond quickly to minimize the potential adverse impact

Honoring Corporate Responsibility: Mutual Growth



- Diverse and Inclusive Workplace
- Broad Development Platform
- Reciprocal Partnership
- Responsible Corporate Citizen

VNET adheres to a people-centered philosophy and is committed to creating an inclusive and diverse culture for our employees and communities.

The total number of our employees in 2021 reached

3,221

Percentage of female employees in management positions was

28%

Ratio of employee returned to work in 2021 reached

100%

Total number of VNET E-Learning courses reached

350

Average training hours per employee reached

19.4 hours

Coverage of VNET anti-corruption training for directors, management, and employees reached

100%

Total amount paid for employees to receive certifications was RMB

140,000

0 work-related fatalities

Total number of hours volunteered for tree-planting event was

244 hours

Diverse and Inclusive Workplace

Talent is the fundamental driving force of corporate development. VNET consistently adheres to a people-centered philosophy, fully respects and strictly protects employee rights and interests. We are also committed to offering them an equal, comfortable, and safe workplace.

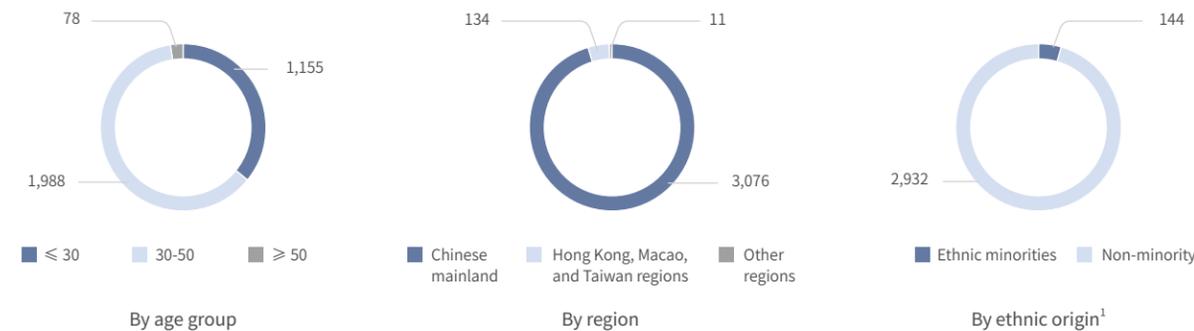
Protecting Employee Rights and Interests

VNET strictly complies with the Labor Law of the People's Republic of China, the Regulations Banning Child Labor, and other relevant laws and regulations that significantly affect the standardization of our employee management. As a signatory to the UNGC, we adhere to international treaties such as the Declaration on Fundamental Principles and Rights at Work established by the International Labor Organization (ILO). We compiled the Employee Manual and Implementation Measures on Human Resources Management in the VNET

Group and Regions to regulate the protection of employee rights and interests.

In VNET, there is no discrimination in the recruitment, appointment, promotion, and turnover of employees based on race, ethnicity, place of origin, gender, age, and marital status. We prohibit child labor and forced labor. We ensure equal pay for equal work regardless of gender and promote the employment of people with disabilities to implement equal employment rights. If illegal employment is found, we will immediately take serious actions against those responsible for the work based on the severity and report breaches to the labor security administration. In the case of child labor issues, we will actively render assistance in contacting their legal guardians upon occurrence. During 2021, there were no incidents of human rights violations, employee discrimination, and employment of child labor.

Employment snapshot in 2021					
By management level and gender		Total	Female	Male	Female percentage
	Total	3,221	820	2,401	25%
	Management	888	245	643	28%
	Non-management	2,333	575	1,758	25%



1. Chinese mainland included only.

Recruitment and turnover snapshot in 2021				
By gender		Total	Female	Male
	Number of new hires	1,089	239	850
	Percentage of new hires (%)	100%	22%	78%
	Number of turnover	757	212	545
	Turnover rate (%)	21%	22%	20%

Recruitment and turnover snapshot in 2021				
By age group		≤ 30	30-50	≥ 50
	Number of new hires	588	487	14
	Percentage of new hires (%)	54%	45%	1%
	Number of turnover	322	413	22
Turnover rate (%)	25%	18%	22%	
By region		Chinese mainland	Hong Kong, Macao, and Taiwan regions	Other regions
	Number of new hires	1,054	29	6
	Percentage of new hires (%)	97%	3%	1%
	Number of turnover	706	50	1
Turnover rate (%)	20%	28%	8%	

Promoting Gender Equality

VNET actively implements gender equality policies to build gender-friendly work systems and environments. We pay attention to the challenges and difficulties that female employees may face in the workplace and offer them necessary support. At the beginning of 2022, we became a signatory of the Women's Empowerment Principles (WEPs) to work with global enterprises in improving gender equality and unleashing the potential of women.

VNET sets the salary structure of equal pay for equal work and manages fair and reasonable remuneration regardless of gender or other factors. We provide paid marriage, maternity and breastfeeding leave as well as leave on Women's Day in accordance with relevant laws and regulations. Employees who have returned from maternity leave are entitled to equal pay for equal work.



In 2021, the ratio of male to female employees is

1:1.1

in terms of the median of monthly salary

VNET thoroughly considers the needs of those employees that have childcare obligations and strictly implements parental leave policies to allow for more flexible working hours for breastfeeding employees. In 2021, we reconstructed the nursing room to make it more comfortable, private, sanitary and convenient for those that breastfeed.

In 2021, the ratio of male to female employees is

1.03:1

in terms of the average of monthly salary



Parental leave ¹ snapshot in 2021				
Employees that were entitled to parental leave		3,221		
By gender		Total	Female	Male
	Employees that took parental leave	105	43	62
	Employees that returned to work after parental leave ended (%)	100%	100%	100%
	Retention rates of employees that took parental leave (%) ²	74%	59%	84%

1. Parental leave includes both maternity leave and paternity leave. An extended parental leave has been promoted nationwide since November 2021 and is not included in the table.
2. Retention rate refers to the percentage of employees who have returned to work for us after the parental leave for 12 consecutive months. The data is collected from January 1, 2020 to December 31, 2020.

Facilitating Effective Communication

VNET is committed to maintaining effective employee communication mechanisms for positive relations. Our employees can make their voice heard via online and offline open channels, such as suggestion boxes, hotlines, labor unions, the Internal Control Department, and the Audit Department, the Integrity Department, and HR business partners (HRBP). Subsequently, we respond quickly in accordance to the actual situation and file records at each level, thereby catering to their needs while improving our systems and policies.

VNET has engaged in the full protection of employees' rights to information, participation, privacy, expression, and supervision. We have conducted special training courses, online discussions, and inspections for the protection of rights and interests, tracked and supervised their rectifications. We guarantee employees' legitimate right to fair appeal before they are subject to any internal disciplinary actions. Any form of corporal punishment, inhuman or humiliating treatment is strictly prohibited.

We have a labor union to represent the interests of our employees and protect their legitimate rights and interests. The union oversees the protection of employee rights and interests, participates in the formulation of corporate rules in close relation to employees' interests in their footing, and provides suggestions to the management on enhancing employee diversity, safeguarding occupational health and safety and improving employee welfare.

In addition, we monitor employee engagement annually. At the beginning of 2022, we conducted an engagement survey targeting all employees to collect their opinions and suggestions as well as understand their morale and work status.

Caring for Physical and Mental Health

VNET aims to create a comfortable and safe workplace for our employees. In strict compliance with occupational health and safety laws and regulations, we are Occupational Health and Safety Management System (ISO 45001) certified and make continuous efforts to improve our systems.

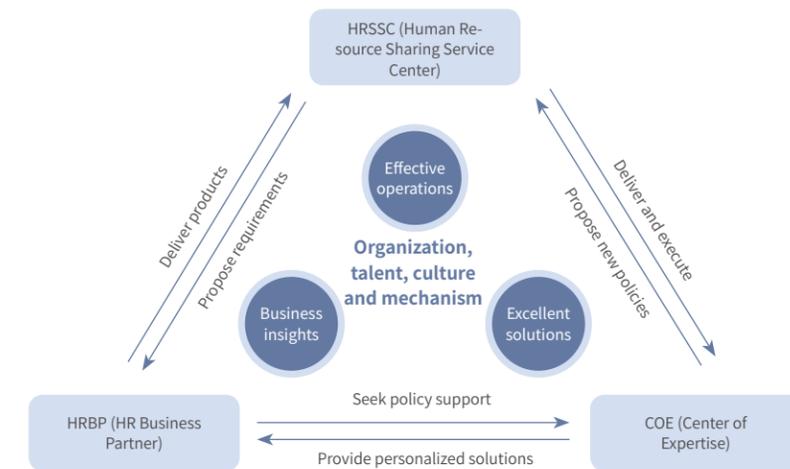
We provide and maintain devices, equipment and work systems for the safety and health of our employees. Safety drills and fire safety training are organized regularly to reduce the possibility of accidental injuries and enhance employees' safety awareness. For employees exposed to occupational hazards, we offer protective equipment whilst identifying and rectifying hidden dangers in a timely manner to ensure the safety of our employees. We also care for contractors' employees during project construction. In particular, we sign a safety agreement with contractors that require subcontractors to follow our safety production management rules, assess occupational health and safety risks in projects, and require their staff to participate in safety education and training to enhance safety awareness.

In addition, we have set up psychological counseling rooms equipped with automated external defibrillators (AEDs) for employees in the office area and organized lectures on physical and mental well-being as well as the first aid. We provide regular physical examinations for our employees and take practical measures to ensure they are healthy. During the COVID-19 outbreak, we made relentless efforts to protect the health of employees such as disinfecting offices, screening out risk areas and distributing protective supplies.

Occupational health and safety snapshot			
	2021	2020	2019
Number of work-related fatalities	0	0	0
Work-related fatalities (%)	0	0	0
Number of working days lost due to work-related injury	1	0	1

Broad Development Platform

In continuous efforts to improve human resources management, VNET has built a three-pillar system to understand and meet the needs of the business lines whilst supporting routine affairs of employee management and the long-term talent development strategy.



Nurturing Talent

VNET places great emphasis on employee development. We have formulated the Employee Training Management System and established a multi-level employee training system. This is to ensure that our employees are trained according to their development stages and our talents can gain support for their career development.

We have built the VNET E-Learning platform to cultivate talents for each business line via digital means and achieve knowledge co-creation and sharing. The platform focuses on nurturing the leadership skills, professional skills, and general skills as well as delivering resource integration to tailor learning maps for each employee. We have engaged in all business lines in building the platform and

continuously improved the online learning course system through resource co-creation. Currently, a total of 350 premium courses have been launched online.

In addition to the internal training system, VNET provides reimbursement for all employees to pursue academic degrees and professional certifications. They receive expense reimbursement for external training and certification exams required for their positions, including the Senior Network Engineer, the Project Management Professional (PMP), and the Human Resource Manager. In 2021, we arranged 16 external training sessions and reimbursed RMB 140,000.



62,474^{hours}

Total training hours during the reporting period

19.40^{hours}

Average training hours per employee

Training snapshot in 2021				
By gender		Total	Female	Male
	Training coverage (%)	100%	25%	75%
	Average training hours	19.40	17.81	19.94
By management level		Total	Management	Non-management
	Training coverage (%)	100%	27%	73%
	Average training hours	19.40	13.99	21.45

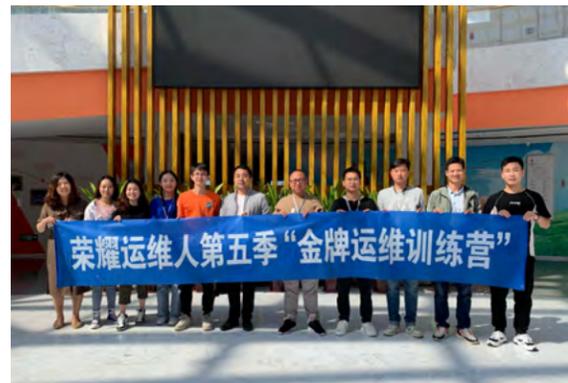
VNET applies the formal talent pipeline development strategy to actively develop new pools of talent that have great potential. We regularly conduct featured training programs for different positions to enhance their comprehensive abilities and professional skills.

For the cultivation of managerial talent, we selected a total of 49 junior managers and core employees into the young talent training program in 2021. This systematically empowered them by stages throughout their leadership development and comprehensively evaluated against a number of metrics during their learning journey. VNET Blue Cloud provides talent with opportunities for mutual learning and cross-disciplinary exchange by launching the leadership development program, Elite Plan.

We created the Honorable Operation and Maintenance Expert Program series for technical talents. This included technical competitions and training camps for operation and maintenance personnel to enhance their professional skills and exchange technical ideas for the overall improvement of all. As of 2021, the program entered its 5th year and attracted over 1,400 engineers from 22 teams in the knowledge and skill competition. They came from all over China to compete for themselves and their teams, both online and offline modes. Many of them showed excellent professional competence, extensive knowledge and enthusiasm for learning, making them the perfect candidates for our new pool of engineers. Those who made it to the national finals entered the premium operation and maintenance training camp for more advanced courses, learning model visits, and practical exchanges.



The fifth session of the Honorable Operation and Maintenance Expert Program



Case The first training camp of Blue Cloud Elite Plan

In 2021, VNET Blue Cloud organized the first training camp of Elite Plan for middle managers and employees with great potentials. The six-month training program helps trainees expand their horizons, inspire thinking and enhance management skills through three sessions with 10 courses, 12 tasks with 5 specific themes, as well as hybrid training modes such as online learning, sand table exercises, action learning, and executive coaching.



Promotion and Incentive Program

VNET has established a comprehensive job level structure and promotion mechanism to ensure equal opportunities for all. We value the long-term performance of our employees and manage their promotions based on their tenure, personal performance, business skills, managerial skills and our business needs. In terms of career

development, we offer a dual-path mode in which employees are free to choose either the management or professional path based on their interests and career aspirations. In 2021, we re-classified job families to further clarify the paths for different categories of talents and increase their career potential.



We have also set up a comprehensive compensation and performance management system to continuously attract and motivate outstanding personnel with competitive salaries as well as a fair and effective performance evaluation mechanism. We regularly conduct performance appraisals for all employees in compliance with the Performance Management Code, aligning the appraisal results with personal development and incentives. This resulted in higher incentives for high-performing employees as well as the motivation for creativity and initiative for all. We have quarterly performance and project bonuses for functional and business departments, re-

spectively, as well as year-end bonuses for all. At the same time, we shared corporate achievements with our employees and offer long-term incentives such as stock options for eligible employees.

We ensured that performance appraisal results were clearly and transparently communicated to employees and allowed them to submit written appeal requests to the human resources center if they disagreed with or refused to accept the results. They would be informed of the performance calibration results after review, investigation and verification by relevant departments.



Welfare System

VNET has built a robust welfare system. In addition to social insurance and welfare prescribed by national and regional regulations, we provided employees with six categories of supplemental benefits: exclusive benefits, anniversary benefits, employee care benefits, health and safety benefits, recreational benefits, and special holidays:



Case "Home of Staff" library upgrade and improvements

We provided a comfortable and relaxing workplace for our employees. In May 2021, we upgraded and improved the staff library to provide better recreational environment. We also continued to increase the number of books that exceeded 3,000 for learning and relaxation purposes for employees.



"Home of Staff" library

Case Basketball game

To enrich the leisure activities of our employees, improve their physical fitness, and strengthen their communication and exchange, VNET held the "Wingspaning Cup" basketball game, offering them more opportunities to exercise and relieve stress after work.



The "Wingspaning Cup" basketball game

Reciprocal Partnership

Closed-loop Procurement Management

VNET boasts diverse business partners and values procurement process management. In strict compliance with national laws and applicable industry guidelines, we have developed the Regulations on Procurement Management, the Regulations on Supplier Management, and the Code of Conduct for Procurement Personnel for responsible procurement, which committed to establishing to mutually beneficial cooperation with suppliers for the long term. As of the end of the reporting period, we had 2,145 suppliers, including 3 in Hong Kong, Macao, and Taiwan and 3 outside of the Chinese mainland, Hong Kong, Macao, and Taiwan.

We identify, prevent, and control potential risks in all aspects of procurement. We assess suppliers in terms of their financial risks, business ethics, EHS management, quality management, and etc. throughout our review process from multiple perspectives. This involves shortlisting, on-site inspection, internal evaluation and test, public announcement of the shortlisting, and selection.

We regularly review existing suppliers to screen out premium candidates based on service awareness, product quality and capability to fulfill obligations. Substandard suppliers are required to conduct rectification and would be eliminated if the rectifications proved to be below our standards.

Sustainable Supply Chain

VNET is committed to building a sustainable supply system, aiming to safeguard procurement needs and ensure obligation fulfillment while actively urging our suppliers to improve sustainability. In each work process of the supplier management, we incorporate considerations on their ESG risks and focus on their performance in environmental protection and low carbon, information security, labor rights and interests, occupational health and safety, as well as honesty and integrity.

- Environmental protection and low carbon: We prefer suppliers with ISO 14001 and sound carbon management
- Information security: We sign the contracts and the Supplier Confidentiality Agreement with suppliers who have confirmed the partnership with us to clarify information security responsibilities and confidentiality obligations
- Labor rights and interests: We strictly prohibit suppliers from employing child labor and forced labor, and actively protect and promote the legitimate rights and interests of employees across the supply chain
- Occupational health and safety: Suppliers are required to comply with applicable safety regulations, establish a sound occupational health protection system, and provide health and safety training to their staff when appropriate
- Honesty and integrity: We conduct anti-corruption training for procurement personnel. We also require all suppliers to sign the Anti-bribery Commitment Letter and synchronize the information of dishonest suppliers to the database of the China Enterprise Anti-Fraud Alliance

Responsible Corporate Citizen

VNET actively fulfills social responsibilities as a corporate citizen and leverages our industrial strengths so that local communities can benefit from our operations. In 2021, we carried out various public welfare projects pertaining to education, rural revitalization, and ecological protection.

Cultivating Smart Operation and Maintenance Talent

In contribution to the "New Engineering" education strategy, VNET launched the "Smart Operation and Maintenance" talent training Alliance with China Academy of Information and Communication Technology (CAICT). We also launched the first Employment and Education Forum for Universities in China and the cooperative ecosystem of "Join Actions on Employment and Education". We aim to partner up with more educational institutions, including universities and vocational colleges, in their plans of creative entrepreneurship development to empower graduate traineeship programs and joint training programs for the staff that drive the further implementation of industry-education integration.

Serving Digital Rural Revitalization

In response to the national strategy of rural revitalization, VNET led the interconnected and innovative community of the digital economy in advocating the "Digital Rural Revitalization - Reshaping Top 100 Brands" series of joint actions to promote the non-profit cause of serving the rural revitalization strategy. As part of these actions, we included the Wuyi Mountains and Wuyi Tea in our pilot project to explore the coordinated model of "Tea Culture + Tea Technology + Tea Industry" and best practice of digital economic development for rural revitalization.



▲ The tree-planting event

The meeting of the joint action ▼



Empowering Green Ecological Construction

To respond to the national call of ecological civilization construction, VNET organized a tree-planting event named "Guarding 'Clear Waters and Green Mountains for Ecological Interconnectivity'" in 2021. During the event, our community of employees spent 244 hours planting 125 cypress trees. This made a positive contribution to greening up the mountain landscape and protecting the ecological environment.

Caring for the Health of Mountain-area Girls

At the beginning of 2022, VNET organized a charity sale themed "Empower Her for Mutual Growth", where second-hand items were sold and then the funds raised were partly used to buy feminine hygiene products for more than 3,000 female students in the mountainous areas of Dahua County, Guangxi. We hope that this type of event will help young women in less economically developed areas to overcome hygiene problems and inspire more companies to carry out similar efforts.

◀ The charity sale event

Appendix

About this Report

Introduction

This Report offers full visibility into the ESG performance and management measures of VNET Group, Inc. and its affiliates in 2021, with a special focus on the concerns of key stakeholders.

Reporting Period

Unless otherwise specified, this Report covers information and data concerning the Group from January 1, 2021 to December 31, 2021. Part of the content is beyond the above period. We regularly review the reporting period to ensure that this Report covers the significant impact of the overall business portfolio of the Group.

Compilation Basis

Global Sustainability Standards Board, GSSB	<i>GRI Sustainability Reporting Standards: Core Option</i>
Hong Kong Exchanges and Clearing Limited, HKEx	Environmental, Social and Governance Reporting Guide
Sustainability Accounting Standards Board, SASB	SASB Standards for Software & IT Services
Task Force on Climate-related Financial Disclosures, TCFD	The TCFD Recommendations on Climate-related Financial Disclosures
National Association of Securities Dealers Automated Quotations, NASDAQ	ESG Reporting Guide 2.0
International Initiatives	Guidance on Social Responsibility (ISO 26000)
	Ten Principles of the United Nations Global Compact
	Sustainable Development Goals, SDGs

Data Source and Reliability Assurance

This Report follows the principles of materiality, quantitative, balance and consistency. Data sources used in this Report include public data of government departments, internal documents and statistical reports of the Group, as well as third-party questionnaires. This Report is released after being approved by the Board of Directors and the Group undertakes that this Report does not contain any false or misleading statements or omissions of material facts herein.

Third-party Assurance

The Report has been authenticated with reasonable assurance by Bureau Veritas Certification (Beijing) Co., Ltd under the commission of VNET.

Access to this Report

The Chinese and English versions of this Report are available at www.vnet.com. Should there be any discrepancy between the Chinese and English versions, the Chinese version shall prevail. If you have any questions or suggestions about this Report, please email to esg@vnet.com. Your feedback will help us further improve this Report and our ESG performance.

GRI Index

The table below indicates the location of disclosure issues in the 2021 Environmental, Social and Governance Report of VNET. This Report is compiled in accordance with the GRI Standards: Core Option. Regarding to compliance with GRI standards, there is not authenticated with externally assurance.

GRI101: General Disclosure 2016

GRI102: General Disclosure

GRI Standards and Disclosure	Page	Additional information (including UN Global Compact Principles) and abridged descriptions
102-1 Name of the organization	P4	VNET Group, Inc. (NASDAQ: VNET)
102-2 Activities, brands, products, and services	P4	VNET is a leading carrier-neutral data center service provider in China. VNET provides cyberspace infrastructure services, including hyper-scale IDC solutions and new-generation IDC retail services. We also strive to deliver comprehensive IT solutions covering value-added cabinets, network services, bare metal services, hybrid cloud services, and operation and maintenance services.
102-3 Location of headquarters	-	No.10, Jiuxianqiao East Road, Chaoyang District, Beijing, China
102-4 Location of operations	P4	VNET operates more than 50 data centers in over 30 cities across China.
102-5 Ownership and legal form	-	VNET listed on the Nasdaq
102-6 Markets served	-	VNET has provided solid business foundations for over 6,000 enterprises across the globe, including nearly 100 high-growth industry leaders.
102-7 Scale of the organization	-	See the 2021 Form 20-F for details.
102-8 Information on employees and other workers	P42-43	<Principle 6>
102-11 Precautionary Principle or approach	P26, 28	<Principle 7>
102-12 External initiatives	-	Task Force on Climate-related Financial Disclosures (TCFD)
102-13 Membership of associations	-	Enterprise Anti-Fraud Alliance United Nations Global Compact (UNGC) Women's Empowerment Principles (WEPs) of UN Women
102-14 Statement from senior decision-maker	P3	
102-15 Key impacts, risks, and opportunities	-	The full report and the "Strategy" sections of the chapters include a description of key impacts, risks and opportunities.
102-16 Values, principles, standards, and norms of behavior	-	<Principle 6, 10> VNET's values: Customer, Commitment, Collaboration, Innovation Code of Conduct: Employee Manual contains provisions about compliance and ethical behaviors Integrity and Whistleblowing Rewards Program Integrity Conversation System Integrity Inspection System Management Measures for the Handling of Whistleblowing and Complaints Gift Registration System
102-17 Mechanisms for advice and concerns about ethics	P10-13	<Principle 10>
102-18 Governance structure	P8	In accordance with VNET's Articles of Association, the Board of Directors has decision-making authority on major matters. Special committees under the Board oversee matters, decisions and consultation on specific affairs of the Group.
102-19 Delegating authority	P14	The Board of Directors delegates the Strategic Development Committee to oversee VNET's sustainability and ESG-related work to better manage the implementation of the Group's ESG agendas.

GRI Standards and Disclosure	Page	Additional information (including UN Global Compact Principles) and abridged descriptions
102-20 Executive-level responsibility for economic, environmental, and social topics	P14	
102-21 Consulting stakeholders on economic, environmental, and social topics	P16	
102-22 Composition of the highest governance body and its committees	-	See the 2021 Form 20-F for details.
102-23 Chair of the highest governance body	-	Mr. Sheng Chen
102-24 Nominating and selecting the highest governance body	-	See the 2021 Form 20-F for details.
102-25 Conflicts of interest	P12-13	
102-30 Effectiveness of risk management processes	P9	
102-31 Review of economic, environmental, and social topics	P17	
102-32 Highest governance body's role in sustainability reporting	-	The Board of Directors fully oversees ESG-related matters of VNET to review and approve the release of this Report.
102-40 List of stakeholder groups	P16	
102-41 Collective bargaining agreements	-	<Principle 3> All local employees are members of trade unions. Collective bargaining agreements cover all employees.
102-42 Identifying and selecting stakeholders	P16	
102-44 Key topics and concerns raised	P17	
102-45 Entities included in the consolidated financial statements	-	See the 2021 Form 20-F for details.
102-46 Defining report content and topic Boundaries	P52	
102-47 List of material topics	P17	
102-48 Restatements of information	-	N/A
102-50 Reporting period	P52	January 1 to December 31, 2021
102-51 Date of most recent report	-	April 2021
102-52 Reporting cycle	P52	This Report is an annual report.
102-53 Contact point for questions regarding the report	P52	If you have any doubts and suggestions on this Report, please send emails to esg@vnet.com.
102-54 Claims of reporting in accordance with the GRI Standards	-	This Report is compiled in accordance with the GRI Standards: Core Option.
102-55 GRI content index	-	See this appendix for details.
102-56 External assurance	P58-59	See Appendix: Independent Assurance Report for details.

GRI Standards	Disclosure	Page	Additional information (including UN Global Compact principles) and abridged descriptions
GRI 201: Economic Performance			
GRI 103: Management approach disclosures	How it manages economic performance	-	
Topic-specific disclosures	201-1 Direct economic value generated and distributed	-	Subject to confidentiality, our revenue, operating cost, employee remuneration and benefits, payments to capital providers and governments shall not be disclosed. Such information is commercially and competitively sensitive and will therefore not be disclosed.
	201-2 Financial implications and other risks and opportunities due to climate change	P24-25	
GRI 202: Market Presence			
GRI 103: Management approach disclosures	How it manages market presence	P37	<Principle 6>
GRI 203: Indirect Economic Impacts			
GRI 103: Management approach disclosures	How it manages indirect economic impacts	-	
Topic-specific disclosures	203-1 Infrastructure investments and services supported	P50-51	In 2021, VNET initiated the charitable cause to serve rural revitalization, to support digital economy by exploring digital development models of rural industries. In addition, our community volunteering activities totaled 244 hours.
GRI 205: Anti-corruption			
GRI 103: Management approach disclosures	How it manages anti-corruption	P12-13	<Principle 10>
Topic-specific disclosures	205-2 Communication and training about anti-corruption policies and procedures	P13	VNET has put in place sound anti-corruption and anti-bribery measures. This boundary of topic covers our employees, businesses and clients. Training on compliance covers all employees.
	205-3 Confirmed incidents of corruption and actions taken	P13	VNET received two valid reports that were investigated and handled in 2021.
GRI 206: Anti-competitive Behavior			
GRI 103: Management approach disclosures	How it manages anti-competitive behavior	-	
Topic-specific disclosures	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	-	No relevant actions involved during the reporting period.
Environmental			
GRI 302: Energy			
GRI 103: Management approach disclosures	How it manages energy	P20-23 P27-29	<Principle 7, 8, 9>
GRI 303: Water and Effluents			
GRI 303: Management approach disclosures	303-1 Interactions with water as a shared resource	P28-29	<Principle 7, 8, 9>
	303-2 Management of water discharge-related impacts	P28	
Topic-specific disclosures	303-3 Water withdrawal	P30	
GRI 304: Biodiversity			
GRI 103: Management approach disclosures	How it manages biodiversity	P26	<Principle 7, 8, 9>
Topic-specific disclosures	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	-	The Group has no operational sites managed in or adjacent to, protected areas and areas of high biodiversity value outside protected areas.
GRI 305: Emissions			
GRI 103: Management approach disclosures	How it manages emissions	P27-31	<Principle 7, 8, 9>

GRI Standards	Disclosure	Page	Additional information (including UN Global Compact principles) and abridged descriptions
Topic-specific disclosures	305-1 Direct (Scope 1) GHG emissions	P31	
	305-2 Energy indirect (Scope 2) GHG emissions	P31	
	305-3 Other indirect (Scope 3) GHG emissions	P31	
	305-4 GHG emissions intensity	P31	
	305-5 Reduction of GHG emissions	-	In 2021, the scope of VNET's GHG statistics has been expanded compared with 2020, so the GHG emission reduction in 2021 is not calculated.
	305-6 Emissions of ozone-depleting substances (ODS)	-	No ozone-depleting substances (ODS) emissions involved in operations of the Group.
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	-	The major gas emissions of the Group are mainly GHG emissions, no nitrogen oxides (NOx) emissions involved in direct operations.
GRI 306: Waste			
GRI 306: Management approach disclosures	306-1 Waste generation and significant waste-related impacts	P29	<Principle 7, 8, 9>
	306-2 Management of significant waste-related impacts	P29	
GRI 307: Environmental Compliance			
GRI 103: Management approach disclosures	How it manages environmental compliance	P26-29	<Principle 7, 8, 9>
Topic-specific disclosures	307-1 Non-compliance with environmental laws and regulations	-	No violations of environmental laws and regulations during the reporting period.
GRI 308: Supplier Environmental Assessment			
GRI 103: Management approach disclosures	How it manages supplier environmental assessment	P49	<Principle 1, 2, 3, 4, 5, 6, 7, 8, 9, 10>
Topic-specific disclosures	308-1 New suppliers that were screened using environmental criteria	P49	
	308-2 Negative environmental impacts in the supply chain and actions taken	-	Substandard suppliers are required to conduct rectification and would be eliminated if the rectifications proved to be below our standards.
Social			
GRI 401: Employment			
GRI 103: Management approach disclosures	How it manages employment	P42	<Principle 3, 4, 5, 6> The talent management of VNET includes talent attraction, encouragement, incentive, management, cultivation and rewards.
Topic-specific disclosures	401-1 New employee hires and employee turnover	P42-43	
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	P48	
	401-3 Parental leave	P44	
GRI 403: Occupational Health and Safety			
GRI 403: Management approach disclosures	403-1 Occupational health and safety management system	P44	
	403-5 Worker training on occupational health and safety	P44	
	403-6 Promotion of worker health	P44	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	P44	
Topic-specific disclosures	403-8 Workers covered by an occupational health and safety management system	P44	
	403-9 Work-related injuries	P44	
GRI 404: Training and Education			
GRI 103: Management approach disclosures	How it manages training and education	P45-47	<Principle 6>

GRI Standards	Disclosure	Page	Additional information (including UN Global Compact principles) and abridged descriptions
Topic-specific disclosures	404-1 Average hours of training per year per employee	P46	
	404-2 Programs for upgrading employee skills and transition assistance programs	P45-47	
	404-3 Percentage of employees receiving regular performance and career development reviews	P45-47	
GRI 405: Diversity and Equal Opportunity			
GRI 103: Management approach disclosures	How it manages diversity and equal opportunity	P42-43	<Principle 3, 4, 5, 6>
Topic-specific disclosures	405-1 Diversity of governance bodies and employees	P42-43	
	405-2 Ratio of basic salary and remuneration of women to men	P43	
GRI 406: Non-discrimination			
GRI 103: Management approach disclosures	How it manages non-discrimination	P10	<Principle 6>
Topic-specific disclosures	406-1 Incidents of discrimination and corrective actions taken	-	No incidents of discrimination against employees in 2021.
GRI 408: Child Labor			
GRI 103: Management approach disclosures	How it manages child labor	P42	<Principle 5, 6>
Topic-specific disclosures	408-1 Operations and suppliers at significant risk for incidents of child labor	-	No incidents of child labor in 2021.
GRI 409: Forced or Compulsory Labor			
GRI 103: Management approach disclosures	How it manages forced or compulsory Labor	P42	<Principle 4>
Topic-specific disclosures	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	-	No incidents of forced or compulsory labor in 2021.
GRI 412: Human Rights Assessment			
GRI 103: Management approach disclosures	Management approach for human rights assessment	P10, P42-43	<Principle 1, 2>
Topic-specific disclosures	412-1 Operations that have been subject to human rights reviews or impact assessments	-	Access human rights risks at operations sites and conduct reviews when necessary.
	412-2 Employee training on human rights policies or procedures	P10, P42-43	
GRI 414: Supplier Social Assessment			
GRI 103: Management approach disclosures	How it manages supplier social assessment	P49	<Principle 1, 2, 3, 4, 5, 6, 7, 8, 9, 10>
Topic-specific disclosures	414-1 New suppliers that were screened using social criteria	P49	
	414-2 Negative social impacts in the supply chain and actions taken	-	Substandard suppliers are required to conduct rectification and would be eliminated if the rectifications proved to be below our standards.
GRI 417: Marketing and Labeling			
Topic-specific disclosures	417-2 Incidents of non-compliance concerning product and service information and labeling	-	VNET did not infringe the intellectual property rights of other parties in 2021.
	417-3 Incidents of non-compliance concerning marketing communications	-	No incidents of non-compliance concerning marketing communications in 2021.
GRI 418: Customer Privacy			
GRI 103: Management approach disclosures	How it manages customer privacy	P10, P38-39	
Topic-specific disclosures	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	-	No major complaints concerning breaches of customer privacy and losses of customer data received in 2021.
GRI 419: Socioeconomic Compliance			
GRI 103: Management approach disclosures	How it manages socioeconomic compliance	-	
Topic-specific disclosures	419-1 Non-compliance with laws and regulations in the social and economic area	-	No major fines or penalties due to non-compliance with relevant laws and regulations in 2021.

Independent Assurance Statement

Bureau Veritas Certification



INDEPENDENT ASSURANCE STATEMENT

Introduction and objectives of work
 BUREAU VERITAS CERTIFICATION (BEIJING) CO. LTD ("Bureau Veritas") has been engaged by VNET Group Inc. ("VNET Group") to conduct an independent assurance of its 2021 Environmental, Social and Governance Report (the "Report"). This information and its presentation in the Report are the sole responsibility of the management of VNET Group. Bureau Veritas was not involved in the drafting of the Report. Our sole responsibility was to provide independent assurance on the accuracy and reliability of information included, and on the underlying systems and processes used to collect, analysis and review it.

Scope of work
 VNET Group requested Bureau Veritas to verify the accuracy and reliability of the following:

- Data and information included in the Report for the reporting period from 2021.1.1 to 2021.12.31 regarding VNET Group's environmental, social, and governance activities;
- Appropriateness and robustness of underlying reporting systems and processes, used to collect, analysis and review the information reported.

In view of the prevention and control of COVID19, the assurance adopts remote mode, and Bureau Veritas obtains the relevant data and information needed for verification.

Excluded from the scope of our work is any assurance of information relating to:

- Activities outside the defined assurance period;
- Positional statements (expressions of opinion, belief, aim or future intention by VNET Group) and statements of future commitment;
- Operating financial data in the Report, which were separately audited by an external auditor and therefore excluded from the scope of work.

Methodology
 As part of its independent assurance, Bureau Veritas undertook the following activities:

- Interviews with relevant personnel of VNET Group;
- Review of written evidence produced by VNET Group, including documentary, records, photos, website downloads and other evidence;
- Evaluation of information against GRI standard principles i.e. Accuracy, Accessibility, Balance, Clarity, Comparability, Reliability and Timeliness;
- Review of VNET Group systems for data and information collection, aggregation, analysis and review.

The work was conducted against Bureau Veritas' standard procedures and guidelines for external assurance of ESG reports, based on current best practice in independent assurance. In the assurance process, we have used ISAE3000 (Revised), the AA1000 and the GRI standards.

The work was planned, carried out and concluded on a reasonable and rather than absolute basis.

ISSUING OFFICE ADDRESS:
 Room 902-906, Tower W1, The Towers, Oriental Plaza, 1 East Chang An Ave, Dong Cheng District, Beijing.

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Our findings
 On the basis of our methodology and the activities described above, it is our opinion that:

- The information and data included in the scope of our assurance are accurate, reliable and free from material mistake or misstatement;
- The information is presented in a clear, understandable and accessible manner;
- VNET Group has established appropriate systems for the collection, aggregation and analysis of relevant information.

Additional commentary

Objectivity
 VNET Group adopts information systems to manage data and information. The relevant departments are responsible for collecting, checking, sorting, summarizing and analyzing data and information from different aspects. The evidence provided by VNET Group is reliable and traceable.

Materiality
 VNET Group identified and disclosed key ESG issues and relative information according to the Core Scheme of GRI Sustainability Reporting Standards issued by the Global Sustainability Standards Board, the ESG Reporting Guide 2.0 issued by NASDAQ, and the Environmental, Social and Governance Reporting Guide issued by Hong Kong Exchanges and Clearing Limited. The Report has materiality.

Completeness
 The Report discloses VNET Group sustainability strategy, underlying management systems, actions and performance in the three areas of environmental, economic and social accountability. The Report covers VNET Group headquarter and its consolidated subsidiaries, discloses key issues of concern to the stakeholders within the reporting period, including carbon emissions, renewable energy, climate change, privacy and data security, occupational health and safety, employee rights and interests, and community engagement and contribution.

Statement of independence, impartiality and competence
 Bureau Veritas is an independent professional services company that specialises in Quality, Health, Safety, Society responsibility and Environmental management with more than 190 years history in providing independent assurance services. No member of the assurance team has a business relationship with VNET Group. We have conducted this verification independently, and there has been no conflict of interest. Bureau Veritas has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day to day business activities.

Lead Verifier: Haoyu Zhang

Certificate Number: CN100190A



Authorized Signatory

March 31th, 2022

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 Room 902-906, Tower W1, The Towers, Oriental Plaza, 1 East Chang An Ave, Dong Cheng District, Beijing.



General Disclaimer

The information in this report may contain predictive statements, including but not limited to, future business model, the development trend of relevant industries and new technologies. These statements may include descriptions regarding the intent, belief or current expectations of the Group or its officers with respect to the consolidated results of operations and financial condition of the Group. Such predictive statements are not guarantees of future performance and involve risks and uncertainties, and actual results may differ from those in the predictive statements as a result of various factors and assumptions. The Group or any of its affiliates, advisors, representatives or underwriters has no obligation and does not undertake to revise predictive statements to reflect future events or circumstances, except as required under law.