REFINING ACTIONS

TO PROMOTE GREEN DEVELOPMENT ON ALL FRONTS

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China Telecom insists on the green development principles, implements the national "dual-carbon" goal and the industry's green and low-carbon requirements, releases the "1236" action plan of China Telecom for carbon dioxide peaking and carbon neutrality. We comprehensively promote the implementation of "dual-carbon" work, and fully demonstrate the leading role of a central state-owned enterprise in undertaking social responsibilities and empowering the green development of the whole society.

PRACTICING GREEN OPERATION

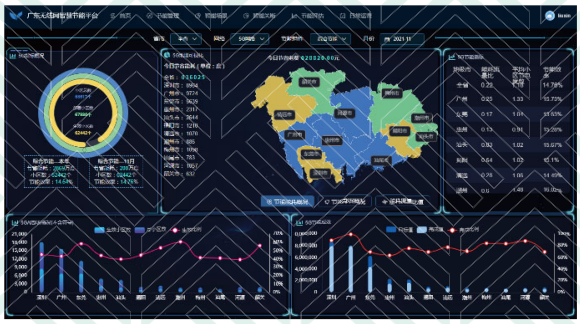
Promoting energy conservation and emission reduction

The Company complies with the *Environmental Protection Law of the People's Republic of China*, the *Energy Conservation Law of the People's Republic of China* and other laws and regulations related to environmental protection, and implements the systems such as the *Administrative Measures for China Telecommunications Corporation on Energy Conservation and Emission Reduction*. The Company applies energy conservation and emission reduction requirements to link through various operational activities such as network planning, procurement, construction, operation and office administration. The Company strengthened its efforts in developing a sound measuring and monitoring system on energy consumption, organised training and exchanges on energy conservation and emission reduction, constantly raised the professional level of grassroots personnel, and continued to promote innovation in energy conservation and emission reduction management.

The Company refined the evaluation, reward and punishment system, strictly controlled the growth of total energy consumption and the PUE (power usage effectiveness) value of large-size and mega-size datacentres. While ensuring the orderly development of energy conservation and emission reduction using its self-owned special funds, the Company actively introduced social capital and technology to realise the technical upgrade through the continuous use of the energy management contracting mode. The Company vigorously promoted the scale application of the 4/5G base station intelligent shutdown technology, such as self-developed AI energy saving technology to enhance the energy consumption efficiency of base stations. In 2021, the cumulative electricity saving is about 500 million kWh, saving electricity costs of about RMB375 million. The Company made constant efforts in retiring inefficient equipment and facility rooms, promoting the configuration optimisation of basic ancillary facilities of facility rooms, so as to minimise power consumption and enhance power efficiency. Through the co-building and co-sharing of 4/5G base stations with China Unicom, annual electricity savings exceeded 10 billion kWh and CO_2 emissions were reduced by over 6 million tons. In 2021, the overall energy consumption per unit of information flow was 0.0344 MWh/TB, representing a decrease of 8.3% over last year.

Guangdong branch vigorously promoted green and low-carbon new operation of mobile base stations

Guangdong branch took the lead in the industry to independently develop the AI+ Big Data base station smart energy-saving platform, self-developed smart algorithm for energy consumption prediction and 4/5G shared coverage algorithm, etc. In 2021, it saved more than 88 million kWh of energy, and saved electricity costs of RMB57 million.



The Company promotes water conservation, strives to reduce the water consumption per unit operating revenue, actively promotes and advocates water conservation by posting reminders regarding water conservation near water facilities and appliances. The Company continually strengthens the management on water usage, carries out sewage disposal and treatment, promotes the reuse of water, actively uses reclaimed water as an alternative source of water in place of tap water while meeting the requirements on use of water, promotes and popularise the use of water-saving appliances and performs regular checks and repairs on each part of the water supply system to prevent occurrences of water leakage and water wastage. In 2021, the total water consumption decreased by 1.21 million tons over last year, representing a decrease of 3.4% compared to last year while the water consumption per unit operating revenue decreased by 13.5% over last year. In 2022, the Company sets the target of total water consumption not to exceed the average water consumption from 2019 to 2021.

The Company encourages paper saving by actively promoting reduction of paper use in operation and office facilities sites. The Company, from the perspectives of technology and systems, encourages paper saving and reduces paper use. We accelerated the digital transformation of the procurement supply chain, vigorously promoted the application of electronic procurement and electronic orders to realise the paperless operation of the whole process of the supply chain, and continually promoted electronic accounting files management, VAT electronic invoice, e-reimbursement and filing of e-invoice and paperless operation, and promoted automatic process of tax declaration in order to reduce the use of paper.

The Company enhances the recycling, disposal and utilisation of waste and used materials in order to conserve resources as much as possible and reduce environmental pollution. The Company specified the guidelines, division of responsibilities and management of the recycling and disposal of waste materials and the qualifications of recyclers, standardised the forms and procedures of disposal, and refined the approval authority and process of disposal decisions. The Company carried out clean-up of hazardous and non-hazardous wastes and exchange of experience in this respect in an efficient manner, to effectively prevent disposal risks.

In 2021, the Company continually enhanced the professional management of waste, promoted the recycling, utilisation and harmless disposal of waste and old materials such as batteries, cable cords and devices. Since waste and old batteries contain large amounts of heavy metal, waste acid, waste alkali and other electrolyte solutions, the batteries will pollute the environment if handled inappropriately.

Within centralised procurement, the bidder is required to be an enterprise on the list of green factories or the list of clean production demonstration enterprises announced by the Ministry of Industry and Information Technology. The bidder shall meet the *Lead-acid Battery Industry Entry Requirements*, and pass the review of the regulatory department, and shall promise to recycle and dispose waste batteries.

Establish a recycling and disposal management system for waste batteries, and hand over waste copper cables to professional third parties for recycling and disposal. Extend the useful life of lead-acid batteries and enhance battery efficiency by promoting the development of optical fibres and increasing investment in network operation and maintenance.

In 2022, the Company will continue to carry out professional management of wastes, adhere to the principle of "recycling as much as possible", recycle and dispose of waste and old batteries, cables and devices in an open manner, and actively enhance the efficiency of disposal through an integrated disposal process and continuous standardisation of disposal operations.

Protecting the ecological environment in engineering construction

The Company has formulated the *Administrative Measures for China Telecom on Electromagnetic Environmental Protection of Telecommunications Base Stations (Trial Version)*, and has taken various proactive environmental protection measures such as environmental assessment regarding issues in telecommunications engineering construction responding to concerns of the government and the public, such as farmland protection, equipment pollution, construction impact and electromagnetic radiation to ensure compliance with the government's regulatory requirements and to actively communicate with the public.

Farmland Protection

- The existing houses and barren land will be preferred in site selection for base stations, in order to do a good job in the protection of farmland.

Equipment Pollution

- Non-polluting equipment with no noise and no electromagnetic radiation and free of pollutants is preferred.

Construction Impact

- Areas such as mineral reserves, forest, grasslands, wildlife habitats, natural and cultural relics, natural reserves and scenery areas are intentionally avoided when conducting routing roll-out deployment for fibre cables, so as to avoid changing the surrounding environment as much as possible.

Electromagnetic Radiation

- The Company monitors and assesses the electromagnetic radiation around the base station, enhances communications with the community, opens itself to public scrutiny, strictly controls the quality of network equipment by imposing controls from the source and actively takes advanced technical means to refine the layout of base station, ensuring the emission standard is stricter than the national emission standards.

Promoting co-building and co-sharing of communications infrastructure

The Company earnestly implemented the implementation measures of promotion of co-building and co-sharing of telecommunications infrastructure promulgated by the Ministry of Industry and Information Technology and the State-owned Assets Supervision and Administration Commission of the State Council. The Company actively promoted the co-building and co-sharing of communications infrastructures such as base stations, pipelines and pole lines, to effectively reduce duplicate construction in order to protect the natural environment and landscape, and to reduce the land use, energy, and raw materials consumption. The Company promoted the co-building and co-sharing with China Unicom, and created a new model of 5G construction and operation, laying a solid foundation for a new pattern of collaborative development in the domestic industry, and contributing Chinese solutions and Chinese wisdom to the win-win cooperation of large global enterprises.

In 2021, the Company has comprehensively deepened the co-building and co-sharing with China Unicom in various fields, accelerating the construction of 5G and overcoming the impact of the Epidemic and the difficulties in procurement and supply. The Company newly installed more than 300,000 5G base stations. We fully leveraged the complementary advantages of both parties' network resources. The Company strengthened the coordination of 4/5G, actively carried out the co-building and co-sharing of 4G network, accelerated the consolidation of 4G existing resources and the demolition and reuse of old stations. During the year, approximately 460,000 base stations were installed for co-sharing, with a cumulative number of over 600,000 4G base stations were installed for co-sharing by both parties. The Company provided more than 19,800 kilometres of co-shared pole line and more than 1,200 kilometres of co-shared pipeline.

China Telecom and China Unicom comprehensively deepened the co-building and co-sharing

On 6 December 2021, China Telecom and China Unicom entered into the *Memorandum of Strategic Cooperation on Comprehensively Deepening Co-building and Co-sharing*.

EMPOWERING GREEN DEVELOPMENT

China Telecom made full use of the new generation of information and communications technologies to build smart production and smart service solutions to meet the digital transformation needs of various industries, reduce energy consumption and carbon emissions, and promote low-carbon production and green life.

China Telecom released a "dual carbon" action plan to explore and form a "1236" green and low-carbon development model

On 25 August 2021, the National Low-carbon Day, China Telecom held the press conference of "Energy Conservation and Carbon Reduction for Green Development – China Telecom's Carbon Dioxide Peaking and Carbon Neutrality Action Plan" in Beijing.

"Cloud Brain" helped the construction of "Two-mountain Bank (兩山銀行)"

Changshan branch built a smart Cloud Brain platform, integrated and aggregated ecological resource source data, to enhance the efficiency of ecological resource utilisation, enhance the attractiveness of ecological resources to capital, drive the growth of village collective economy, and increase the income of the main body of ecological resources.

ADDRESSING AND MITIGATING CLIMATE CHANGE

In response to the national requirements of "carbon dioxide peaking and carbon neutrality", China Telecom established a special team for green development, formulated the *Interim Measures for China Telecommunications Corporation on the Management of Carbon Dioxide Peaking and Carbon Neutrality*, the "*14th Five-Year" Special Plan of China Telecom on Carbon Dioxide Peaking and Carbon Neutrality* and other internal systems, and comprehensively considered regulatory, compliance, market, finance and other factors to assess the main risks of climate change.

Risk type	Risk description	Response measures
Regulatory risk	Some branches have been included in the carbon trading pilot, and carbon emission quota will become a constraint factor for the Company's development.	To strengthen internal management, manage and check energy consumption, and actively pursue relevant policies.
Legal risk	The risk of administrative penalties or litigation arises from failure to avoid or mitigate the adverse effects on the climate or failure to adapt to climate change.	To comply with the relevant national laws and regulations, and make environmental assessment of base stations to avoid being criticised and penalised by government authorities.
Market risk	Consumers and business customers are increasingly moving towards products and services less vulnerable to climate change.	To accelerate the green transformation of the Company and comprehensively build green and low-carbon new infrastructure; and to strengthen the promotion of green and sustainable development of the Company.
Reputational risk	It is difficult to attract and retain customers, employees, business partners and investors if the Company has a disruptive impact on the climate.	To comply with relevant national laws and regulations, and avoid being criticised and penalised by government authorities.
Financial risks	If the Company increases its efforts to purchase renewable energy, it may cause the increase of energy costs.	To pay close attention to national policies and market trends, and purchase low-priced renewable energy to the greatest extent.

The Company integrates green concepts and green capabilities into the whole process of the "Cloudification and Digital Transformation", converts energy dual control into carbon dual control, and strictly controls the total carbon emissions and carbon emission intensity. In the future, the Company will accelerate the adjustment of energy consumption structure, increase the proportion of clean energy consumption, and clarify the energy consumption intensity control target of continuously reducing 8% of the overall energy consumption per unit of information flow in 2022. During the "14th Five-Year" period, we will reduce greenhouse gas emissions by not less than 27 million tons through co-building and co-sharing and various energy-saving measures, and strive to build new green and low-carbon information infrastructure to empower the green development of the digital economy.

PROMOTING RESPONSIBLE SUPPLY CHAIN

China Telecom strictly follows the *Bidding Law of the People's Republic of China* and other procurement-related laws and regulations, implemented regulations such as the *Administrative Measures for China Telecommunications Corporation on Procurement*, actively responded to the adjustment of national policies, and continuously enhanced the construction of supply chain system. In 2021, the Company formulated or optimised the management systems such as the *Administrative Measures for China Telecommunications Corporation on Group-level Procurement Evaluation and Testing (Provisional)* and the *Interpretation of the Administrative Measures for China Telecommunications Corporation on Procurement (2021 Edition)*. The Company consistently adhered to supply chain management concepts focusing on value-added, transparent and green procurement, committed to a trusted relationship with suppliers to achieve win-win situations and actively communicated with and encouraged its suppliers to fulfill social responsibilities together.

In 2021, China Telecom constantly promoted open procurement and tendering, and took multiple measures according to the internal management system requirements to encourage the suppliers to enhance their performance and services. The Company carried out the information sharing mechanism of illegal and discredited suppliers with major domestic infrastructure telecommunications operators. For outstanding suppliers, the Company adopted incentive measures, and for unqualified suppliers, the Company took disciplinary measures. During the year, 109 cases of suppliers' misconduct involving bid rigging, false bidding, refusal to perform contracts, and disciplinary violations were dealt with. Through the listing of management methods, the objectification of identification standards and the openness of processing rules, the Company has gradually built a supplier management system integrating positive incentive and negative punishment for enhancing suppliers' performance awareness of services, and promoting suppliers' good faith in cooperation.

China Telecom released the first batch of strategic cooperation suppliers and A-grade product suppliers

On 12 November 2021, China Telecom and 36 well-known enterprises in the industry jointly held the first e-Surfing Supply Chain Ecological Development Forum in Guangzhou, during which China Telecom released the first batch of strategic cooperation suppliers and A-grade product suppliers, and commended the relevant suppliers.

The Company has encouraged suppliers to jointly respond to climate change by preferentially purchasing resource saving and environmentally friendly products. To build a green supply chain, the Company incorporates green and low-carbon into the supplier evaluation system, carries out full lifecycle cost management of the supply chain, and increases the application of energy-saving and low-carbon products. The Company promotes the application of green procurement indicators in the procurement process, and includes environmental impact factors into the procurement evaluation scoring, so as to encourage suppliers to enhance their awareness and capability of environmental protection. In 2021, China Telecom employed first-class energy-efficiency air-conditioning products and transformers as defined by the national standard, to increase the inspection of electricity cost during the life cycle, thus the weighted score increased by about 30% compared with the previous batch. It pushed forward green production, green packaging and green warehousing and logistics, carrying out pilot projects of new energy freight vehicles in urban areas, and increasing the ratio of applying green recyclable packaging in the supply chain. Regarding the investigation of suppliers, production wastes and others are incorporated into the scope; in the management of suppliers' misconduct, the environmental problems are included in the management of suppliers' misconduct, covering all suppliers.