6.1 Strengthening Environmental Management

6.1.1 Environmental Policy and Goals

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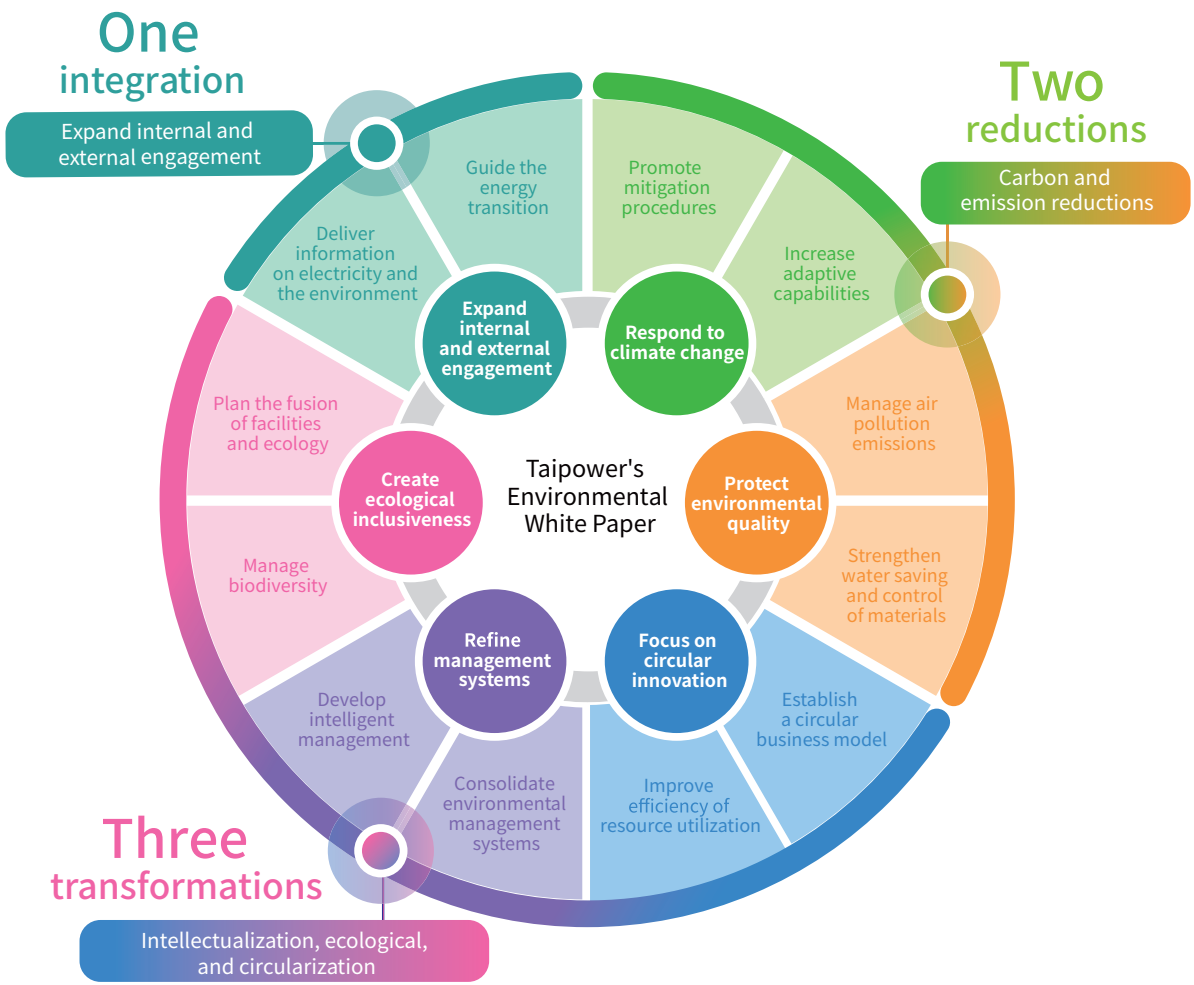
As the electric power industry pursues operations, it must consider energy quality, safety, and environmental sustainability. Taipower's corporate mission is to ensure a stable supply of electricity for the diversified development of society in a cost-effective and environmentally-friendly manner. The Company also aspires to transform itself into a prestigious, trustworthy world-class power utility group. As such, the Company is actively responding to the major environmental issues and development trends faced by the energy industry.

In alignment with the United Nations Sustainable Development Goals (SDGs) and the international vision for achieving carbon-neutrality by 2050, Taipower has formulated a White Paper with a forward-looking mindset. The White Paper fully elaborates on Taipower's strategic objectives and outlook and seeks to maintain a consensus on sustainability and a commitment to environmental policy.

Through six major strategic aspects and 12 corresponding strategic development dimensions, Taipower's Environmental White Paper presents a basis for the follow-up promotion of sustainable environmental management. Through development goals and action plans, Taipower integrates its business divisions to achieve the benefits of "one integration" (internal and external), "two reductions" (carbon and emission reductions), and "three transformations" (intellectualization, ecological, and circularization). Through this multi-pronged approach, Taipower will create environmentally friendly power facilities, a comprehensive model of green environmental protection, and a sustainable and inclusive power generation, transmission, distribution, and sales enterprise system.

Unfolding the Specific Contents of Taipower's Six Major Strategic Aspects and Twelve Strategic Dimensions



Environmental Sustainability Strategy Refinement

Taipower conducts a range of activities that are both environmentally friendly and neighborly. These include beach cleanups, fish fry releases, green space adoptions, and artificial reef developments. Additionally, in implementing its environmental policies, Taipower conducts environmental education, carefully evaluates environmental factors before power plant expansions and unit additions, and undertakes in-depth communication with local stakeholders to ensure legality and compliance. Through these measures, the Company achieves win-win situations for society, the environment, and Taipower.

Taipower Environmental Policy - Short, Medium, and Long-Term Goals

Strategy	Key strategic dimension	2022 goal (Short-term goal)	Achievements in 2022	2023 goal	Medium-term goal (by 2025)	Long-term goal (by 2030)
Respond to climate change	Promote mitigation procedures	Net greenhouse gas emission intensity of thermal power units will be reduced by 7% as compared to 2016 levels	Net emission intensity of thermal power units has been reduced by 7.1% as compared to 2016 levels	Net emission intensity of thermal power units will be reduced by 7.1% as compared to 2016 levels	Net greenhouse gas emission intensity of thermal power units will be reduced by 15% as compared to 2016 levels	Net greenhouse gas emission intensity of thermal power units will be reduced by 20% as compared to 2016 levels
Protect environmental quality	Manage air pollution emissions	Air pollution emission intensity will be reduced by 55% compared to 2016 (2016: 0.769g/kwh)	Air pollution emission intensity has been reduced by 66% compared to 2016 levels (0.259g/kwh)	Air pollution emission intensity will be reduced by 55% compared to 2016	Air pollution emission intensity will be reduced by 70% compared to 2016 levels	Air pollution emission intensity will be reduced by 75% compared to 2016 levels
Focus on circular innovation	Establish a circular business model	Completed circular business model pilot	Completed the renovation of the underground cafeteria at the headquarters building and handled 1 expert consultation meeting	The General Management Office conducted a feasibility analysis on promoting the use of recyclable containers and held 2 meetings on recycling and sustainability issues	Implement a circular resource supply model	Complete the establishment of a circular economy system
Refine management systems	Develop intelligent management	Intelligent management and service coverage will reach 55%(Including the cumulative deployment of smart meters in 2 million households, representing 75% of total national power consumption)	Intelligent management and service coverage reached 56.32%(Including the cumulative deployment of smart meters in 2.1 million households, representing 75.64% of total national power consumption)	Intelligent management and service coverage will reach 58%(Including the cumulative deployment of smart meters in 2.5 million households, representing 78% of total national power consumption)	Intelligent management and service coverage will reach 65%(Including the cumulative deployment of smart meters in three million households, representing 81% of total national power consumption)	Intelligent management and service coverage will reach 82%(Including the cumulative deployment of smart meters in six million households, representing 85% of total national power consumption)
Create ecological inclusiveness	Plan the fusion of ecology and facilities	Completed the interim report on the second power facility's ecological coexistence plan	Completed the interim report on the Yongan Wetland ecological integration project at the Hsinta Power Plant	Complete the release of the Hsinta Power Plant Ecological Coexistence Achievement Video and a presentation of the project results report	Establish at least three ecologically inclusive plans for power facilities	Establish at least five ecologically inclusive plans for power facilities
Expand internal and external engagement	Deliver information on electricity and the environment	Annual communication of environmental protection information will reach 560,000 people	Annual communication of environmental protection information reached 626,096 people	Annual communication of environmental protection information will reach 560,000 people	Annual communication of environmental protection information will reach 700,000 people	Annual communication of environmental protection information will reach 750,000 people

To align with the Company's formulated environmental policy and fulfill its commitments to the public, Taipower has taken into consideration international sustainability trends, social sentiments, legal circumstances, as well as operational status and plans. Through a collaborative approach across departments and units, each unit has developed feasible, forward-looking, and representative short, medium, and long-term strategic goals and action plans based on their respective business attributes. By constructing and implementing these strategic plans, we aim to ensure that each business unit follows the directions outlined in the Environmental White Paper. This will effectively realize the Company's vision of becoming a green enterprise and translate its goals into tangible actions.

Implementing Environmental Impact Assessments

To ensure a stable power supply, Taipower continues to develop and renovate various electrical facilities throughout Taiwan so that its hardware is well appointed and sound. The development of power facilities is highly related to local environments and communities. Improper management may result in water, air and soil pollution, noise or vibrations, waste, damage to natural resources and social, cultural or economic landscapes.

Consequently, Taipower has always been cautious about the impact of its operations on the surrounding environment and society. It has also adhered to a principle of minimizing its negative influence on the environment and sought to actively carry out effective environmental impact management. Through pre-development assessments and communication, public reviews, post-assessment improvements to plans, and a framework for continuous monitoring during construction, the impact of development activities on the environment and the surrounding community is minimized.

Adaptation Strategy and Climate Change Action

Taipower's power plants and transmission and supply systems are distributed throughout mountainous, coastal, and riverine basins around the country. As power infrastructure is spread over complex terrain, setting adaptation strategies and actions is critical. Taipower has actively conducted risk assessments for strong winds and flooding at 44 power generation (hydro and thermal power) units (excluding those on offshore islands) and for its transmission, and distribution systems. Furthermore, the Company has voluntarily established and promoted demonstration sites showcasing adaptation strategies for power generation, transmission, and distribution systems since 2013. These demonstration sites were completed in 2021. Additionally, power equipment with a higher climate risk will be screened. Accordingly, Taipower has reinforced the protection capabilities of various hydro and thermal power plants as well as transmission and distribution systems to reduce environmental impact and strive for sustainable operations.

Taipower plans to expand the above-mentioned demonstration projects to each unit. For example, a parallel expansion plan for the climate change adaptation of the generation system was launched in 2020. In 2022, a risk assessment of the power generation system was completed, and the parallel implementation plan for climate change adaptation in the transmission system was initiated. In the future, apart from working in conjunction with plans implemented by the Bureau of Energy, Taipower will launch relevant projects simultaneously and independently to enhance its climate adaptation capabilities.

Environmental Accounting

To accurately evaluate Taipower's investment in environmental protection, the Company implemented an environmental accounting system (EAS) in 2008. Environmental accounting is divided into capital expenditures (depreciation and amortization of fixed assets related to environmental protection) and recurring expenses (reimbursement of environmental protection-related expenses) for the collection of environmental protection-related expenses. The system requires employees to input environmental accounting codes for specific tasks or activities such as purchase requisitions, purchasing, reimbursements, and so forth through their business or accounting systems.

All operations are managed and compiled by Taipower's EAS to compute the costs of environmental protection, occupational safety, and health for each unit. Information is also compiled in the environmental accounting management system to make reimbursements more convenient and to accurately evaluate Taipower's investments in environmental protection expenditures. This system indicates that, in 2022, Taipower's environmental protection capital expenditure was approximately $5.305 billion and its recurring environmental protection expenses were about $3.346 billion. Taipower's EAS continues to be refined and optimized each year. In 2022, Taipower also made some major improvements to its environmental accounting process. These improvements are as follows:

Continuous Optimization of the Environmental Accounting System

In order to improve the environmental accounting mechanisms and management system, Taipower analyzed the environmental accounting data from each business unit and compared it with the actual operation patterns. The Company selected various business units for interviews, and optimized the system based on those interview results to ensure the accuracy of Taipower's environmental expenditure statistics.

Conducting Environmental Accounting Advocacy Meetings

Taipower conducted six educational advocacy meetings in 2022, and distributed new environmental accounting code promotion items. Through multiple education and training sessions, the Company enhanced the accuracy of the information gathered from the submission of environmental accounting codes by employees.

Engagement of External Initiatives Organizations

1. The Parallel Monitoring Organization for the Taichung Thermal Power Plant (The Central Counties / Cities Environmental Air Quality Parallel Monitoring Management Committee) has been jointly monitoring the air quality at the Taichung Thermal Power Plant for over 30 years. The committee involves organizations such as the Taichung City Environmental Promotion Association, the Changhua County Pollution Control Association, the Taichung City Pollution Control Association, and the Nantou County Ecological Conservation Association.
2. Participation in the Taiwan Association for Aerosol Research to discuss and share information on the rheology and impact of airborne particulate matter.
3. Participation in the Chinese Institute of Environmental Engineering to exchange and present papers on various pollution prevention strategies and technologies. Participation has gradually evolved from observing, listening, and communicating to collaborating and proactive participation.

6.1.2 Developing High-efficiency Thermal Power Generation

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Along with many in the global energy industry, Taipower is committed to developing high-efficiency power generation technology. The Company has been actively engaged in the energy transition in recent years. Through the development of low-carbon power, Taipower continues to reduce its electricity carbon emission factors. The Company is also reducing greenhouse gas (GHG) by using cleaner energy and providing cleaner power for industries and individuals in Taiwan. For thermal power generation, Taipower currently focuses on three main directions:

Transformation from coal to gas	The proportion of gas was increased again in 2022, and the pattern of primarily using gas with coal as support was continued. The proportion of gas used is higher than that of coal.
Coal-fired unit upgrades	Coal-fired units are gradually being replaced with ultra-supercritical units that have better generation efficiency.
Gas-fired unit upgrades	Old gas-fired combined-cycle units are gradually being phased out and replace with new-type combined-cycle gas-fired units that have better generation efficiency.

Sulfur Hexafluoride (SF_6) Reduction

Sulfur hexafluoride (SF_6) is a greenhouse gas with an extremely high global warming potential. After long-term use, the gas gradually escapes into the atmosphere. Nevertheless, as it is an essential insulating material for power equipment it is widely used in Taipower's substation equipment for power generation, transmission, and distribution. In response to this issue, Taipower has continuously promoted reduction methods. Taipower units that manage substation equipment have SF_6 maintenance management procedures. Relevant units carry out SF_6 reclamation and purification work as part of procedures for overhauling substation equipment. After the equipment is overhauled, the purified SF_6 is backfilled into equipment to reduce greenhouse gas emissions. This allows for the recycling of SF_6, mitigates climate change problems and achieves the goals of establishing a circular economy and resource regeneration.