台灣電力公司
Taiwan Power Company

2021

Sustainable Development Goals Report

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The Implications of SDGs for Taipower's Sustainable Development

Taipower's operating sites are scattered throughout Taiwan. They profoundly affect livelihoods, the natural environment and social culture and are closely linked to the development of industries. In facing multiple risks and opportunities, Taipower is concerned with both its own short-term survival and sustainable development through business strategies that pursue sustainability to increase the resilience of the enterprise. To demonstrate its determination to promote sustainability, Taipower has deepened its sustainability strategy by linking the 17 Sustainable Development Goals (SDGs) announced by the United Nations in 2015 with its own sustainability goals. Taipower organized its first SDG seminar in February, 2019. The seminar encouraged the development of internal consensus and invited business units to jointly determine which UN SDGs were relevant to Taipower's sustainable development. Taipower also convened meetings of its Sustainable Development Commission in 2020 and invited external experts to jointly study and identify targets. Taipower then further integrated the SDGs into its business strategies to meet short (2020), medium (2025), and long-term (2030) goals through its own sustainable development plan.

As issues emerge and develop, Taipower implements continuous adjustments to its sustainability initiatives. In 2021, Taipower's sustainability planning was based on the Company's first report on the Sustainable Development Goals published last year, as well as the 2021 World Business Council for Sustainable Development (WBCSD) report entitled "Sector Transformation: An SDG Roadmap for Electric Utilities." Reference was also made to the UN's Sustainable Development Goals Report for 2021. Subsequently, Taipower summarized its own 2021 SDG performance and publish this report. This report is combined with the disclosures made through Taipower's annual sustainability report. That report explains the Company's investments and achievements in the value chain of the power industry and presents Taipower's sustainable development plan along with highlights and performance notes for each SDG. Taipower will continue to track the progress of its sustainability initiatives, fulfill its sustainability commitments, and enhance its resilience against emerging risks while capitalizing on opportunities. The Company will also continue to pursue sustainability with a long-term and macroscopic view and advance toward its goal of becoming a world-class sustainable power company.

Taipower's Value Chain and Operational Elements

Mission, Vision and Core Values

Mission

To supply stable power for the needs of diverse social developments with an eco-friendly approach at a reasonable cost

Vision

To transform into a prestigious and trustworthy world-class power utility group

Core Values

Integrity, Care, Service, Growth

Sustainable Development Profiles

Governance

- Provider of Sustainable Power
- Leader of Smart Grid Development
- Provider of Services for Smart Living

Environment

- Agent of Environmental Friendliness

Society

- Practitioner of Corporate Social Responsibilities

Resource Input

Financial Capital

Capital of Taipower : NT$330 billion
Total Expenditures : NT$614.5 billion

Human Resources Capital

Total number of employees : 27,860
Number of contracted workers : 1,100

Equipment Capital

Power plants in operation : 67 (Taipower owned)
Total installed capacity of thermal power plants : 26,340 MW
Total installed capacity of nuclear power plants : 2,890 MW
Total installed capacity of renewable energy power plants : 2,490 MW
Installed capacity of pumped-storage hydroelectricity : 2,600 MW
Installed capacity of purchased thermal power plants : 8,320 MW
Installed capacity of purchased renewable energy : 8,540 MW

R&D Capital

Number of research projects for the year : 456
R&D expenditure of NT$5.8 billion 2021 (Consisting of NT$4.7 billion in expenditures and NT$1.1 billion in capital expenditures)

Natural Capital

Natural Gas (million cubic meters) : 15,846
Coal (million metric tons) : 28.295
Fuel Oil (thousand kiloliters) : 961

Actual value in 2021.

Environmental protection capital expenditure in 2021 was approximately 4.217 billion while the recurrent environmental protection expenditure was 3.688 billion

Social Capital

Number of users : 14.75 million
Power development promotion and assistance fund : 2.91 billion
Capacity of demand response : 2,650MW
Power supply partners : 9 Independent Power Producers (IPPs), 49 cogeneration power providers and 42,788 contracts for renewable energy (including solar power, wind power, hydro power and others)

Power Generation

Taipower's electricity generation in 2021

Thermal power generation : 155.2 billion kWh
Renewable energy : 3.9 billion kWh
Pumped-storage hydroelectricity : 3.2 billion kWh
Nuclear power : 26.8 billion kWh

Electricity purchased from external sources in 2021

Privately-owned thermal power plants : 42.7 billion kWh
Cogeneration : 5.1 billion kWh
Renewable energy : 11.9 billion kWh

Transmission and Distribution

Total length of power transmission lines : 17,995 circuit kilometers
Total length of distribution lines : 399,813 circuit kilometers
Number of substations : 619

Electricity Retailing

Percentage of electricity used (sold) by user type

Industry : 57%
Residential : 21%
Commercial : 15%
Others : 7%

User power supply

Industry : 134.7 billion kWh
Residential : 49.3 billion kWh
Commercial : 34.2 billion kWh
Other : 17.1 billion kWh

Outputs

Earnings before tax : NT$22.2 billion
Electricity fee income : NT$609.2 billion

Net amount of generated and purchased power : 248.8 billion kWh
Power generated : 189.1 billion kWh
Power purchased : 59.7 billion kWh
Facility utilization rate : 76.9%
Line loss rate : 3.53%

Greenhouse gas emissions : 98,771 kt CO_2e
Air pollution emissions (kg/GWh) :
- Particulate pollutants emitted : 6
- Sulfur oxide emissions : 98
- Nitrogen oxide emissions : 188

Number of new employees : 2,125
Total number of participants in education and training : 69,938
Incidents of work-related injury : 10
Ratio of work-rated injuries : 0.035%

Number of research reports : 193
Number of papers published : 111
Number of patents/intellectual property cases :
- 74 in the Republic of China
- 1 in the United States
- 1 in Japan

Customer satisfaction rate : 93 percent

Taipower's Sustainable Development Plan

In order to focus the future development direction of Taipower, the Company created a Sustainable Development Plan consisting of five major development profiles. These include: Provider of Sustainable Power, Leader of Smart Grid Development, Provider of Services for Smart Living, Agent of Environmental Friendliness, and Practitioner of Corporate Social Responsibilities. Taipower also aligned itself with the United Nations Sustainable Development Goals (SDGs) by establishing clear and quantifiable sustainability strategies with short (2021), medium (2025) and long-term (2030) goals. Continuous reviews and improvements are implemented each year and reflected in Taipower's sustainable development blueprint.

Sustainable Development Profiles	SDGs	T-SDGs	Strategy	Corresponding Targets	Actual Performance Values (As of 2021)	2021 Goals	Short-Term Goals (Until 2022)	Medium-Term Goals (Until 2025)	Long-Term Goals (Until 2030)
Provider of Sustainable Power		T-SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	Promote renewable energy power generation plans and expand the development of zero carbon energy	**The accumulated total capacity of Taiwan Power Company**	2,490MW[1]	2,526MW	2,564.9MW	3,107.4MW	4,522.3MW
				Grid connection capacity of the Taipower system	11,027MW[2]	13,025MW	16,829MW	29,086MW	41,718MW
			Promote low-carbon energy, such as gas-fired power generation to ensure a stable power supply	**Cumulative total capacity**	13,149MW	13,149 MW	14,273MW	19,945MW	25,924MW
			Improve the power generation efficiency of traditional thermal power-generating units, reduce consumption of fossil energy through recycling to improve the quality of the living environment	**The average power generation efficiencies of Taipower's own thermal power-generating units (Excluding externally purchased power)**	41.1%	Higher than 40.3%	Higher than 40.3%	Higher than 45%	Higher than 47%
			Promote carbon-free fuel co-firing plans and introduce carbon fixation technologies to reduce carbon emissions while ensuring a stable power supply	**Introduction of ammonia co-firing technology**	New projects in 2022		Sign a Memorandum of Understanding (MoU) with MHI by the end of the year	Conduct administrative procedures related to environmental assessment, commissioning plans, safety regulations, etc.	One generating unit in Linkou to complete the demonstration of 5% ammonia co-firing
				Introduction of hydrogen co-firing technology			Sign a Memorandum of Understanding on hydrogen co-firing technology with Siemens AG	Complete the demonstration of one gas turbine in Xingta Power Plant for hydrogen co-firing generation (hydrogen co-firing ratio of 5%)	Decide whether to increase the hydrogen co-firing ratio based on the assessment of domestic hydrogen production capacity and transmission and storage technology
				Push forward the construction of pilot fields for carbon capture and storage			Seek Tender for Taichung Carbon Reduction Park and Carbon Capture Pilot Plant	Construction of the carbon capture pilot plant (2 kt-CO_2/year)	Carbon capture demonstration plant planning (1 Mt-CO_2/year)
			While ensuring a stable power supply, increase the proportion of clean energy (renewables, gas) generation in the Taipower system	**Proportions of clean fuel (renewables, gas) generation**	New projects in 2022		The generation ratio of the Taipower system is 38% for coal, 42% for gas, 9% for nuclear, 8% for renewables, and 3% for others (fuel and pumped storage)	The generation ratio of the Taipower system is 30% for coal, 50% for gas, 20% for renewables source	The generation ratio of the Taipower system is 30% for coal, 50% for gas, 20% for renewables
		T-SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	Increase the proportion of self-produced energy (Renewable energy) and maintain the long-term power supply in order to reduce supply chain risks in the fight against infectious diseases	**Proportion of self-produced power generation (Renewable energy) in the Taipower System**	6.3% (Approximately 15.8 billion kWh)[3]	9.2% (Approximately 22 billion kWh)	8.1% (Approximately 20.9 billion kWh	19.6% (Approximately 51.1 billion kWh)	24.1% (Approximately 68 billion kWh)
		T-SDG 13: Take urgent action to combat climate change and its impacts	Mitigate the impact of climate change on the power supply side through adaptation	**Reliable power supply in extreme weather conditions**	Completed risk assessments for 16 of the Company's power generation units (Excluding offshore islands and the Hsieh-ho Power Plant)	Completed an in-depth risk assessment of the Company's power generation system (Hydro and thermal power plants)	Complete climate monitoring and adaptation analysis report	Horizontal expansion of adaptation strategies and tasks for onsite units of thermal power generation systems (Excluding offshore islands)	Formulate strategic plans for systems to complete adaptation plans for power facilities (Excluding offshore islands)

[1] Due to the impact of the decommissioning of onshore wind turbines and a 2021 capacity reduction of 15MW, the increment of solar photovoltaics failed to meet expectations. The completion of the hydropower plan was also delayed until 2022.
[2] Due to the progress of renewable energy construction.
[3] Due to the water shortage in the first half of 2021 and the progress of renewable energy construction.

Sustainable Development Profiles	SDGs	T-SDGs	Strategy	Corresponding Targets	Actual Performance Values (As of 2021)	2021 Goals	Short-Term Goals (Until 2022)	Medium-Term Goals (Until 2025)	Long-Term Goals (Until 2030)
Leader of Smart Grid Development	 	T-SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	Increase the quantity of energy storage equipment built on company-owned sites, and expand procurement of rapid auxiliary services	**Cumulative storage capacity built on owned sites and procurement of rapid auxiliary services**	1. 35MW of self-built projects have been contracted: The 15MW energy storage system at the Tainan Salt Field Solar Power (TSFSP) facility was been contracted out at the end of April 2021, and the 20MW energy storage system at Luyuan was contracted out at the end of October 2021 2. A trading platform was set up on July 1, 2021 that allows for procurement through competitive bidding, and the current qualified trading capacity has reached 15MW	1. Donglin P/S (10MW) energy storage equipment connected to the grid 2. Added 15MW of qualified capacity for energy storage in auxiliary services	Accumulate 102MW of which 38MW is self-built. This is compose of the self-built TSFSP (20MW) and Luyuan (21.6MW) energy storage projects, ancillary services (64MW), bilateral contracts (15MW) and qualified trading capacity (49MW)	Reach 1000MW storage capacity (160MW of Self-built + 840MW of Procured; continuous adjustment)	The capacity of energy storage can be increased with the improvement of performance and economic value. Taipower shall implement flexible and continuous reviews based on generation capacity and load conditions
		T-SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	Strengthen information security, build a cloud data center, and improve backbone/regional fiber optic communications capabilities	**Information security protection**	Three IDS systems have been installed (the Yunlin Branch, TSFSP, and the Taichung Branch) and incorporated into the Security Operation Center (SOC) for monitoring and alarm analysis	Completed the plans for 32 sites, evaluated the installation sequence of IDS sites and include them in SOC monitoring. Evaluated the benefits of 3 pilot sites and formulated improvement plans	1. IDS continuous monitoring and performance evaluation 2. Expansion of IDS deployment - It is expected to complete the installation, procurement, and construction of eight fields	Complete the security protection and intrusion detection systems (IDS) at 32 sites for all independent system operators and include them in SOC monitoring	Continue to improve the overall security protection capabilities of the smart grid
				Cloud data center construction	A big data analysis and data sharing platform has been established and was officially launched in December 2021 The groundbreaking ceremony of the Changhua Cloud Data Center was held in September 2021	Began trial operations on the big data analysis and data sharing platform in June 2021. Provided access to the entire company. Taipower will continue to review results and complete construction by the end of November	The Changhua Cloud Data Center is expected to obtain the building permit in June	Complete the construction of two cloud data centers (Yuan-Hsin and Changhua), which can accommodate 700 cabinets	Complete the construction of a third cloud data center (Taichung), which can accommodate 2,000 cabinets
		T-SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all	Promote applications of big data and AI on operational and maintenance information for transmission systems to reduce the System Average Interruption Duration Index value	**Reduce the national power outage time (SAIDI value)**	16.376 min/household • year	16.7 min/household • year	16.6 min/household • year	15.7 min/household • year	15.5 min/household • year
			Promote smart grids and introduce the construction of IEC 61850 smart substations	**The construction of IEC 61850 smart substations**	New projects in 2022		Completed 37 substations	Completion of 70 substations	Rolling reviews based on actual construction
			Consolidate the information communication and smart management system, optimize transmission and substation asset management systems, and establish predictive maintenance capabilities	**Continued optimization of the transmission and substation asset management system**	New projects in 2022		1. Substation equipment asset management system: Ancillary equipment is added to the system management 2. Transmission equipment maintenance management system: Oil pressure monitoring system for interfacing oil-filled cable	Continuously introduce big data analysis and value-added applications into the transmission and substation equipment maintenance management system	Consolidate and reinforce transmission and substation equipment management to implement CBM goals and improve outage prevention capabilities
			Plan the IP of the entire fiber optics communication system in Taiwan to increase bandwidth and enhance reliability	**Establish an ultra-speed optical cable communication system around the island**	New projects in 2022		It is expected to complete the construction of 550 sets of Phase 3 10G IP-MPLS access routers	Carry out system-wide optimization and expansion planning	Establish a communication network system for next-generation communication technology
			Establish a smart grid to improve power supply quality and operational efficiency	**Reduce the line loss rate**	New projects in 2022		4.27%	Year-on-year rolling review	Year-by-year rolling review

Sustainable Development Profiles	SDGs	T-SDGs	Strategy	Corresponding Targets	Actual Performance Values (As of 2021)	2021 Goals	Short-Term Goals (Until 2022)	Medium-Term Goals (Until 2025)	Long-Term Goals (Until 2030)
Provider of Services for Smart Living		T-SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all	Low-voltage AMI smart meter infrastructure	**Deployment of smart meters**	Completed the deployment of a total of 1.501 million smart meters	Completed the deployment of a total of 1.5 million smart meters	Complete the deployment of a total of 2 million smart meters	Complete the deployment of a total of 4 million smart meters	Complete the deployment of a total of 7 million smart meters after a continuous review of deployment benefits
		T-SDG 12: Ensure sustainable consumption and production patterns	Refinement of customer services	**Taipower APP Memberships**	741,000	360,000	800,000	1 million	1.5 million
				The number of transactions via new technology payment channels for each period	Reached 980,000 transactions	Reached 630,000 transactions for each period	Reaches 1 million transactions for each period	Reaches 1.1 million transactions for each period	Reaches 1.5 million transactions for each period
				Cloud-based services	1. Introduced a payment certificate download service on the Taipower App 2. Added e-bill payment vouchers to high-voltage payment accounts for download 3. Added payment vouchers to the National Development Council's My Data platform for download	Increased cloud certificate download services	Number of cloud payment receipts reach 30,000 per year	Number of cloud payment receipts reach 300,000 per year	Number of cloud payment receipts reach 300,000 per year
				Advanced value-added services on the high-voltage user service portal	Completed 1 additional advanced value-added service that provides a real-time price platform function	Added at least 1 advanced value-added service	Increase at least 1 advanced value-added service	Add at least 4 additional advanced value-added services	Add at least 6 additional advanced value-added services
				Number of visits to the Power Consumption Examination Center's website	180,000	160,000	200,000	260,000	310,000
				The proportion of households receiving electricity	New projects in 2022		Except in cases for which legal restrictions exist, Taipower provide electricity services and achieve a 100% rate of electricity applications.	Except in cases for which legal restrictions exist, Taipower will provide electricity services and achieves 100% rate of electricity applications.	Except in cases for which legal restrictions exist, Taipower will provide electricity services and achieves 100% rate of electricity applications.
			Assist in the promotion of home energy management system (HEMS)	**Encourage users to build their HEMS through demonstration sites and continue to cooperate with energy industry players to jointly promote, explore and develop value-added applications, and provide innovative business models**	New projects in 2022		Push the Company forward in the field of home energy management services through demonstration site validation and application research	Continue to cooperate with private industry players to jointly promote home energy management services	Explore and develop value-added applications and provide innovative business models through cross-industry alliances

Sustainable Development Profiles	SDGs	T-SDGs	Strategy	Corresponding Targets	Actual Performance Values (As of 2021)	2021 Goals	Short-Term Goals (Until 2022)	Medium-Term Goals (Until 2025)	Long-Term Goals (Until 2030)
Agent of Environmental Friendliness		T-SDG 12: Ensure sustainable consumption and production patterns	Establish a circular business model	**The proportion of wastewater recycled at thermal power plants**	77.33%	75%	76%	80%	85%
				Circular product supply models	Completed a manual on coal ash use for marine engineering	Inventoried circulating potential materials and pilots of viable business models	Complete the circular economy business model pilot	Rolling review and update on Taipower's Strategies for the Circular Economy	Complete at least one circular product supply model
		T-SDG 13: Take urgent action to combat climate change and its impact	Improve mitigation and adaptation capabilities	**Net decrease of emission intensity at thermal power-generating units (Greenhouse Emissions) from 2016 levels**	Decreased by 6.3%	Decreased by 7%	Decrease by 6.5%	Decrease by 15%	Decrease by 19%
				Climate adaptation action	The preliminary submission of a risk assessment report has been completed	Completed risk assessments for each generation, transmission and distribution unit (hydro and thermal power)	Establish the risk assessment management system for hydro and thermal power plants	Complete the transmission system adaptation strategy	Complete the Company's overall climate risk assessment report and communications
		T-SDG 14: Conserve and sustainably use the marine ecosystems, and prevent the degradation of the marine environment	Conduct marine ecological restoration and cleaning of the coastal environment	**Marine ecological restoration, conservation and development of marine pastures**	Plan the Linkou Marine Pasture	Implemented one marine ecological restoration and conservation project and conducted marine pasture research	Complete the research report on the business model for the Linkou Marine Pasture	Complete construction on one marine ecological restoration project, and select marine pasture sites	Complete construction of one marine pasture around a power plant to facilitate marine ecological restoration
		T-SDG 15: Conserve and sustainably use terrestrial ecosystems to ensure the persistence of biodiversity and prevent land degradation	Ecological restoration and environmental maintenance in the areas around power facilities	**Ecological integration plan for power facilities**	Completed the ecological integration project on bat nest boxes for the western Taiwan wind power facility	Constructed at least one ecologically inclusive plan for a power facility	Complete the interim report on the Yongan Wetland ecological integration project at the Xingta Power Plant	Complete the construction of the ecological integration site at the Dajia River Power Plant	Complete at least five ecological integration plans around power facilities to promote ecological restoration and environmental maintenance at power facilities
Practitioner of Corporate Social Responsibilities		T-SDG 1: Strengthen social care services and economic security for the disadvantaged	Deepen social care activities	**Cumulative investments and number of people reached by social care activities**	Invested NT$547 million, reached 49,000 people[4]	Invested NT$550 million, reached 50,000 people	Invest NT$550 million and reach 50,000 people	Invest NT$3.6 billion and reach 450,000 people	Invest NT$6.6 billion and reach 800,000 people
				Cumulative investment in electricity discounts for disadvantaged Groups; Number of beneficiary households	NT$93.76 million, 160,000 beneficiaries	Discounts of NT$91 million, with 160,000 beneficiaries	Discounts of NT$93 million with 160,000 beneficiaries	Discounts of NT$550 million with 1 million beneficiaries	Discounts of NT$1 billion with 1.8 million beneficiaries
				Cumulative investment in Power Development and Assistance Fund and number of beneficiary townships/ districts	NT$2.44 billion invested and reached 102 beneficiary townships / districts	Total investment of NT$2.18 billion, with 101 beneficiary townships / districts and	Total investment of NT$2.4 billion with 101 beneficiary townships / districts	Total investment of NT$15 billion with 600 beneficiary townships / districts	Total investment of NT$27.5 billion with 1,100 beneficiary townships / districts

[4] Due to the impact of the pandemic, many physical events have been canceled. After the pandemic subsides, the Company will fervently organize various activities to increase the number of participants and people reached.

Sustainable Development Profiles	SDGs	T-SDGs	Strategy	Corresponding Targets	Actual Performance Values (As of 2021)	2021 Goals	Short-Term Goals (Until 2022)	Medium-Term Goals (Until 2025)	Long-Term Goals (Until 2030)
Practitioner of Corporate Social Responsibilities		T-SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Dissemination of accurate energy knowledge	**Cumulative number of people reached by diversified energy education**	461,000 people[5]	600,000 people	600,000 people	3 million people	6 million people
				Cumulative number of people reached by online promotions	Approximately 31 million people	21 million people	21 million people	120 million people	220 million people
		T-SDG 11: Make cities and human settlement inclusive, safe, resilient and sustainable	Promote the preservation and rejuvenation of cultural assets connected to the electricity industry	**Sharing of electricity industry cultural assets**	The number of archived heritage assets totaled 904 in the 2021 thematic project inventory	Conducted more than 800 cultural relic inspections at relevant units in 2021 under the themes of the electric industry on outlying islands and transmission and distribution systems	The 2022 inventory outsourced ≧ 500 cases of electricity industry heritage through digital contracts	Complete inspections in each business unit by 2025, and inspect a cumulative number of at least 3,500 cultural relics	Launch an online database of historical relics from the electrical industry in 2028 to create a future cultural resource sharing environment and research platform; Continue to promote social communication and education on cultural power
				Cumulative number of events and participants in annual cultural asset themed exhibitions, forums, book series sharing sessions and other related activities	A new book-sharing session on the topic of the main island's thermal power was been suspended due to the impact of COVID-19[6]	Conducted one book-sharing session on the topic of the main island's thermal power (no special exhibition plan for cultural assets in 2021)	It is expected to hold one forum for publishing the research results of Taiwan's power industry cultural path planning survey	Hold 15 events or host more than 100,000 participants	Hold 25 events or host more than 150,000 participants
				Preserved electricity industry cultural sites	Carried out preliminary work related to the "Taiwan Electricity Heritage Research Center" in coordination with the work schedule of the North Region Construction Office	Carried out the preliminary onsite operations in accordance with the accepted operation period of the North District Department of Construction	The heritage collection management system has been developed and launched, and the Taiwan Electricity Heritage Collection Center has completed the tendering operation	Launch the Taiwan Power Cultural Relic Research Center on the 4th floor of the multi-purpose building in Wan-Lung D/S during the second half of 2022 to promote the research and restoration of cultural relics	1. Launch the Yuan-Hsin Literature and History Library in 2026 as a professional site for research, the display of promotions and the preservation of cultural assets by the parent company and subsidiaries 2. Establish permanent exhibition halls for electrical heritage in the Northern, Central, Southern and Eastern regions of Taiwan in 2030. Commit to the preservation of local electrical literature. Serve as the main medium for the Company's other types of exhibition spaces (museum complex)
		T-SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all	Improve occupational safety	**Employee injury rates**	0.06	≦ 0.15	≦ 0.13	≦ 0.15	≦ 0.1
				Contractor labor injury rates	0.33	≦ 0.37	≦ 0.35	≦ 0.28	≦ 0.18
			Establish a happy workplace culture	**Employee satisfaction with internal communications**	60%	≥ 60%	≧ 57%	≥ 60%	≥ 65%
				Rate of participation in Employees' Heart-to-Heart assistance programs that care for employees (81 in total)	22%[7]	≥ 38%	≧ 23%	≥ 40%	≥ 50%

[5] Due to the impact of the pandemic, many physical events have been canceled. After the pandemic subsides, the Company will fervently organize various activities to increase the number of participants and people reached.
[6] Due to the impact of the pandemic, many physical events have been canceled. In the future, the book sharing sessions will be planned strategically and flexibly (e.g. online publishing conferences, podcast, etc).
[7] Due to the impact of the pandemic, non-essential meetings and events have been reduced; the employee assistance business is not a core technology business and Heart-to-Heart is an informal organization of a concurrent nature, which has affected the implementation results.

Taipower's Sustainability Projects and SDG Performance

Taipower identified five primary UN SDGs that were most closely related to Taipower's operations. These include "SDG 7 – Affordable and Clean Energy," "SDG 9 – Industry, Innovation and Infrastructure," "SDG 11 – Sustainable Cities and Communities," "SDG 12 – Responsible Consumption and Production," and "SDG 13 – Climate Action." In addition, 7 secondary UN SDGs were connected to Taipower's operations. These included "SDG 1 – No Poverty," "SDG 3 – Good Health and Well-being," "SDG 4 – Quality Education," "SDG 8 – Decent Work and Economic Growth," "SDG 14 – Life Below Water," and "SDG 15 – Life on Land." Taipower has also included its own "T-SDG 18 – Building a nuclear-free homeland" as a demonstration of its resolve to promote the sustainable development of electric power.

As one of the leading power companies in Asia, Taipower operates on a scale that necessitates the identification of potential risks and future business opportunities that arise from implementing its sustainable development goals. Taipower actively communicates with stakeholders to facilitate the integration of its business strategies with its sustainable development priorities while enhancing core competitiveness and contributing to global sustainability.

Taipower Primary SDGs

7 AFFORDABLE AND CLEAN ENERGY

SDG7 Affordable and Clean Energy

Ensure access to affordable, reliable, sustainable and modern energy for all

T-SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

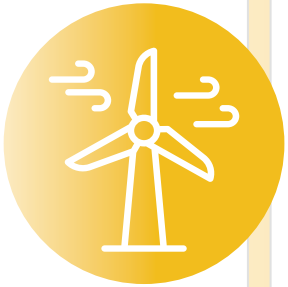
Performance Highlights

The national power supply penetration rate has reached over **99.99%**

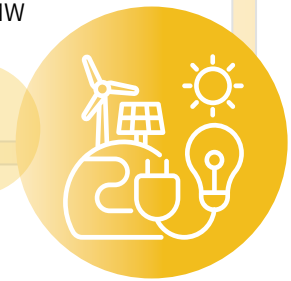
The total installed capacity of solar photovoltaic systems was approximately **283** MW

52 solar photovoltaic fields have been completed as of the end of 2021

The current total installed capacity of wind power plants is approximately **406** MW with **189** wind turbines in **24** wind fields



The total installed capacity of Taipower's renewable energy power plants reached **2,490** MW



The total installed capacity of low-carbon gas-fired power plants reached **1,3149** MW

Taipower's Sustainable Development Plan for Responding to SDG 7

Improve Power Supply Reliability

SDG 7.1 T-SDG 7.1

Taipower actively employs a three-dimensional power supply management mechanism, which incorporates regular review and analysis, risk management implementation, and personnel training to ensure a stable power supply throughout Taiwan. Despite this, ensuring reliable power supplies for offshore islands is more challenging because they are not connected to the main island's grid. Therefore, Taipower is proactively assisting offshore islands with improving their electric systems. For example, the electric system in Kinmen has been improved through the adoption of the group operation model for generators and substations to resolve problems with overly concentrated units and lines at the Tashan Plant. Moreover, Taipower has integrated the Penghu regional grid into the main island's through synchronization and has also completed the first new substation project. In addition to the first domestic 161kV transmission-grade submarine cable, a second 61kV transmission-grade submarine cable also joined the system in November 2021. The 161kV transmission-grade double circuit connection between Taiwan and Penghu makes power dispatching more flexible.

Develop Solar Power Generation

SDG 7.2 T-SDG 7.2

Phase 1 of the Solar Photovoltaics Project was initiated in 2008. By the end of 2021, a total of 52 solar photovoltaic fields had been completed, including the Tainan Salt Field Solar Photovoltaic Project which generates 150MW of power. This is the largest photovoltaic project in Taiwan which has a total installed system capacity of approximately 283MW. The planning for Phase 1 of the Green Energy Project was launched in 2020. It is estimated that 110MW of solar power will be added between 2022 to 2024.

Accelerate Wind Power Generation and Phase 1 of the Offshore Wind Power Project

SDG 7.2 T-SDG 7.2

Since 2000, Taipower has been dedicated to wind power development. By the end of 2021, the Company had completed Phases 1 to 4 of the Wind Power Generation Project, the Zhongtun Wind Power Demonstration Project, Penghu's Huxi Wind Power Project, and Kinmen's Jinsha Wind Power Project. Phase 1 of the Offshore Wind Power Project effectively utilizes the abundant wind energy in the Changhua County Sea area, with a total installed capacity of about 110 MW and an annual generation capacity of 362 GWh. This provides for the annual power consumption of 90,000 households. In 2021, 21 offshore wind turbines were established. For each of these, the initial interconnection has been completed and each has been officially put into commercial operation.

Commence Research on Vehicle-to-Grid Power Back to Grid

SDG 7.a T-SDG 7.1

In 2019, Taipower started research on the use of electric carriers, charging and exchange stations as providers of auxiliary services to the grid. The concept was verified with the transmission of electricity from vehicles to the grid and an established automatic frequency modulation ancillary service function in 2020. In 2021, Taipower worked with Gogoro, the domestic leader in electric scooter manufacturing and services, to build the world's first electric scooter Vehicle-to-Grid (V2G) battery exchange station. In the future, apart from meeting the demand from electric scooters, battery exchange stations are expected to transform into decentralized energy storage stations throughout the country, thus playing the role of "virtual power plants" when needed. This will strengthen grid stability and help to create smart cities.

Develop Hydropower – The Hydropower Plant Construction Project

SDG 7.2 T-SDG 7.2

By the end of 2021, the Taipower's installed hydropower capacity had reached 2.09 GWh (including Independent Power Producers, IPPs). As the government continues to promote renewable energy, Taipower plans to utilize existing water conservancy facilities such as reservoirs, weirs, irrigation channels, and hydropower plants to set up small environmentally friendly hydropower units that are simple in construction and low in cost. At present, the installation of small generating units at small hydropower plants such as the Jingshan's Liyutan Reservoir, the Hushan Reservoir, the Shihmen Reservoir, and the Jiji Weirs are still underway. These small hydropower generators are expected to generate 88 GWh in 2023 with a capacity of 20.6 MW.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

SDG 9 Industry, Innovation, and Infrastructure

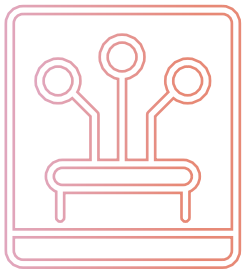
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

T-SDG 9: Build affordable, safe, environmentally friendly, resilient and sustainable transportation
T-SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all

Performance Highlights

The deployment of **80.7** kilometers of optical cables

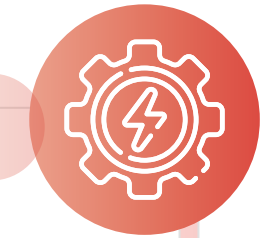
85 sets of fiber optics communication systems



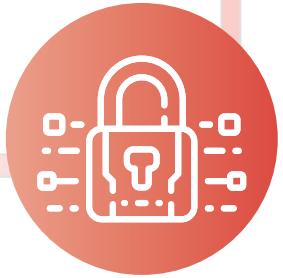
1,225 communication circuits and **215** and sets of backbone (10G) routers was completed in 2021

By the end of 2021, the Advanced Metering Infrastructure (AMI) consisted of more than **1.5** million installations encapsulating **72%** of the country's power consumption information

The ratio of power recoveries for downstream automated feeders (within five minutes) reached **45%**



Strengthened information security and completed an efficacy evaluation of the intrusion detection system (IDS) in **3** domains at the Yunlin Branch, the Tainan Salt Field Solar Photovoltaic facility, and the Taichung Branch



Taipower's Sustainable Development Plan for Responding to SDG 9

Strengthening the Infrastructure of the Power Grid SDG 9.1

Over the years, Taipower has built a dense network around the country to ensure that people are able to use electricity conveniently. Taipower will continue to promote plans that increase the power grid's resilience, that replace old facilities and lines in order to reduce the line loss rate year by year as well as to maintain a high-quality supply of electricity. In consideration of expected global climate changes, the unstable nature of renewables, and the aging of existing power transmission and distribution facilities, Taipower will pursue various prevention and system improvement measures for the entire transmission and distribution system. Taipower will constantly strengthen line maintenance and equipment enhancement to reduce outages and ensure power supply quality.

The Taiwan Power App - AMI Creates Impressive Services

SDG 9.4 T-SDG 8.2

With the advancement of IoT communication technology and the increase in the number of Taipower's smart meters, more and more users are entering the era of smart power consumption. Taipower's AMI is connected to the Taiwan Power App to provide the general public with services such as trial calculations of unpaid bills, trial calculations of tariff plans, early warnings of abnormal power consumption, and proactive notifications of power outages. Through comprehensible charts, users can quickly understand their own power consumption situations. The chart is also coupled with power-saving phrases to remind users of their power consumption status.

Launching an Energy Trading Platform SDG 9.4 T-SDG 8.2

Taipower officially launched its first Energy Trading Platform in 2021. The platform introduced private generation resources into the market. Taipower utilized the Day-ahead Ancillary Service Market trading arrangement to offer three tradable commodities: frequency responsiveness reserve, real-time reserve, and supplementary reserve. Private distributed energy resources can participate in bidding through the platform and become dispatchable virtual units. This allows the private sector to partner with Taipower in maintaining the stability of the domestic grid. Following the launch of the Day-ahead Ancillary Services Market, Taipower actively developed and launched a second trading market. This was a Capacity Reserve Market that will build and improve the electricity market.

To build the first energy trading platform in Taiwan, Taipower introduced a distributed energy resource dispatching model to create a real-time, efficient and secure trading platform system. Taipower also took the initiative to cultivate qualified private traders by actively conduct training courses and exams and imparting extensive energy industry knowledge and experience to relevant industry professionals. The establishment of the energy trading platforms also drives private resources into the energy sector, stimulates the market development of related industries, leads technological innovation, and attracts capital inflows. By integrating the private sector, the platform not only helps Taipower to meet its power development and dispatch needs, but also effectively matches renewable generation with demand. As such it is key to implementing energy transformation and moving towards net zero emissions.

Power On for the First Time, The Taiwan and Penghu Grids Are Finally Connected SDG 9.1 T-SDG 8.12

In the past, Taiwan and Penghu had independent generation systems that did not affect each other. However, the demand for and cost of electricity in Pehghu has been increasing. Coupled with concerns about grid stability, the construction of a Taiwan-Penghu cable became imperative. After years of planning, this connection was finally completed at the end of October 2021. By connecting the Penghu system to the Taiwan system through submarine cables. The Penghu grid has gone from being "off-grid" to "on-grid" and its reliability has been enhanced, opening a new page for the Taiwan grid.

Importantly, the cable will also allow the green energy of Penghu to be shared with Taiwan in the future. Therefore, the development of the Taiwan-Penghu grid has multiple benefits including energy transformation, improved standards of living and economic opportunity, and environmental protection. The completion of the project is a major benchmark in Taipower's green energy development.

11 SUSTAINABLE CITIES AND COMMUNITIES

SDG 11 Sustainable Cities and Communities

Make cities and human settlements inclusive, safe, resilient and sustainable

T-SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Performance Highlights

Assisted the Pingtung County Government in establishing

7 disaster prevention microgrids and provided emergency backup for **72** hours of uninterrupted power

Up to **3,085** employees participated in the air conditioner in every classroom project

completing the installation of air-conditioning and independent power systems in nearly **3,500** elementary and high schools

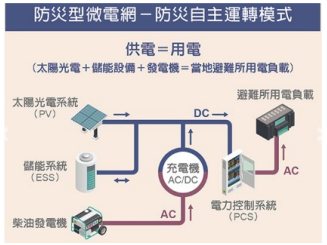
Invested over NT$ **600,000** in art rental events and exhibitions

Taipower's digital collection is shared with the public, and more than **2,000** cultural relics have been inventoried

In 2021, the sum of donations reached approximately NT$ **79.64** million for **3,534** neighborhood causes

Taipower's Sustainable Development Plan for Responding to SDG 11

Disaster Prevention Green Energy Microgrid, Uninterrupted Power for Affected Countryside SDG 11.a T-SDG 11.5



In cooperation with Pingtung County Government, Taipower carried out a microgrid construction project covering seven remote villages and towns. These included Jiamu Village in Wutai Township, Xuhai, Dongyuan, and Shimen Villages in Mudan Township, Caopu, Danlu, and Nanshi Villages in Shizi Township. The microgrid, which combines power generation, power storage, and energy management control equipment, forwards all data to the dispatch center at the Taipower Pingtung Branch through technology convergence management. The Branch remotely monitors the grid 24 hours a day. In the event of a power outage, the microgrid will enter into the state of autonomous power supply, which allows it to be self-sufficient for more than 72 hours and to provide for all electrical loads in the area. When a future natural disaster occurs, it can provide essential lighting and subsistence electricity for the disaster prevention and evacuation center and allow operations during the golden rescue time for rural disaster areas.

Air Conditioners in Every Classroom, A Cool Learning Experience SDG 11.a T-SDG 11.1

After the Executive Yuan proposed an "Air Conditioner in Every Classroom" policy in 2020, it took just over one year to overcome various difficulties and complete the installation of 184,000 air conditioners in nearly 3,500 schools across 22 counties and cities ahead of schedule in 2022. During the implementation of the policy, a total of 3,085 participants from Taipower were individually mobilized more than 100,000 times to serve as a communication channel between schools across the country, air-conditioning manufacturers, and Engineering Associations. Taipower completed comprehensive inventory planning including power improvements, air conditioning installations, energy management systems (EMS), solar photovoltaic equipment, etc. Taipower also performed all detailed inspections (including power inspections, operational tests of the air conditioning, and energy management systems, etc.) to ensure the safety and stability of the air conditioning's operation and the power supply in the future.

Cultural Contributions and Inventory of Cultural Assets

SDG 11.4 T-SDG 11.4

In practicing a sustainable development philosophy and taking responsibility for its cultural inheritance, Taipower proactively promotes the preservation of cultural assets and conducts related cultural asset inventories, publishing, file management, and other operations. Taipower carries out the inventory of its cultural and historical materials yearly in a theme-based manner. It then preserves and exhibits the literary and historical materials from Taiwan's electrical industry, and facilitates the sharing and revitalization of resources. In 2021, Taipower conducted an inventory on the topics of Island Firepower and the Transmission and Supply System. Keynote speeches and forums on cultural resources – Protecting Cultural Assets Is Up to Us, and a presentation on the results of the cultural asset inventory in the transmission and supply system – were also held to present results. At meetings, experts and scholars in fields of related cultural asset preservation were invited to participate.

Accelerate the Popularity of Electric Vehicles (EV) and Achieve the Net Zero Target, Taipower Launches Dedicated Meter and Dedicated Tariff

SDG 11.2 T-SDG 11.2

In response to the domestic growing demand for EVs and to provide solutions suitable for collective housing, buildings, and public charging stations, while taking into account power safety, smart management, and tariff saving, Taipower announced in May 2022 to launch the best charging model of Dedicated Meter, which has three features of low basic fee, high price difference, and long off-peak, combined with Dedicated Tariff. Among them, the dedicated tariff is proposed with reference to the foreign tariff mechanism. By making use of the time difference between peak and off-peak to calculate tariffs, the spread can reach more than $6 per kWh. For users, apart from reducing the electricity cost, it achieves the purpose of decentralized use of charging station power. For the government and Taipower, the above mechanism expands the infrastructure of charging facilities, thereby stimulating the positive development of the EV industry.

Turning Drought Crisis into Opportunity, Hydropower Plants Seek Flexibly SDG 11.a T-SDG 11.8

Under the influence of climate change, alternating droughts and floods have become the norm. Nevertheless, Taipower flexibly adapts the operation and maintenance strategies of its hydropower plants, along with aggressively developing small hydropower and pumped-storage capabilities. Taipower is creating a sustainable vision for hydropower by making sure every drop of water and every kilowatt-hour of electricity is being utilized. Although hydropower only accounts for 2% to 3% of the total generation system, its quick start capability gives it a critical role in system emergency rescue. In addition, hydropower has the advantage of being clean and environmentally friendly. To achieve the government's target of 20% renewables by 2025, Taipower is actively developing small and medium-scale hydropower projects, cooperating with the district Water Resources Office of the Water Resources Agency and integrating smart technology for advanced management to increase its hydropower capacity.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

SDG 12 Responsible Consumption and Production

Ensure sustainable consumption and production patterns

T-SDG 12: Promote the green economy and ensure sustainable consumption and production models

Performance Highlights

Total coal ash production in 2021 was **2.34** million tons

with a reuse rate of **86.2%**

the reuse rate of desulfurized gypsum was **99.5%**

Initiated a 6-year furniture "replacing purchases with leasing" circular economy business model and reduced approximately **6** tons of furniture waste

TPCreative's sales in 2021 were NT$ **1.45** million

The wastewater-reclamation ratio of thermal power plants reached **77.33%**

Taipower's Sustainable Development Plan for Responding to SDG 12

Compilation and Promotion of the Coal Ash Marine Engineering Application Manual

SDG 12.2 T-SDG 12.2

In recent years, Taipower has promoted the reuse of coal ash as an industrial building material and for land reclamation to enhance the reuse rate of coal ash. It has also fostered the use of coal ash as a controlled low-strength backfill material (CLSM) in pipe trench projects. Moreover, Taipower has compiled a Coal Ash Marine Engineering Application Manual as a reference that facilitates other applications of coal ash in various marine engineering projects.

R&D and Promotion of Coal Ash Reuse and Recycling

SDG 12.2 T-SDG 12.2

Taipower's coal ash output in 2021 reached approximately 2.34 million tons. In response to the government's promotion of resource recycling and reuse, the Company actively invested in R&D and promoted coal ash reuse technology. It has also reinforced coal ash production management. Moreover, since coal ash from coal-fired thermal power plants can be used to partially replace cement as a concrete cementing material, most of the Company's coal ash is sold for external reuse as a building material. It has become an excellent example of waste resource recycling.

Collaboration with IKEA in Renovating the 40-Year-Old Staff Cafeteria

SDG 12.5 T-SDG 12.5

For the first time, in the public sector, Taipower has collaborated with IKEA and adopted the concept of "replacing purchases with leasing" as it renovates the 40-year-old staff cafeteria at the Taipower Headquarters. Taipower has been promoting the development of the circular economy in recent years. In 2021, it further promoted the business model of "replacing purchases with leasing" – one of the five business models of the circular economy. This model reduces the cost of purchase, maintenance, and disposal. The cooperation with IKEA is expected to result in a decrease of approximately six tons of furniture waste, equivalent to about 20 tons of carbon emission reduction. This is comparable to the amount of carbon absorbed by 2,000 trees in a year.

The idea of "replacing purchases with leasing" differs from the previous economic model of "mining-manufacturing-use-disposal." By introducing modular products at the beginning to reduce wear and tear, IKEA will continue to provide a warranty. At the end of the contract period, IKEA will reclaim and refurbish the furniture to extend its product life cycle and prolong product life.

TPCreative: A Circular Economy Brand

SDG 12.5 T-SDG 12.5

TPCreative is organized around the concept of circular economies and works to develop cultural and creative products that incorporate Taipower elements from reclaimed and decommissioned materials that are produced in the process of power generation. TPCreative participated in the 2021 Creative Expo Taiwan, using decommissioned wooden cross-beams, transformer boxes, and other electrical materials that were used to create an exhibition area ("Za-Huo-Dian"). The exhibition area presented materials and creative products through a play on words ("Za-Huo-Dian" is a homophone for "grocery store" in Chinese).

In 2021, TPCreative focused on a decommissioned transformer box project. Using the material from streetside transformer boxes, TPCreative developed products such as Taipower Heat Pads, Storage Trays, and Landscape Badges that are practical in daily life, thereby finding new life for decommissioned electrical materials and equipment.

Taipower's Marine Pasture Project

SDG 12.5 T-SDG 12.5

Taipower launched the Linkou Power Plant Marine Pasture project in 2017, using the warm drainage water from the power plant (waste heat) for the farming of high economic value fish. Through the marine pasture experiment, Taipower established a circular economy model for waste heat reuse. Taipower is also studying the reuse of flue gas emitted from power plants through microalgae carbon sequestration technology. Microalgae carbon sequestration absorbs carbon dioxide from flue gas through microalgae, which can reduce carbon emissions and cultivate algae. In addition, Taipower has developed commodities using the carbon sequestration algae. These include fish feed, and nutritional or skin care products.

13 CLIMATE ACTION

SDG 13 Climate Action

Take urgent action to combat climate change and its impacts

T-SDG 13: Complete mitigation actions to combat climate change and its impacts

Performance Highlights

Completed climate risk assessments (strong winds and flooding) for **16** of the Company's hydro and thermal power generation units (excluding those located on outlying islands) to ensure the reliability of the power supply in extreme weather conditions

The gross thermal efficiency (LHV, gross) of all thermal power plants increased from 46% in 2020 to **46.1%** in 2021

Taipower's Power-Saving Service Teams visited **4,231** customers and could potentially save **99.92** GWh of electricity

Provided communities and organizations with power-saving advocacy services. A total of **1,460** sessions were held in 2021 and attracted **170,000** participants

Taipower's Sustainable Development Plan for Responding to SDG 13

Moving Towards Net Zero Emissions SDG 13.2 T-SDG 13.2

An overview of the sectoral targets set in various countries that are moving towards net-zero emissions reveals the critical importance of the energy and power sector. The use of electricity accounts for about 56% of Taiwan's greenhouse gas (GHG) emissions and hence is a key item for carbon reduction. As a state-owned power enterprise, Taipower is responsible for providing national power and promoting energy transition. Within a framework of "low-carbon first, zero-carbon next," Taipower is gradually moving towards net-zero emissions through three different dimensions: supply side, grid side, and demand-side. By reducing coal combustion, increasing green energy and gas to achieve low carbon, further maximizing renewables, and developing carbon-free thermal generation technology, Taipower aims to complete its energy transition by 2030 and accomplish net-zero electricity emissions by 2050.

Adaptation Strategy and Climate Change Actions SDG 13.1 T-SDG 13.1

Taipower's power infrastructure is spread over complex terrain and underlines the importance of coping with the impacts of climate change. In cooperation with the Ministry of Economic Affair's Bureau of Energy Taipower has actively conducted risk assessments for strong winds and flooding at 44 power generation (hydro and thermal power) units (excluding those on outlying islands), for its transmission, and distribution systems, and has established demonstration sites showcasing adaptation strategies for power generation, transmission, and distribution systems as part of the "Energy Industry Climate Change Adaptation Action Guidance Program." The 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 its transmission and distribution systems to reduce environmental impact and strive for sustainable operation.

Main Control Measures for Environmental and Climate Change Risks SDG 13.1 T-SDG 13.1

In accordance with global trends and with reference to the Guidelines of the Global Risk Report issued by the World Economic Forum, Taipower takes climate change and environmental risks into account by identifying two major environmental and climate change risks, specifically environmental impacts caused by environmental incidents and damage to power equipment caused by natural disasters. In addition to assessing risk events in different scenarios, a continuous review mechanism is in place to examine changes in external environmental risks and adjust relevant control measures accordingly to mitigate the impact and effects of environmental and climate change. For example, to mitigate the risk of failure at nuclear power facilities, Taipower has taken measures to limit the impact of natural disasters such as typhoons, strong earthquakes, and floods and implemented annual in-plant emergency planning drills.

Demand Side Management Measures SDG 13.3 T-SDG 13.3

Taipower has implemented various demand side management (DSM) measures, such as time-of-use rates. These set different tariffs through different peak and off-peak periods to reflect the power supply costs at different times and to guide users to reduce or shift power consumption from peak to off-peak periods. The Power-Saving Service Team has also been established to make monthly visits to high-voltage users. Using high-voltage AMI data analysis and simple equipment diagnostic questionnaires (air-conditioning equipment, motors, lighting equipment, etc.) the team helps users keep track of power consumption, inventory power saving potential, and promotes demand response measures to maintain a stable power supply. In 2021, Taipower's Power-Saving Service Team visited 4,231 customers, with an estimated power saving of 99.92 GWh. In terms of the community, the Community Power-saving Advocacy events were held to share relevant knowledge and experience with electricity conservation and to advocate for proper power-saving techniques. A total of 1,460 events were held in 2021, attracting approximately 170,000 participants.

Taipower Secondary SDGs

SDG 1 No Poverty

End poverty in all its forms anywhere

T-SDG 1: Strengthen social care services and economic security for the disadvantaged

Performance Highlights

Invested NT$ **2.414** billion in power development and operational assistance funds that benefited **102** townships/districts

Invested NT$ **540** million in social care activities that reached approximately **49,000** people

Invested NT$ **93.76** million in power preferential rates for disadvantaged groups that benefited **160,000** households

The Seeds of Hope Cultivation Project provided **36** college students with the hometown work-study opportunities in 2021 to reduce their tuition burdens

Taipower's Sustainable Development Plan for Responding to SDG 1

Lighting Up Student Dreams

SDG 1.4 T-SDG 1.3

To fulfill its corporate social responsibility, give back to society, and improve public welfare by caring for the disadvantaged, Taipower has been offering the "Taipower Scholarship" since 1990 to help children suffering from poverty or family misfortunes. The scholarship allows recipients to focus on and continue their studies without interruption by financial factors. Since 2004, special grants have been added to help more families in need of support. A total of NT$1.54 billion has been granted.

Seeds of Hope: The Hope Cultivation Project

SDG 1.4 T-SDG 1.3

Since 2005, Taipower has provided summer job opportunities for indigenous college students from Taitung, Hualien, and Pingtung. Each year, about 75 summer job opportunities are provided. More than 1,025 students have participated so far. The program helps to reduce the tuition burden and provides students with opportunities for self-realization and growth through participation.

Purchasing Agricultural and Fisheries Products for Donation to Disadvantaged Groups

SDG 1.5 T-SDG 1.5

The COVID-19 pandemic affected society in diverse and widespread ways. In 2021, Taipower supported the government's relief policies by purchasing mango, grapefruit and grouper fish. The Company then donated its purchases to schools and disadvantaged groups across the country. The purchases helped farmers and fishermen weather financial difficulties and provided aid to disadvantaged groups thus benefiting all parties.

End-of-Year Care Program for Isolated Seniors

SDG 1.3 T-SDG 1.3

Since 2005, Taipower's power plants and district offices have invited isolated seniors to attend year-end dinner parties during the Lunar New Year and provided a series of connected services at the same time. These include New Year's grocery shopping and home delivery. In order to reduce the risk of cluster infections during the pandemic, group events were replaced with efforts by staff to accompany the elderly to buy New Year goods, and by providing complimentary New Year's dishes, gift vouchers, and household staples. Participating staff also assisted in home cleanups. In 2021, events included 3,425 participants.

3 GOOD HEALTH AND WELL-BEING

SDG 3 Good Health and Well-being

Ensure healthy lives and promote well-being for all at all ages

T-SDG 3: Ensure promotion of healthy lives and promote well-being for all at all ages

Performance Highlights

The air pollution emission intensity was reduced by **65%** compared to 2016

Load reductions occurred **1,200** times which include both voluntary and autonomous actions

By 2022, **69** units had arranged contracting physicians to provide health services

Taipei's North Branch responded to the "Sending Warmth to Support Medical Personnel, Fight the Pandemic Together" campaign and raised approximately NT$**220,000** to purchase appreciation gifts

The Hsiehho Power Plant donated pandemic prevention materials, including **200** face protectors and **200** items of protective clothing, for the use of anti-pandemic personnel

Taipower's Sustainable Development Plan for Responding to SDG 3

Load Reduction in Response to Air Pollution Levels

SDG 3.9 | T-SDG 3.9

Taipower has air pollution management strategies for thermal power plants and implements both voluntary and autonomous load shedding. This occurs during periods of poor air quality and under the condition that a sufficient power supply can be maintained. The mechanism was triggered 1,200 times in 2021, with load shedding occurring a total of 4,382 times.

Taipower's Occupational Health Services

Taipower works to ensure worker health and safety through the "Regulations Governing the Labor Health Protection." The Company employs or contracts medical personnel to take charge of on-site health services, occupational disease prevention, and other health protection matters. As of February 2022, 69 units had arranged for contract physicians to provide on-site health services, emphasizing Taipower's commitment to labor health.

Support for Pandemic Medical Personnel

SDG 3.8 | T-SDG 3.4

During the darkest stages of the COVID-19 pandemic, medical staff devoted their lives to guarding public health. As part of the community, Taipower felt deeply that public affirmation and encouragement were a tremendous support to medical staff. Therefore, Taipower employees at the Taipei North Branch spontaneously launched a fundraising campaign entitled "Sending Warmth to Support Medical Personnel, Fight the Pandemic Together." Within a week, more than 100 employees had raised more than NT$220,000 to purchase appreciation gifts for medical personnel in Taiwan.

Donated Pandemic Prevention Materials for Anti-pandemic Personnel

SDG 3.8 | T-SDG 3.4

The Directors of the Hsiehho Power Plant and the Construction Office personally presented pandemic prevention and other materials to the vaccine station in Zhongshan District, Keelung City. A total of 200 face protectors, 200 items of protective clothing, lunch boxes, and drinks were donated.

Online Pre-Vocational Training to Reduce Pandemic Clustering

SDG 3.8 | T-SDG 3.4

To avoid risk during the COVID-19 pandemic, the previous centralized training model was immediately canceled. On-site training courses were promptly transitioned to delivery through a distance teaching model. This entailed carefully discussions with lecturers about adjustments to the course content and instructional modes to maintain the teaching quality and reduce the risk of infection among colleagues.

4 QUALITY EDUCATION

SDG 4 Equitable Quality Education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

T-SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Performance Highlights

Taipower TV's Primary School Power and other video series have accumulated more than

7.58 million views

Taipower D/S ONE received the **first** prize in the "Outstanding Solution Category - Education Promotion Group" at Global views Magazine's Corporate Social Responsibility (CSR) Awards

In 2021, Taipower organized **1,460** community events on power conservation, that attracted about **170,000** participants

The Firefly Children's Reading Project promoted education in remote areas and served **4,400** people in 2021

Taipower's Sustainable Development Plan for Responding to SDG 4

The Taipower Fan Page SDG 4.7 T-SDG 4.6

Taipower shares knowledge and information related to the electricity industry with the public through various mediums, including the TPC Fan Page and Taipower TV. The number of followers on the Facebook fan page exceeded 240,000 and reached more than 30 million views in 2021. Taipower is able to transform electricity knowledge that is considered rigid into amusing information that is easier to understand. Since its establishment, Taipower TV has accumulated more than 7.58 million views.

Taipower D/S ONE SDG 4.7 T-SDG 4.6

Taipower D/S ONE (D/S ONE) is the nation's first renewable energy exhibition hall. This venue takes advantage of a union station structure (served by Taiwan Railway, Taiwan High Speed Rail, and Taipei Metro) and combines learning with games in a gym-like space that blends athletic activities such as battle ropes, pedaling, and basketball with the characteristics of renewables generation so that the public can better understand renewable energy issues. The facility has also set up maker spaces and cooperated with neighboring schools to provide a platform for public participation in renewable energy education. Through this, members of the public including parents and children, teachers, and students can gain renewable-related knowledge. In 2021, D/S ONE received the first prize in the education promotion group at Global Views Magazine's Corporate Social Responsibility (CSR) Awards.

The Firefly Children's Reading Project SDG 4.2 T-SDG 4.5

Taipower has been sponsoring children's tutoring classes in Hualien and Taitung since 2007. These combine campus tours by a bookmobile, summer reading camps, and other activities to reduce urban-rural learning resource gap and to cultivate children's interest in reading and learning.

Taipower's Community Power Saving Campaigns SDG 4.7 T-SDG 4.6

In response to the government's "energy saving and carbon reduction" policy, Taipower provides free power saving advocacy services for communities and social groups. It also makes use of public assemblies to promote power-saving knowledge and experience, and to advocate effective electricity-saving techniques.

8 DECENT WORK AND ECONOMIC GROWTH

SDG 8 Decent Work and Economic Growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

T-SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all

Performance Highlights

A total of **69,938** participants completed on-the-job training in 2021 as part of the internal human resources training plan

Collective bargaining agreements covered **99.2%** of all employees in 2021

An evaluative Social Return on Investment (SROI) conducted on Taipower's sports teams revealed every **$1** invested will create a social value of **$8.63**

The Taipower Olympics – 2021 Skills Competition attracted **72** units and a total of **1,133** contestants

Taipower's Sustainable Development Plan for Responding to SDG 8

On-the-job Training

SDG 8.5 T-SDG 8.5

Taipower has a comprehensive talent training system, which effectively nurtures professionals needed for the future electricity industry. The system constantly refines the software and hardware utilized by the training system. In response to the outbreak of COVID-19 in early 2020, Taipower promptly launched digital training courses, making digital training the new normal while continuing to cultivate quality talent and professional competence without interruption.

Labor-Management Communication and Group Negotiation

SDG 8.8 T-SDG 8.7

To facilitate labor-management communication, Taipower provides multiple channels for employees to express their opinions and needs. The Company continuously strives to create a labor-management environment that fosters satisfaction and trust. Taipower regularly organizes labor-management meetings, keynote speeches, and training courses and has established an intranet site for employee discussions. Taipower has also signed a collective agreement with the Power Labor Union. To date, 99.2% of employees are covered by the collective agreement.

Exerting Social Influence and Creating a Social Value of $8.63 Through Sports

SDG 8.5 T-SDG 8.6

To fulfill its corporate social responsibility mandate, Taipower has established six competitive semi-professional sports teams. These include men's baseball, men's volleyball, women's badminton, women's volleyball, men's football, and women's basketball. To enable Taipower players to devote themselves to sports performance without worries, Taipower pioneered a players as employees career protection system. The system allows athletes to pursue a "second life" with Taipower after retiring from their sports careers. It also cultivates athletes' professional skills in the workplace.

Taipower Olympics - 2021 Skills Competition

SDG 8.2 T-SDG 8.2

Taipower promotes "innovation, inheritance, and techniques" through organized skill competitions. There are 30 categories of competition, including the traditional core technologies of the power industry, along with innovation achievements and big data applications. By 2021, the competition had been conducting for 53 years. The skills competitions cultivate employees' teamwork abilities and encourage them to develop innovative and valuable new business models.

SDG 14 Life Below Water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

T-SDG 14: Conserve and sustainably use marine ecosystems, and prevent the degradation of the marine environment

Performance Highlights

Taipower released fish seedlings in the seas adjacent to thermal power plants and offshore wind farms.

A total of **6** releases were held in 2021,

with a total of about **1.2** million seedlings released

The Linkou Marine Pasture Project has farmed more than **10** species of fish and **3** species of macroalgae

A total of **2,016** kg of marine debris was removed by **850** people that participated in the Penghu Branch spring beach cleaning

The Orchid Island Nuclear Energy Backend Operation Office held a "Salute to the Ocean" beach clearing event and removed **377** kg of marine debris

Taipower's Sustainable Development Plan for Responding to SDG 14

Fish Seedlings Release at Offshore Wind Facilities and Power Plants

SDG 14.2 T-SDG 14.2

Taipower released fish seedlings in the sea near thermal power plants and offshore wind farms. In 2021, about 1.2 million fry were released into the waters near the Taichung, Datan, Linkou, Hsinta, Tonghsiao plants, etc.

Marine Pasture Project

SDG 14.2 T-SDG 14.2

In 2020, the planning of the Linkou Marine Pasture was concluded. The plan utilizing the warm drainage water from the power plant to farm gentian grouper, cobia, etc. In addition, the carbon dioxide from the plant's flue gas is absorbed through Taipower's microalgae carbon sequestration technology. This allows for carbon reduction and the development of economically valuable by-products.

Coral Restoration, Establishing a Heat-resistant Coral Nursery

SDG 14.2 T-SDG 14.2

The coral reefs in the Southern Bay area are located around Nuclear Power Plant 3 (NPP3), making it one of the most prosperous and beautiful landscapes and ecosystems on the coast of Taiwan. Taipower has made great efforts to protect the richness of the marine coral ecology over the past 30 years. Domestic experts and scholars have been commissioned to conduct coral reef surveys and monitor the South Bay waters. Additional steps have included a diversion dike to guide warm water drainage to the seas surface, and adding thermal dilution cooling water, as well as developing coral transplantation technology and off-site coral nurturing.

Offshore Wind Power in Changhua's Outer Sea Employs the Underwater Bubble Curtain Method to Reduce Noise and Protect Cetaceans

SDG 14.2 T-SDG 14.2

To prevent piling noise from disturbing coastal residents and endangering cetacean populations, Taipower adopted a two-stage approach. First, bubbles are produced on the seabed by a bubble boat. The bubbles absorbed noise as they escape to the water's surface. Second, observers were employed to watch for the presence of cetaceans in the surrounding area. If cetaceans were found, piling was suspended until the cetaceans left. By cooperating with contractors and local fishermen, Taipower developed electricity infrastructure while considering both the environmental and local fishermen.

Penghu Branch Held the Spring Beach Cleaning Event

SDG 14.2 T-SDG 14.2

As part of the Penghu County Environmental Protection Bureau's spring beach cleaning event, Taipower called on the community and local enterprises to participate in paying tribute to the ocean and jointly preserving beautiful beaches and life below water.

15 LIFE ON LAND

SDG 15 Life on Land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

T-SDG 15: Conserve and sustainably use terrestrial ecosystems to ensure the persistence of biodiversity and prevent land deterioration

Performance Highlights

Set up **100** bat nest boxes at Taixi Land-based Wind Power Plant in Taixi Township, Yunlin County

The new Hsinta plant are will remain

3/4

non-developed

Dajia River Plant planted

750 incense cedars, covering an area of

4,500

square meters

Taipower's Sustainable Development Plan for Responding to SDG 15

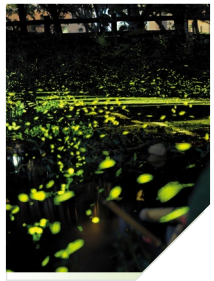
Taixi Wind Power Bat Nest Boxes SDG 15.5 T-SDG 15.5

In 2019, Taipower listed "creating ecological inclusiveness" as one of the six strategies in its Environmental White Paper. Based on the principles of "minimum impact, maintaining original landforms, and maintaining native species," the bat nest boxes at the Taixi Land-based Wind Power Plant in Yunlin was the first successful example of Taipower promoting an ecological inclusiveness project in 2021. During the initial environmental impact assessment, it was found that there were over 400 bats around the site, so a bat ecological corridor was built to allow for habitat compensation.

Arbor Day at the Dajia River Power Plant

SDG 15.2 T-SDG 15.2

On the day before Arbor Day in 2021, Dajia River Power Plant co-organized an "Arbor Day, Let's Afforestation" event with the Forestry Bureau. A total of 30 employees worked together to plant 750 incense cedars covering an area of 4,500 square meters on an idle hillside.



The Cholan Plant Becomes a Firefly Habitat

SDG 15.1 T-SDG 15.1

The Cholan Plant was completed in 2003. From the beginning, the plan for the plant's construction called for the planting of over 6,000 Taiwan native species trees along with soil and water conservation work, and a complete ban on the use of herbicides and other potentially ecologically damaging chemicals. Under the care of Taipower, The Cholan Plant has gradually become a habitat for fireflies, which can be seen in the grasses on both sides of the road in late March every year.

Wild Lily Ecological Restoration at Linkou Plant SDG 15.1 T-SDG 15.1

The *Lilium formosanum* is an iconic native species of Taiwan and could be found throughout Linkou and Bali in the past. The Linkou Plant has devoted efforts to preserving local ecology and put forward a Linkou ecological vision with lily restoration at its core in 2013. Now, traces of *Lilium formosanum* can be seen inside and outside the power plant.

Jinshan's Electric Poles are Well Covered and Insulated to Protect the Endangered Oriental White Stork SDG 15.5 T-SDG 15.5

The Qingshui Wetland in Jinshan District, New Taipei City, is an important waypoint for migratory birds such as the endangered oriental white stork. However, accidental contact with electric poles may result in the death of migratory birds. For this reason, Taipower retrofitted insulation devices on local electric poles, working on more than 16 poles within a month to ensure the safety of endangered transients.

T-18
Building a nuclear-free homeland

T-SDG 18
Building a Nuclear-Free Homeland

Performance Highlights

The operating license of

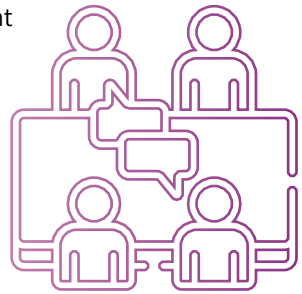
Reactor 1 at the Second Nuclear Power Plant

expired on December 27, 2021, and the unit entered the decommissioning stage

Taipower joined the Nuclear Procurement Issues Corporation

NUPIC

of the United States and regularly participated in meetings to obtain the latest information from the international community

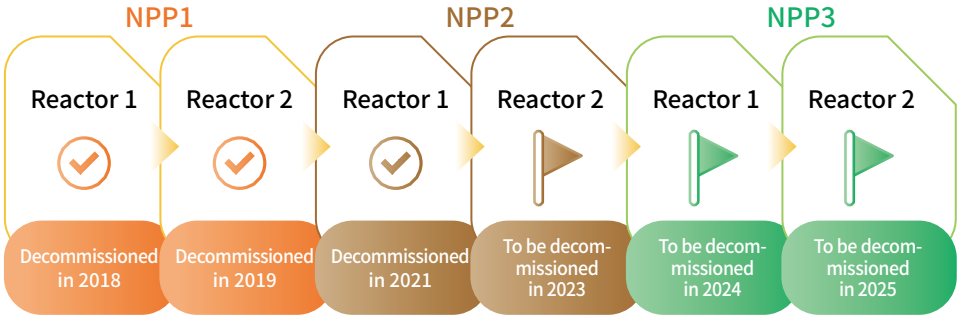


Taipower's Sustainable Development Plan for Responding to T-SDG 18

Taipower's Nuclear Power Plant Decommissioning Schedule

T-SDG 18.1

Taipower is decommissioning its nuclear power plants in accordance with the government's nuclear-free homeland policy. Taipower has stopped all uranium procurement as the current uranium inventory is sufficient for the operation of nuclear power plants until they are decommissioned. A total of three nuclear power plants have been commissioned in Taiwan. The estimated and actual decommissioning schedule is as follows:



Ensuring Nuclear Power Safety with Defense-in-Depth

T-SDG 18.4

Taipower adheres to the concept of defense-in-depth to manage matters related to nuclear energy. This requires the highest standard of design, construction, and supervision of quality control for nuclear energy facilities during the design phase. Subsequently, to ensure the safety of nuclear energy there are four lines of defense, (1) prevention, (2) mitigation, (3) emergency preparedness, and (4) ultimate response guidelines (strategy) to minimize risk.

Nuclear Energy Management and Incident Response Mechanisms

T-SDG 18.4

Taipower prepares for nuclear energy management and incident response at three levels: (1) routine preparation, (2) incident response, and (3) post-incident restoration. In terms of routine preparation, the Company organizes periodic training sessions for emergency workers to maintain incident response capabilities. At least one plant exercise is organized each year. Expert and academics are invited to review the exercises before management-based performance indicators are implemented. Results are also reported to the Atomic Energy Council to demonstrate the preparedness of nuclear power plants. With regard to incident response and post-incident restoration, in the event of a nuclear accident, Taipower will actively cooperate with government agencies in accordance with the "Nuclear Emergency Response Act" and commence work on related restoration tasks.

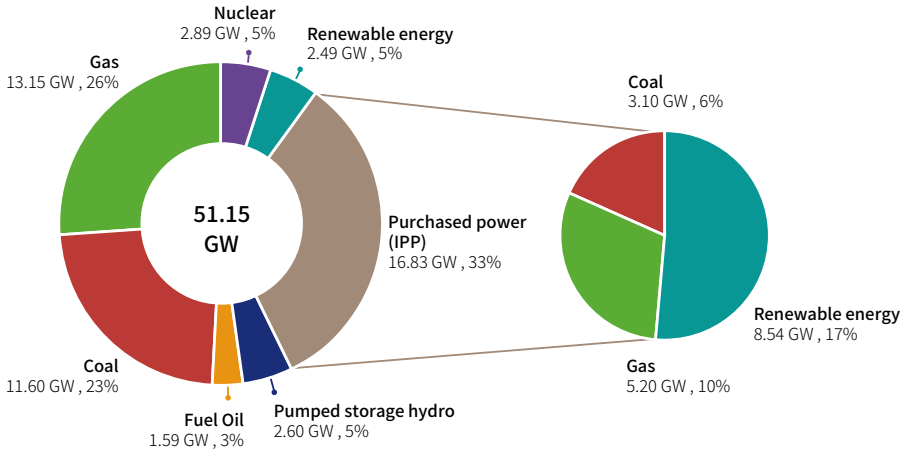
Conclusion

As one of the leading companies in the Asian power industry, Taipower has developed sustainable development plans for fulfilling SDGs and is ahead of schedule in addressing important sustainability issues such as energy transformation, digital transformation, and developing a circular economy. However, a comprehensive observation of sustainable development trends has shown that there remain many uncertainties and emerging risks for the future of the power industry. Taipower must adopt open and innovative approaches to increase the resilience of the Company and to overcome challenges in order to create a sustainable future.

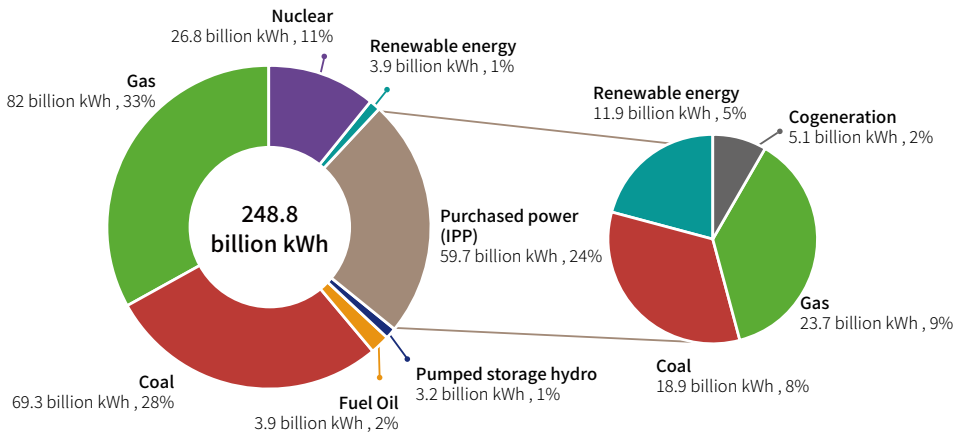
Taipower is committed to pushing forward sustainable development and developing a sustainable development plan, starting from five development profiles that determine Taipower's short, medium, and long-term plans for sustainability. Moreover, Taipower is devoted to communicating with stakeholders, sparing no effort in pursuing sound environmental, social, and corporate governance. In the future, Taipower will continue to maintain its enthusiasm with the vision of "transforming into a prestigious, trustworthy world-class power utility group," while continuing to expand Taipower's sustainable influence.

Appendix | Corporate Highlights

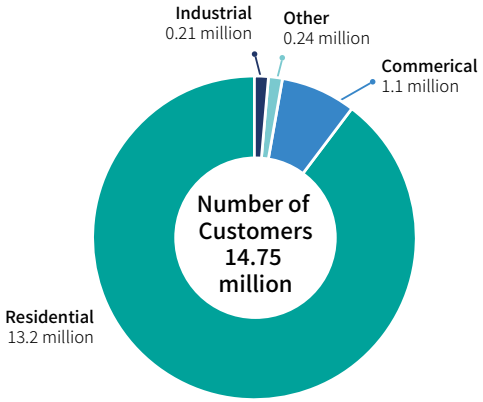
Installed Capacity in 2021



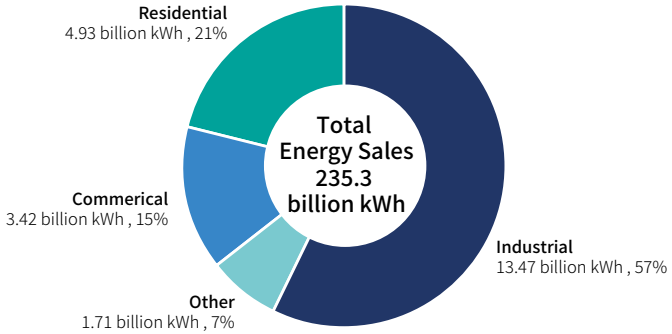
Net Generation and Purchase Power in 2021



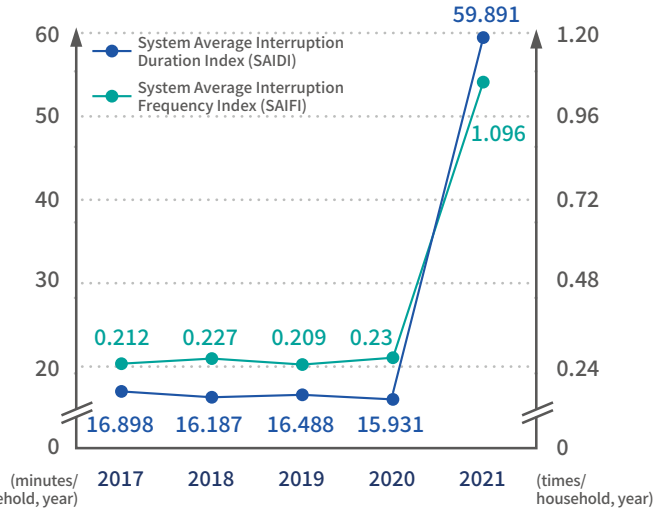
Number of Customers in 2021



Energy Sales in 2021

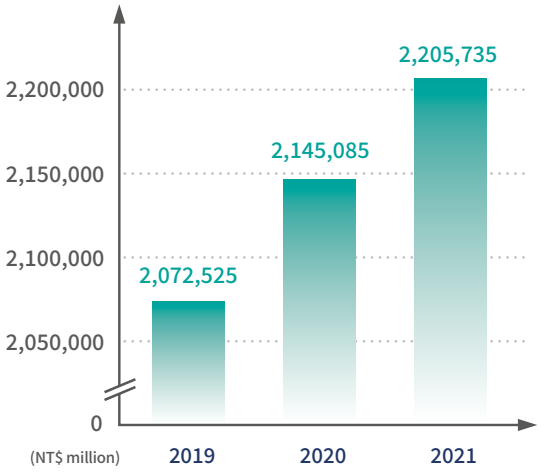


System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) from 2017 to 2021

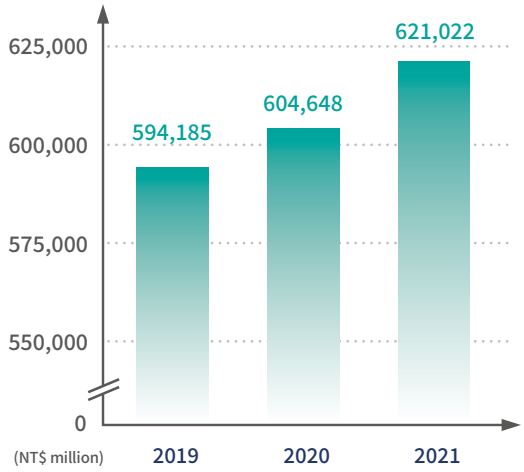


Note: Excluding power outage incidents on May 13 and May 17, the average interruption frequency per household in 2021 was 0.233 (times/household, year), and the average interruption duration per household was 16.376 (minutes/household, year)

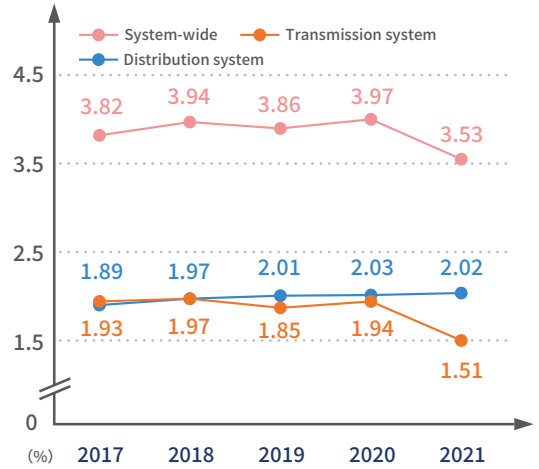
Total Assets



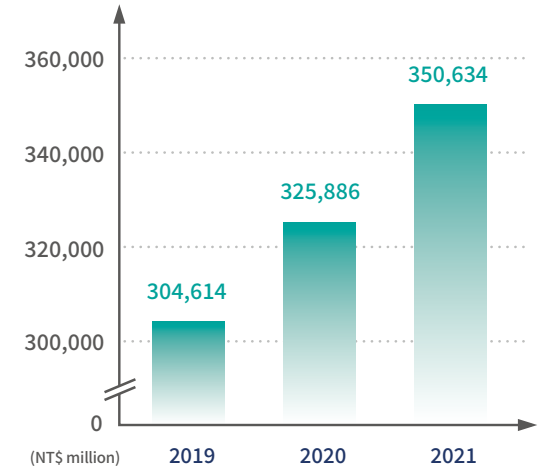
Operating Revenue



Line Loss Rate from 2017 to 2021



Stockholders' Equity



Net Profit/Loss Before Tax