2021 Taiwan Power Company

Sustainable Development Goals Report

Table of Contents

The Implications of SDGs for Taipower's Sustainable Development

Taipower's operating sites are scattered throughout Taiwan. They are closely linked to the development of Taiwan's industries, and profoundly affect livelihoods, the natural environment and the social culture of Taiwan. As it faces multiple risks and opportunities, Taipower not only considers its own short-term survival, but also places a considerable emphasis on sustainable development through a business strategy that seeks to pursue sustainability and to increase the resilience of the enterprise. As the driving force behind Taiwan's industrial development, Taipower is committed to developing a consensus on sustainability. 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 strategy goals.

Taipower organized its first SDG seminar in February 2019. The seminar encouraged internal consensus and invited business units to jointly determine which UN SDGs were relevant for 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 the short (2021), medium (2025), and long-term (2030) goals of its own sustainable development plan.

As sustainability issues emerge and develop, Taipower implements continuous adjustments to its sustainability initiatives each year. In 2021, Taipower made reference to the SDG developments at international benchmark power companies and the 2021 World Business Council for Sustainable Development (WBCSD) report, along with UN reports on "Sector Transformation: An SDG Roadmap for Electric Utilities", and "The Sustainable Development Goals Report 2021". Subsequently, Taipower summarized its own 2020 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, followed by highlights and performance notes for each SDGs. By incorporating the SDGs with its sustainability strategies, 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. Taipower pursues "sustainability" with a long-term and macroscopic view to becoming an indispensable partner for both the public and companies of Taiwan. The Company will continue to advance toward its goal of becoming a world-class sustainable power company.

Disclosure of Taipower's Sustainability Information		United Nations Sustainable Development Goals	Taiwan's Sustainable Development Goals
Taipower's Sustainable Development Section Website	Taipower's Official Website	Introduction to UN Sustainable Development Goals	Introduction to Taiwan's Sustainable Development Goals

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

ESG and Sustainable Development Profiles

Governance

Environment

Society

Provider of Sustainable Power

Leader of Smart Grid Development

Provider of Services for Smart Living

Agent of Environmental Friendliness

Practitioner of Corporate Social Responsibilities

Resource Inputs

Financial Capital

Capital of Taipower: NT$330 billion

Total expenditures: NT$593.5 billion

Human Resources Capital

Total number of employees: 27,836

Number of contracted workers: 1,100

Number of temporary workers: 130

Equipment Capital

Power plants in operation: 23
(including thermal, hydroelectric and nuclear)

Total installed capacity of thermal power plants: 26,340 MW

Total installed capacity of nuclear power plants: 3,870 MW

Total installed capacity of renewable energy power plants: 2,390 MW

Installed capacity of pumped-storage hydroelectricity: 2,600 MW

Installed capacity of thermal power plants: 7,760 MW

Installed capacity of purchased renewable energy: 6,810 MW

R&D Capital

Number of research projects for the year: 422

R&D investment:
R&D expenditure of NT$4.4 billion in 2020
(Including NT$3.5 billion in expenditures and NT$900 million in capital expenditures)

Natural Capital

Natural Gas: 15,075 million cubic meters

Coal: 26.937 million metric tons

Fuel Oil: 758 thousand kiloliters

Nuclear Fuel: 1,555,000 pounds

Recurrent environmental protection expenditure: 3.63 billion

Environmental protection capital expenditure: NT$4.75 billion

*Actual value in 2020.

Social Capital

Number of users: 14.56 million

Power development promotion and assistance fund: NT$2.764 billion

Capacity of demand response: 2,530 MW

Power supply partners:
9 Independent Power Producers (IPPs), 49 cogeneration power providers and 34,997 contracts for renewable energy
(including solar power, wind power, hydro power and others)

Power Generation ▶ Transmission and Distribution ▶ Electricity Retailing

Power Generation

T & D

Electricity Retailing

Taipower electricity generation in 2020

- **Thermal power generation:** 146.97 billion kWh
- **Renewable energy:** 3.42 billion kWh
- **Pumped-storage hydro-electricity:** 3.15 billion kWh
- **Nuclear power:** 30.34 billion kWh

Electricity purchased from external sources in 2020

- **Privately-owned thermal power plant:** 40.6 billion kWh
- **Cogeneration:** 4.1 billion kWh
- **Renewable energy:** 10.4 billion kWh

Total length of power transmission lines: 17,790 circuit kilometers

Total length of distribution lines: 389,119 circuit kilometers

Number of substations: 618

Total number of users: 14.56 million

	Percentage of electricity used (sold) by users	User power supply (billion kWh)
Industry	56%	126.1
Residential	21%	46.7
Commercial	15%	34.5
Others	8%	17.5

Outputs

- **Earnings before tax:** NT$23.4 billion
- **Electricity fee income:** NT$584.2 billion

- **Net amount of generated and purchased power:** 238.9 billion kWh
  - Power generated: 183.8 billion kWh
  - Power purchased: 55.1 billion kWh
- **Total power sold:** 224.8 billion kWh
- **Facility utilization rate:** 80.5%
- **Line loss rate:** 3.97%

- **Greenhouse gas emissions:** 91,518 kt CO_2e
- **Air pollution emissions** (kg/GWh):
  - Emissions of particulate pollutants: 14
  - Sulfur oxide emissions: 125
  - Nitrogen oxide emissions: 158

- **Number of new employees:** 2,321
- **Total number of education and training participants:** 78,385
- **Incidents of work-related injuries:** 10
- **Ratio of work-rated injuries:** 0.035%

- **Number of research reports:** 189
- **Number of papers published:** 118
- **Number of patents/intellectual property cases:**
  - 55 in the Republic of China
  - 1 in the United States

- **Customer satisfaction rate:** 95.7 points
- **Number of charity events:** 936

Taipower's Sustainable Development Plan

Taipower's Sustainable Development Plan was created by the steering committees of the Sustainable Development Commission (SDC) in 2020. The Company created a Sustainable Development Plan with five major sustainable development profiles, including 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 sustainability strategies with short, medium and long-term goals. Continuous reviews and improvements are implemented each year as key tasks for Taipower's sustainable development.

Sustainable Development Profiles	SDGs	Taiwan SDGs	Strategy	Corresponding Targets	2020 Goal	Actual Performance Value (as of 2020)	Short-Term Goals (Until 2021) ▶	Medium-Term Goals (Until 2025) ▶	Long-Term Goals (Until 2030)
Provider of Sustainable Power	7 AFFORDABLE AND CLEAN ENERGY	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**	2,494MW	2,390MW	2,526MW	3,108MW	3,928MW
				Grid connection capacity of the Taipower system	10,807MW	8,582MW	13,025MW	29,602MW	34,962MW
			Promote low-carbon energy, such as gas-fired power generation to ensure stable power supply	**Cumulative total capacity**	13,149MW	13,149MW	13,149MW	19,945MW	25,924MW
			Improve the power generation efficiency of traditional thermal power-generating units, reduce consumption of fossil energy through recycling, improve the quality of the living environment	**The average power generation efficiency of Taipower's own thermal power-generating units (Excluding externally purchased power)**	Higher than 40%	Higher than 41%	Higher than 40.3%	Higher than 45%	Higher than 47%
	3 GOOD HEALTH AND WELL-BEING	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	**Self-produced proportion of power generation (Renewable energy) in the Taipower System**	7.1% (Approximately 17.4 billion kWh)	5.8% (Approximately 13.78 billion kWh)	9.2% (Approximately 22 billion kWh)	19.6% (Approximately 51.1 billion kWh)	24.1% (Approximately 68 billion kWh)
	13 CLIMATE ACTION	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**	Collect actual data on renewable energy power generation and extreme climate events in the past five years. Complete quantitative assessments of the impact of renewable energy on power supply due to climate change	Completed climate risk (storm and flooding) assessments for 17 of the Company's hydro and thermal power generation units (Excluding offshore islands)	Complete an in-depth risk assessment of the Company's power generation system (Hydro and thermal power plants)	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)
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 rapid auxiliary services for procurement	**Cumulative storage capacity built on owned sites**	Reach 24MW storage capacity (9MW of Self-built + 15 MW of Procured; Continuous adjustment)	Reached 26.5MW storage capacity (11.5 MW of Self-built + 15 MW of Procured; Continuous adjustment)	1. Donglin P/S (10MW) energy storage equipment grid connection 2. Add 15MW of qualified capacity for energy storage in auxiliary services	Reach 590MW storage capacity (160MW of Self-built + 430MW of Procured; Continuous adjustment)	The capacity of energy storage can be increased with the improvement of performance and economy value. Taipower shall implement flexible and continuous reviews based on generation capacity and load conditions
	7 AFFORDABLE AND CLEAN ENERGY 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	T-SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all	Strengthen information security, build a cloud data center, andimprove backbone/regional fiber optic communications capabilities	**Information security protection**	Complete the construction of three pilot sites that integrate all the operations offices in the six power supply regions into the Security Operation Center (SOC) for monitoring	Completed the installation of two intrusion detection systems (IDS) at the Yunlin District Office and the Taichung Power Supply District Office. Construction subsequently will be completed for Taichung Power Plant and it will be included in SOC monitoring	Complete the plans for 32 sites, evaluate the installation sequence of IDS sites and include them in SOC monitoring. Evaluate the benefits of 3 pilot sites and formulate improvement plans	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	Build big data analysis and data sharing platforms	Tender awarded in November 2020	Begin trial operations on the big data analysis and data sharing platform in June 2021. Provide access to the entire company. Taipower will continue to review results and complete construction by the end of November.	Complete the construction of two cloud data centers (Yuan-Hsin and Changhua), which can accommodate 600 cabinets	Complete the construction of a third cloud data center (Taichung), which can accommodate 1,200 cabinets
		T-SDG 8: Promote stained, inclusive and sustainable economic growth, full and productive employment, and decent work for all	Promote applications of big data and AI on operation and maintenance information for transmission systems to reduce the System Average Interruption Duration Index value	**National power outage time (SAIDI)**	16.8 mins/household	15.9307 mins/household	16.7 mins/household	15.7 mins/household	15.5 mins/household

Taipower's Sustainable Development Plan

Sustainable Development Profiles	SDGs	Taiwan SDGs	Strategy	Corresponding Targets	2020 Goal	Actual Performance Value (as of 2020)	Short-Term Goals (Until 2021)	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**	Complete the deployment of a total of 1 million smart meters	Completed the deployment of a total of 1.09 million smart meters	Complete the deployment of a total of 1.5 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
			Refinement of customer services	**Taipower App Memberships**	Reach 300,000	Reached 293,484	Reach 360,000	Reach 600,000	Reach 900,000
				The number of transactions via new technology payment channels for each period	Reach 330,000 for each period	Reached 702,000 transactions	Reaches 630,000 transactions for each period	Reaches 800,000 transactions for each period	Reaches 1,200,000 transactions for each period
		T-SDG 12: Ensure sustainable consumption and production patterns		**Cloud-based services**	Complete function development for cloud payment system	Taipower App provides relocation settlement function and provides a PDF payment certificate download service	Increase cloud certificate download services	Number of downloads of cloud payment receipts reach 100,000	Number of downloads of cloud payment receipts reach 300,000
				Advanced value-added services on the high-voltage user service portal	Increase at least two advanced value-added services on the High-Voltage User Service Portal	Completed two enhanced value-added services on the High-Voltage Customer Service Portal, "Electricity Dashboard" and "Electricity Warning Setting"	Increase at least one advanced value-added service	Accumulate at least four additional advanced value-added services	Accumulate at least six additional advanced value-added services
				Number of visits to the Power Consumption Examination Center website	Number of visits to the website of the Power Consumption Examination Center reach 15,000	As of the end of 2020, website services were used approximately 15,700 times	Number of visits reach 16,000	Number of visits reach 20,000	Number of visits reach 25,000
Agent of Environ-mental Friendliness		T-SDG 12: Ensure sustainable consumption and production patterns	Establish a circular business model	**The proportion of wastewater recycled at thermal power plants**	73%	79%	75%	80%	85%
				Circular product supply model	Complete a manual on coal ash use for marine engineering	Manual of coal ash for marine engineering delivered to the Industrial Development Bureau for review	Inventory of potential circular materials and feasibility trial of developing business models	Complete at least one circular product supply model	Complete at least three circular product supply models
		T-SDG 13: Take urgent action to combat climate change and its impact	Improve mitigation and adaptation capabilities	**Net decrease of emission intensity of thermal power-generating units (Greenhouse Emissions) from 2016**	Decrease by 5.3%	Decreased by 6.52%	Decrease by 7%	Decrease by 15%	Decrease by 20%
				Climate adaptation action	Complete climate risk assessment for each generation, transmission and distribution unit	Kaohsiung District Office became a demonstration site for the electricity retail system	Complete the risk assessment of the Company's power generation system (Hydro and thermal power plants)	Complete climate risk strategies and action plans for major transmission and distribution units	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 marine environment	Conduct marine ecological restoration and coastal environmental cleaning	**Marine ecological restoration, conservation and develop marine pasture**	Implement one marine ecological restoration and conservation project and conduct marine pasture research	Plan the Linkou Marine Pasture	Execute one project in marine ecological restoration and conservation, and conduct marine pasture research	Complete the construction on one marine ecological restoration project, and select marine pasture sites	Complete the 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 persis-tence of biodiversity and prevent land degradation	Ecological restoration and environmental maintenance in the areas around power facilities	**Ecological integration plan for power facilities**	Complete the inspection plan for ecological integration at power facilities, and put forward specific visions for ecological restoration and environmental maintenance in the areas around the facilities	Completed surveys of potential sites and implemented the sequence evaluation indicator system for ecological sites	Plan and construct at least one ecologically inclusive plan for a power facility	Complete at least three ecological integration plans around power facilities to promote ecological restoration and environmental maintenance at power facilities	Complete at least five ecological integration plans around power facilities to promote ecological restoration and environmental maintenance at power facilities

Taipower's Sustainable Development Plan

Sustainable Development Profiles	SDGs	Taiwan SDGs	Strategy	Corresponding Targets	2020 Goal	Actual Performance Value (as of 2020)	Short-Term Goals (Until 2021)	Medium-Term Goals (Until 2025)	Long-Term Goals (Until 2030)
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**	NT$600 million, 70,000 people	Invested NT$539.73 million and reached 36,835 people	Invest NT$550 million, reach 50,000 people	Invest NT$3.6 billion, reach 450,000 people	Invest NT$6.6 billion, reach 800,000 people
				Cumulative investment in electricity discounts for disadvantaged Groups; Number of beneficiary households	NT$87 million, 160,000 beneficiaries	Discounts of NT$91.78 million, 161,871 beneficiaries	Discounts of NT$91 million, 160,000 beneficiaries	Discounts of NT$550 million, 1 million beneficiaries	Discounts of NT$1 billion, 1.8 million beneficiaries
				Cumulative investment in Power Development and Assistance Fund and number of benefited townships/districts	NT$2.5 billion, 100 townships / districts	Total investment of NT$2.17945 billion, 101 beneficiary townships / districts	Total investment of NT$2.18 billion, 101 beneficiary townships / districts	Total investment of NT$15 billion, 600 beneficiary townships / districts	Total investment of NT$27.5 billion, 1,100 beneficiary townships / districts
		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**	500,000 people	Approximately 840,000 people	600,000 people	3 million people	6 million people
				Cumulative number of people reached by online promotions	20 million people	Approximately 25 million people	120 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 electricity industry cultural assets	**Sharing of electricity industry cultural assets**	Conduct more than 1,000 cultural relic inspections at relevant units in 2020 under the four major themes of nuclear energy, distribution technology evolution, sale (purchase) of electricity, and the electric industry on outlying islands	The 2020 project survey resulted in the registering 1,675 artifacts	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	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	Five events, 30,000 participants	Organized one "Charged with Electricity" special exhibition of artifacts; One session of the "Dialogue between Foot Steps and Buildings - 2020 Taiwan Power Company Cultural Asset Forum"; Seven new book launch events / seminars. A total of Nine events were organized for approximately 22,000 participants	Organize one book sharing session on the theme of thermal power on the island. (No special exhibition planned for 2021)	Accumulate 15 events or more than 100,000 participants	Accumulate 25 events or more than 150,000 participants
				Electricity industry cultural assets preservation sites		Carried out preliminary onsite operations in accordance with the accepted operation period of the North District Department of Construction	Carry out the preliminary onsite operations in accordance with the accepted operation period of the North District Department of Construction	Launch the Taiwan Power Cultural Relic Research Center on the 4th floor of the multi-purpose building in Wan-Lung D/S in the second half of 2022 to promote the research and restoration of cultural relics	• Launch the Yuan-Hsin Literature and History Library in 2026 a professional site for research and the display of promotions and preservation of cultural assets by the parent company and subsidiaries • Establish permanent exhibition halls for electric 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 space (museum complex)
		T-SDG 8: Promote stained, inclusive and sustainable economic growth, full and productive employment, and decent work for all	Improving occupational safety	**Employee injury rate**	≦ 0.22	0.17	≦ 0.15	≦ 0.15	≦ 0.1
				Contractor labor injury rate	≦ 0.4	0.42	≦ 0.37	≦ 0.28	≦ 0.18
			Establish a happy workplace culture	**Employee satisfaction with internal communications**	≥55%	56.61%	≥60%	≥60%	≥65%
				Rate of participation in each Employees' Heart-to-Heart assistance programs to care for employees (81 in total)	≥37%	37%	≥38%	≥40%	≥50%

Taipower's SDGs Projects and Performance

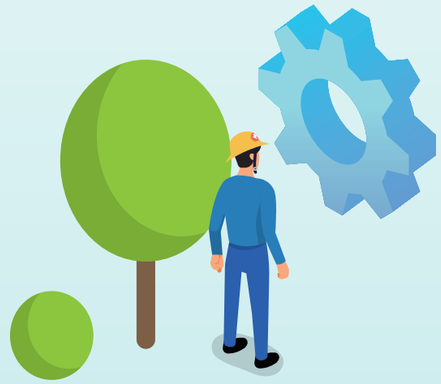
Taipower identified five primary UN SDGs that were most closely associated with Taipower's sustainable operations. They include "SDG 7 – Affordable and Clean Energy," "SDG 9 – Industry, Innovation and Infrastructure," "SDG 11 – Sustainable Cities and Communities," "SDG 12 – Responsible Consumption and 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", "SDG 15 – Life on Land." Taipower has also added SDG 18 "Build a nuclear-free homeland" to demonstrate its resolve to promote the sustainable development of electric power.

As one of Asia's benchmark power companies, Taipower identifies 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.

Primary SDGs

Secondary SDGs



Taipower Primary SDGs

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

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

The current total installed capacity of wind power plants is approximately **297** MW with **168** wind turbines in **17** wind fields

The average cost of power generation and purchase for 2020 was NT$**2.02**/kWh

The total installed capacity of Taipower's renewable energy power plants reached **2,390** MW

The total installed capacity of solar photovoltaic systems was approximately **283** MW and **53** solar photovoltaic fields have been completed as of the end of 2020

The total installed capacity of low-carbon gas-fired power plants reached **13,149** MW

Taipower responds to SDG 7's Projects

1. The Current Status of Hydroelectric Development

SDG 7.2 T-SDG 7.2

By the end of 2020, Taipower had an installed capacity of 2.09 GWh of hydroelectric power (conventional hydroelectric power including IPPs). As the government continues to promote renewable energy, Taipower plans to utilize existing water conservancy facilities such as reservoir weirs, irrigation channels, and hydropower plants to set up additional small environmentally friendly hydropower generating units that are simple to construct and low in cost. At present, small hydropower plants such as those at the Jingshan Hydropower Facility and in Phase 1 of the Island-Wide Small Hydropower Project are still under construction. Small hydropower generation units are expected to generate 88 GWh in 2023 with an installed capacity of 20,566 kW.

2. The Current Status of Wind Power Development

SDG 7.2 T-SDG 7.2

Since 2000, Taipower has been dedicated to wind power development. By the end of 2020, the Company had completed the Zhongtun Wind Power Demonstration Project, phases 1 to 4 of the Wind Power Generation Project, the Penghu Huxi Wind Power Project, and the Kinmen Jinsha Wind Power Project. There are currently 17 wind fields and 168 wind turbines in operation with a total installed capacity of approximately 297 MW. Additionally, the Offshore Wind Power Project, which is in its first phase, effectively utilizes the abundant wind energy at sea in the Changhua County area. The project will have a total installed capacity of about 110 MW and an annual generation capacity of 362 GWh. By the end of 2020, two wind turbines had been installed and work had proceeded to the interconnection test phase. It is expected that the security dispatch of all units will be completed by October 31, 2021.

3. The Current Status of Solar Photovoltaic Development

T-SDG 7.2

Taipower began the first phase of its Solar Photovoltaics Project in 2008. By the end of 2020, a total of 53 solar photovoltaic fields had been completed, including the Zhangbin Solar Power Plant (100MW) and the Tainan Salt Field Photovoltaic Project (150MW) which were inaugurated in 2019. The two solar photovoltaic power plants occupy an area of approximately 500 soccer fields and they demonstrate Taipower's capacity and resolve to actively develop green energy. The total installed capacity of the system was 283MW. The planning for the first phase of the Green Energy Project was also launched in 2020. It is estimated that 110MW of solar photovoltaics will be added within three years from 2022 to 2024.

4. Increasing the Ratio of Gas-Fired Power Plants and Construction of Power-Generating Units

SDG 7.1 T-SDG 7.1

In order to achieve the goal of becoming a nuclear-free country by 2025, Taipower has planned the construction of 4 major gas-fired power generation facilities. Taipower plans to increase the installed capacity of gas-fired power generation units by 12.26GW within six years and to increase the ratio of gas-fired power generation to 50%. The remaining power generation capacity will be composed of 30% from coal and 20% from renewable energy. This forms a "5-3-2" ratio structure. Among the 4 current projects, one, the Tongxiao Power Plant (consisting of 3 gas-fired combined cycle units), has begun commercial operations. The remaining projects are still under construction and represent 3,160MW of capacity from 3 units at the Datan Power Plant, 3,900MW from the update and conversion of 3 units at the Xingda Power Plant, and 2,600MW from 2 combined cycle gas-fired generation units at Taichung Power Plant. The projects represent a total investment of NT$467 billion. The launch of new gas-fired generation units will meet the growing demand for electricity consumption in Taiwan and will improve air pollution by reducing the use of coal.

Taipower Primary SDGs

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

The performance indicators of power supply reliability include the System Average Interruption Duration Index (SAIDI) and the System Average Interruption Frequency Index (SAIFI).

In 2020, Taipower's SAIDI was **15.931** minutes/household, and the SAIFI was **0.23** times/household

Strengthened the power transmission and substation systems. The total investment in the 7th Transmission and Substation Revision Project is about NT$**236.9 billion** (as of 2021)

A total of **17,790** circuit kilometers of transmission lines and **389,119** circuit kilometers of distribution lines are in operation

By the end of 2020, a total of **29,621** high-voltage AMIs and **1,096,869** low-voltage AMIs have been installed

Strengthened information security and completed the installation of **2** intrusion detection systems (IDS) at the Yunlin District Office and Taichung Power Supply District Office

Taipower responds to SDG 9's Projects

1. A Blueprint for the Power Industry in the Era of Big Data

SDG 9.1

In recent years, Taipower has faced a series of new challenges. In implementing the government's energy transformation policy, Taipower has placed an increased focus on renewable energy. This has necessitated precise weather forecasts that allow the Company to mitigate the effects of intermittent power generation from wind and solar sources. Taipower must now also address "bi-directional power flow" whereby power can be transferred by users back into the grid. These developments have led Taipower to actively invested big data and AI analysis applications. At present, ten units have adopted the "virtual project management" approach and implemented the use of big data in their business development strategies. This has translated into four major initiatives consisting of platform establishment, data governance, talent development, and innovative applications along with the construction of a smart grid. Taipower is now advancing from automation to digitalization and smart applications, and entering the era of an AI-driven power supply that is powered by big data.

2. Automated Monitoring and a Smart Inspection System for Steel Towers

SDG 9.4

At present, there are nearly 20,000 steel towers across Taiwan that are essential to a stable power supply. Taipower has actively planned for automation of and smart applications for monitoring steel towers in recent years. These include plans for introducing drones to help monitor the temperatures of circuits and the conducting of smart inspections. These measures will reduce the time spent by operators and maintenance personnel on visiting sites. Drones can be used to obtain better measurements angles and to improve the quality and quantity of measurements. Taipower has also applied the use of drones for inspections and accident detection in areas that are less accessible. The use of drones also reduce the risks of electric shocks in cases where transmission lines are still in a transmission state. In the future, Taipower plans to incorporate automatic monitoring and smart inspection data into the steel tower maintenance management system to strengthen technological monitoring and control dynamics.

3. Action Plans for Smart Grids

SDG 9.1 T-SDG 8.12

The action plans for smart grids is being implemented in accordance with the "Smart Grid Master Plan" approved by the Executive Yuan. Smart grids are vital drivers of energy transition, industrial transformation and new economic development. They primarily respond to the challenge of renewable energy grid-connection, strengthen the resilience of existing grids to enhance the power supply quality in the face of extreme climates, and encourage user participation in energy conservation to improve power system operating efficiency. The action plan includes future strategies for the smart grid, enhancements for the power system to integrate demand-side and supply-side power, and stabilization of the quality of the renewable energy supply.

4. Kinmen Low-Carbon Island (Smart Grid & Energy Storage Systems)

SDG 9.4 T-SDG 8.12

By the end of 2020, Taipower had completed the installation of a 2MW lithium battery energy storage testing system and a 10.8MW sodium-sulfur battery system in Kinmen. The "supercharging and discharging" capacity of the lithium battery energy storage system is used to provide compensating electricity for short periods of time, reduce the number of power outages, and stabilize the power supply. The sodium-sulfur battery energy storage system is designed for peak load shifting. Its large storage capacity allows the system to store renewable energy generated during the day for use at night. Upon completion, Kinmen's energy storage system not only became Taipower's largest energy storage system, but also the first smart energy storage system that is connected to the grid and is able to receive real-time dispatches. It is a key step in Taiwan's energy transformation and upgrades of the smart grid.

5. Smart Meter Deployment and Applications

SDG 9.4 T-SDG 8.12

Taipower has been actively deploying Automated Metering Infrastructure (AMI) or smart meters. In order to properly utilize the huge amounts of resulting electricity data, Taipower provides value added services such as high and low voltage visualized electricity consumption information, consumption trial calculations, comparisons of information on users in the same area, and other value-added services which can help users to implement voluntary electricity management and to participate in demand response measures. Taipower plans to use smart meters to provide more real-time power consumption information and provide more flexible resources for the power system.

Taipower Primary SDGs

Sustainable Cities and Communities

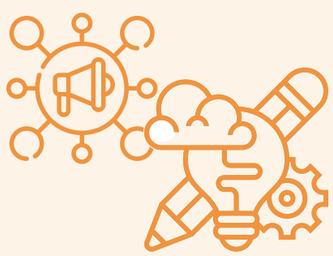
Make cities and human settlements inclusive, safe, resilient and sustainable

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

Taipower's "Light up 13 Layer Remains" project connects attractions in the Shuei-Jin-Jiou area to promote the development of local businesses and lead the growth of tourism. For instance, the nearby Gold Museum received **1.97 million** visitors in 2020

The Company donated approximately NT$**112.53 million** to support community causes in 2020

Organized **9** cultural asset activities with approximately **22,000** participants to promote the preservation and rejuvenation of electrical industry cultural assets



The 2020 project survey resulted in the registration of **1,675** artifacts

Taipower responds to SDG 11's Projects

1. Lighting up the 13 Layer Remains and Promoting Local Rejuvenation in Shuei-Jin-Jiou

SDG 11.4 T-SDG 11.4

"Light up the 13 Layer Remains" is Taiwan's first ever use of cultural art to rejuvenate a contaminated industrial site. It is also the largest instance of a historical building in Taiwan being turned into an international cultural landmark. In the past, the 13 Layer Remains (also known as the Shuinandong Smelter) was unable to serve as a public testament to the history of the local mining industry because of land contamination.

Taipower adopted a remote approach in creating public art to facilitate the site's cultural rejuvenation. The Company hoped that despite the site's contamination, the 13 Layer Remains could be used to positively engage with the public. Moreover, it was hoped the site could serve the interests of local residents, the government, and non-profit organizations by restoring its cultural value. In lighting up the facility, Taipower created connections with other cultural assets in the surrounding area. The Company expects to use the 13 Layer Remains as a starting point in creating other sustainable cultural assets for the region and in affecting local rejuvenation in the Jinguashi area.

2. Localization and Revitalization Results

SDG 11.a T-SDG 11.4

Taipower continues to maintain and repair its cultural assets and to recreate historical sites that are important to the development of the power utility industry. The Company also encourages other participants in the power utility industry to connect cultural assets and historical archives from the industry with social resources. Taipower promotes the co-prosperity of corporations and local communities to form a culture circle for the power industry. As part of this initiative, the Company has refurbished old buildings at its power plants and built local cultural museums that display rare photos, inspection tools, equipment, and other cultural assets. Taipower also cooperates with special cultural exhibitions to plan one-day tours and to provide curated open days at power plants as part of the Open Day of National Monuments. These initiatives help the general public to gain insight into these sites and allow tourists to enjoy the cultural history of the power utility industry and the ecological environment. Moreover, the Company provides exhibitions for and cooperates with outdoor teaching activities at nearby schools.

3. Taipower's Cultural Asset Inventory

SDG 11.4 T-SDG 11.4

Taipower actively promotes the conservation of cultural assets, organizes cultural asset inventories, compiles files, and implements file management in accordance with its management philosophy and cultural heritage responsibilities. Taipower inspects, preserves, and displays cultural and historical data from Taiwan's electric power industry each year and promotes resource sharing and revitalization as part of its corporate social responsibility. In 2020, Taipower conducted inventories based on the themes of "power purchase, sales and distribution systems," "nuclear power generation systems," and "The electric power industry on outlying islands." In addition to cultural asset inventories, the Company published a number of books and exhibitions. Books included "Taipower's Glittering Story of Diligent Operation," "Taipower's Solar Power Electricity Services," and "Lighting Up the Darkness: Tales of Power Supply in Penghu, Kinmen and Matsu." Seminars and forums were also organized that featured guest speakers including the former Minister of Culture, Ms. Li-Chun Cheng who gave a speech on "Diversity, Heritage and Creativity: Cultural Heritage Governance." One forum, based on the theme of Cultural Paths, featured experts and scholars who specialize in the conservation of cultural heritage.

Taipower Primary SDGs

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

Incorporated five major circular economic business models and product life cycles into Taipower's emerging circular economy, and developed Taipower's **Circular Economy Strategy Blueprint** in 2020

Total coal ash production in 2020 was **2.209 million** tons, with a reuse rate of **89.7%**; the reuse rate of desulfurized gypsum was **98.6%**

Sulfur Hexafluoride (SF_6) gas was reclaimed in 2020, reducing the total amount of Carbon Dioxide equivalents (CO_2e) by approximately **1.09 million** tons

The Xingda Thermal Power Plant adopted a "lease-instead-of-purchase" equipment model whose overall value was **3.1%** higher than the ownership of the equipment (value increased by NT$**38,156,104**)

TPCreative used materials from decommissioned equipment to produce cultural and creative products and has so far used **3,000** insulators, **2.95** tons of coal ash, **420** kilograms of sediment, and **464** wooden beams

Taipower responds to SDG 12's Projects

1. Circular Economic Strategies

SDG 12.2 T-SDG 12.2

Taipower began the development of Circular Economy Strategies in 2020 that integrate energy and resources and create circular economic strategies based on product life cycles. Taipower's product is electricity and the two key factors in the production of electricity are sources of energy and resources in the form of electricity infrastructure and equipment. Due to the nature of energy and resources, which operate separately but affect each other, the Company needs to think systematically and construct a loop for reuse and recycling from planning and design, resource procurement, construction of infrastructure, power supply sales and service to waste treatment and recycling. The framework for these circular economic strategies can be divided into four major parts: the innermost circle of which consists of Taipower and its stakeholders with outward expansion to recycling energy, recycling resources, and a development and sharing platform. Taipower is using its circular economic strategies to gradually incorporate the ideas of circular innovation and to expand its business models for the circular economy.

2. Circular Economy World Café

SDG 12.8

In 2021, Taipower hosted a World Café event for the first time. The event mainly targeted employees as the key communication group. The purpose of the events was to break the vertical management structure and use a horizontal communication mode to assemble supervisors of all units and systems above the team leader rank. In a relaxed, but focused atmosphere, the ideas and intelligence of employees from all units were brought together to produce a circular economy action plan for Taipower. In the future, Taipower expects the World Café model to become a fixed feature of its communication and discussion on sustainability issues.

3. Circular Designs using Materials from Decommissioned Taipower Equipment — The Environmental Protection Month "Return Home Special Exhibition"

SDG 12.8 T-SDG 12.5

Taipower organized an Environment Month "Return Home Special Exhibition" in 2021. The exhibition focused on the tangible and intangible "circles" surrounding the idea of home and showcased Taipower's actions and innovations for promoting the circular economy. It also showed Taipower's vision for the future and the integration of creative ideas between different sectors. The special exhibition guided the public's understanding of Taipower's role in the circular economy and how the Company utilizes resources through its life cycle mindset, past cases, future circular economy blueprints, and strategic actions. In addition, Taipower cooperated with the Creative Base (C-Hub) at National Cheng Kung University to exhibit remanufactured furniture produced from decommissioned materials. The exhibition demonstrated how decommissioned materials can "return home" through the implementation of Taipower's circular economy.

4. Wastewater Recycling at the Xingda Power Plant

SDG 12.4 T-SDG 12.4

Taipower's Xingda Power Plant uses NRS vacuum decompression and low temperature water separation equipment for wastewater treatment to recycle wastewater to the manufacturing process for reuse. The Company has also used Xingda's Flue Gas Desulphurization (FGD) Wastewater Improvement project as an opportunity to evaluate the benefits and impact of using NRS equipment for recycling wastewater that can no longer be reused as part of its development of future "zero-wastewater discharge" plans.

Taipower Primary SDGs

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

Taiwan's first state-owned company to publish an **Environmental White Paper**

The gross thermal efficiency (LHV, gross) of all thermal power plants has increased from 45.64% in 2019 to **46%** in 2020

Completed climate risk assessments (strong wind and flooding) for **17** of the Company's hydro and thermal power generation units (excluding those located on outlying islands) to ensure the reliability of the power supply extreme weather conditions

Provided communities and organizations with power-saving advocacy services. A total of **1,559** sessions were held in 2020 and attracted **250,000** participants

Taipower's Power-Saving Service Teams visited **5,410** customers and are expected to potentially save **96.41** GWh of electricity

Taipower responds to SDG 13's Projects

1. Toward the Goal of Low-carbon Electricity

SDG 13.2 T-SDG 13.1

Taipower has adopted a strategy of "increasing gas, reducing coal, developing green and nuclear-free energy" for its future power development. At the same time, in line with the government's energy transition policy, the Company will both vigorously promote the development of renewables and actively plan for low-carbon gas-fired units while improving the environmental protection equipment at coal-fired units. This will serve to reduce air pollution emissions, ensure a stable power supply and allow the Company to achieve its 2025 energy ratio target.

2. Major Management and Control Measures for Environment and Climate Change Risks

SDG 13.1 T-SDG 13.1

Taipower supports global sustainable development trends and makes regular reference to the World Economic Forum's Global Risks Report for information on climate change and environmental risks. The Company has identified two major environmental and climate change risk categories for attention. These include environmental impacts caused by environmental incidents and damage to power facilities caused by natural disasters. The Company assesses different risk scenarios and implements continuous reviews of changes in external environmental risks to adjust its control measures to mitigate the impacts and effects of environmental and climate change. For example, in response to the risk scenario of wind power generation equipment sustaining damage and being unable to operate normally, Taipower has adopted management and control measures that include building a big data analysis system for wind farms to track the status of wind turbines, improving equipment maintenance, and optimizing maintenance schedules and implementing regular inspections of wind turbines.

3. Climate Adaptation Strategies and Actions

SDG 13.3 T-SDG 13.1

Taipower's power infrastructure is spread over complex terrain, which makes coping with the impacts of climate change a critical issue. In cooperation with the Energy Industry Climate Change Adaptation Action Guidance Program from the Bureau of Energy, Ministry of Economic Affairs, Taipower has conducted risk assessments for strong wind and flooding at 44 units (excluding those located on offshore islands). Included units are responsible for power generation (hydro and thermal power), transmission and distribution systems. Moreover, the company has created a simulation case that demonstrate the power generation and distribution system adjustment strategy. Taipower selected new power equipment that could accommodate higher climate risks in 2020, and reinforced the protective capacities of hydro and thermal power plants as well as transmission and distribution systems. Taipower also plans to implement plans across different units that enhance the Company's overall ability to adapt to climate change.

4. DSM Measure

SDG 13.3 T-SDG 13.3

Taipower has implemented various measures for demand side management (DSM) such as setting time-of-use rates to create different electricity rates through peak and off-peak periods to reflect the power supply costs in different periods and to guide users to reduce or shift peak power consumption to off-peak periods. The Company has also established Power-Saving Service Teams which pay monthly visits to high-voltage users. Through the use of high-voltage AMI data analysis and simple equipment diagnostic questionnaires (air-conditioning equipment, motors, lighting equipment, etc.) the teams help users to understand their power consumption patterns, to inventory their power saving potential, and to promote demand response measures that aid the Company in maintaining a stable power supply. Taipower's Power-Saving Service Teams visited 5,410 customers in 2020 with an estimated power saving potential of 96.41 GWh.

Taipower Secondary SDGs

No Poverty

End poverty in all its forms anywhere

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

- Invested NT$**539 million** in social care activities that reached approximately **36,800** people
- Invested NT$**91.78 million** in power preferential rates for disadvantaged groups that benefited **161,900** households
- Invested NT$**2.179 billion** in power development and operation assistance funds that benefited **101** townships/districts
- Actively encouraged employees to participate in charitable activities. A total of **5,588** employees took part in charitable activities in 2020 and performed **20,000** hours of service

Taipower responds to SDG 1's Projects

1. Taipower Team Support Campaign

SDG 1.4 T-SDG 1.3

Taipower has provided long-term sponsorship to 6 first division sports league teams as part of its fulfillment of its social responsibilities. The teams include a men's baseball team, a men's soccer team, a women's badminton team, a women's basketball team, and men's and women's volleyball teams. Taipower leveraged the expertise of its teams to promote sports in schools in remote rural areas and to organize a series of team support events. The players worked to pass on their knowledge and skills to children, so that children who have great potential but a lack of resources can have the opportunity to learn about various kinds of sports. The team support campaign has received the attention of the public and encouraged other sports associations to work together to promote sports in Taiwan.

2. Seeds of Hope: Hope Cultivation Project

SDG 1.4 T-SDG 1.4

Since 2005, Taipower has provided 75 summer job opportunities each year for indigenous college students from Taitung, Hualien, and Pingtung. The jobs are located in student's hometowns. To date, more than 1,000 students have taken part in the program which has helped them reduce the burden of tuition. The program has also provided students with opportunities for achievement and growth through actual experience.

3. End-of-Year Care Program for Solitary Seniors

SDG 1.3 T-SDG 1.3

Since 2005, Taipower's power plants and district offices have invited solitary seniors to attend year-end dinner parties during Lunar New Year. The Company also provide a series of services including free haircuts, the provision of new-year supplies, and inspections of the indoor circuitry of homes to help disadvantaged elderly people enjoy Chinese New Year in safety and comfort. The "Lighting up Love" event held in 2020 attracted approximately 730 participants.

Taipower Secondary SDGs

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

- Attainment of 2025 targets for air pollutant emissions ahead of schedule: The air pollution emission intensity was reduced by **60%** compared to the Environmental White Paper's base year
- The electricity bill reduction for face mask factories totaled approximately NT$**7.6 million**, which benefited approximately **70** companies
- A total of **54,049** participants attended various safety and health training events in 2020
- A full **831** briefings were held on occupational safety and health for contractors with a total of **31,721** attendees in 2020
- **37%** of participation in each Employees' Heart-to-Heart assistance programs to care for employees (81 in total)

Taipower responds to SDG 3's Projects

1. Air Pollution Prevention and Improvement Plan

SDG 3.9 T-SDG 3.9

To improve air quality, Taipower has formulated air pollution management strategies for thermal power plants, plans for setting up high-efficiency air pollution control equipment, and specific short, medium, and long-term goals for continuous air pollution improvements. Taipower achieved its short-term goals in 2020 ahead of schedule and announced ambitious adjustments to its medium and long-term objectives with the aim of reducing emissions (from 2016 levels) by 60% by 2025 and 70% by 2030. Taipower uses low-ash and low-sulfur coal and natural gas and seeks to manage its fuel at the source. It has also set up flue gas monitoring equipment on the chimneys of thermal power plants to maintain optimal equipment performance and minimize the emission of pollutants.

2. Support for the National Face Mask Team and Enhancing the Maintenance of Power Supply Equipment

SDG 3.8 T-SDG 3.8

The Coronavirus pandemic has made the wearing of masks a key public health policy. The resulting demand for masks at the start of the pandemic led mask factories to implemented around-the-clock production. In ensuring a stable electricity supply for face mask factories, Taipower has strengthened the electricity supply circuit maintenance for face mask factories since February 2020. The Company also added equipment inspections for internal and external circuits and established direct contact to help factories quickly report their requirements.

3. Occupational Safety and Health Education and Training

SDG 3.8 T-SDG 3.4

Taipower organizes occupational safety and health training each year in three ways: through appointed external training institutions, by conducting training at dedicated training institutions and through training provided independently by individual units. In 2020, 54,049 participants engaged in training. Moreover, units organized a total of 231 sessions of interactive hazard identification training for 12,670 participants.

Taipower Secondary SDGs

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

The Company achieved its 2025 target ahead of schedule: Annual communication of environmental protection information reached **990,000** people

Reached people more than **0.84 million** times through a diverse range of energy and knowledge promotion channels such as the Taipower Exhibition Center in Southern Taiwan, Cultural Asset Special Exhibitions, and energy conservation seminars in 2020

Accumulated more than **25 million** views online in 2020 through the Taipower Exhibition Centers in Southern and Northern Taiwan and with online promotion platforms such as Taipower TV

Taipower responds to SDG 4's Projects

1. Taipower D/S One

SDG 4.7 T-SDG 4.6

Taipower D/S One (D/S One) is Taiwan's first renewable energy exhibition hall. The venue makes good use of its location near the hub of three types of rail transportation and adopted familiar urban concept of a fitness center. The site fuses sports such as battling ropes, stepping machines, and basketball with the unique characteristics of renewable energy power generation so that the public can learn more about renewable energy through games. The location also has a maker space for collaboration with nearby schools and provides the public with a platform for participating in renewable energy education. Taipower D/S One helps urban residents, families, teachers, and students learn more about renewable energy.

2. The Power Zone Promotes Knowledge of Green Energy

SDG 4.A T-SDG 4.6

The Power Zone special exhibition on transformer boxes communicates concepts from science, life, and environmental aesthetics. It was first held in 2019 and at the invitation of the Hsinchu City Government was held again at the Taiwan Design Expo in 2020. The exhibitions included paintings and art dating back to the 1960s and demonstrates the unique marks left by transformer boxes on people's lives. The three-week exhibition attracted 47,000 visitors

3. Taipower's Environmental Education Exhibition Halls Enhance Popular Science Education on Electricity

SDG 4.A T-SDG 4.6

Taipower operates 12 environmental education sites located both at existing power plants and in independent exhibition halls in Northern, Central, and Southern Taiwan as well as on the outlying island of Penghu. The exhibition halls incorporates the unique features of power generation and regional characteristics of local power plants. Some sites are also used as course locations for nearby schools to expand the scope of environmental education and enhance the public's knowledge of the environment and energy.

Taipower Secondary SDGs

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

Collective bargaining agreements covered **99.3%** of all employees in 2020

Ranked first in corporate governance evaluations for 5 consecutive years

Reduced employee injury rate to **0.17%**

Reduced contractor labor injury rate to **0.42%**

Taipower responds to SDG 8's Projects

1. Labor-Management Communication and Collective Bargaining

SDG 8.8 T-SDG 8.7

Taipower provides multiple channels for employees to express their opinions and to facilitate labor-management communication. Taipower is committed to creating a work environment that satisfies employees and gains their trust. The Company organizes regular labor-management meetings, lectures, and training courses each year and provides an internal website for employee discussions. Taipower has also signed a collective bargaining agreement with the Taipower Labor Union and 99.3% of employees are now covered by the collective bargaining agreement.

2. Incorporating Digital Technology with Talent Development: Organizing Remote Courses in Response to the Pandemic

SDG 8.5 T-SDG 8.2

Taipower has a comprehensive talent development system and effectively develops and trains professional employees. When the COVID-19 pandemic began, Taipower made rapid adjustments to its training system and launched digital training courses in early 2020. The Company continues to organize remote courses online as it works to make digitalization the new normal in equipping its human resources with professional skills.

3. A Heritage of Top Skills — Taipower's Professional Skills Contest

SDG 8.5 T-SDG 8.1

Taipower has organized skills contests each year since 1969. The Company uses the contests to encourage employees to learn and to inspire other employees to continue to enhance their skills, share their experiences, increase the safety and quality of maintenance and repairs, and to reduce power outage times. A total of 1,071 participants took part in 30 competitions as part of the 52nd Skills Contest in 2020. The event facilitated technical exchanges and connected Taipower with the public by inviting guests to view the contests.

Taipower Secondary SDGs

Life Below Water

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

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

Implemented marine ecological restoration and conservation and a marine pasture research project. Completed the planning project for the **Linkou Marine Pasture**

Recycled **2.68 million** tons of wastewater in 2020 with a recycling rate of **79%**

Adopted the "**horizontal deflection drilling method**" for the submarine cable for the Changhua offshore wind power plant to ensure environmental friendliness and support fisheries

Taipower responds to SDG 14's Projects

1. Marine Ecological Conservation: The Linkou Marine Pasture

SDG 14.2 T-SDG 14.2

In 2020, Taipower completed plans for the Linkou Marine Pasture which will use the warm effluent from the Linkou Power Plant for fish farming. The Company also used its microalgae-based carbon sequestration technology to absorb the carbon dioxide from flue gas to reduce carbon emissions and develop other byproducts with economic value.

2. Wastewater Recycling at Thermal Power Plants

SDG 14.1 T-SDG 14.1

Taipower is committed to pursuing a goal of “zero wastewater and sewage discharges.” Rainwater collection (at power plants and dormitories) and wastewater reuse projects have been promoted to reduce the use of tap water inside the power plants. Overall, 2.68 million tons of wastewater were recycled in 2020.

3. Monitoring and Conserving Coral Reefs in Kenting South Bay

SDG 14.2 T-SDG 14.2

The coral reefs in Kenting South Bay are located near the Third Nuclear Power Plant. They form some of the most magnificent sights and ecosystems along Taiwan’s coast. Taipower has worked hard for more than 30 years to maintain and protect the diversity of the coral reef ecosystem. Efforts have included commissioning domestic experts and academics to survey and monitor the reefs, the cultivation of coral in sea areas near the plant’s water intake and discharge ports, adding training jetties designed to direct warm effluent to the surface of the sea, and adding cooling water for thermal dilution. Taipower also worked with the National Museum of Marine Biology & Aquarium, Academia Sinica, and National Center for High-Performance Computing to successfully install four sets of cameras that broadcast the sights below the water around the clock so the public can observe the marine ecology at all times.

Taipower Secondary SDGs

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

Created 12 electricity exhibition halls and sites across Taiwan that are open to the public. They receive approximately **500,000** to **600,000** visitors each year

Reduced the environmental impact of the construction at the Xingda Power Plant and retained **three-quarters** of the area of the new plant for **wetland and carbon emissions reduction**

Taipower responds to SDG 15's Projects

1. Taipower’s Ecological and Environmental Education Results

SDG 15.9 T-SDG 15.9

Taipower remains steadfast in its mission to provide a stable power supply through the transmission, distribution, and sales of electricity. Taipower actively integrates the natural and cultural resources in areas near power plants and district offices and promotes environmental education based on overall community building concepts. In acting as a good neighbor, Taipower uses the local ecology and provides thoughtful guided tours for residents of local communities. Taipower currently has 12 environmental education sites that receive approximately 500,000 to 600,000 visitors each year.

2. Little Tern Conservation at the Zhangbin Solar Power Plant

SDG 15.1 T-SDG 15.1

During the construction of the Zhangbin Solar Power Plant, about 7.4 hectares of land were retained to set up a landscape balancing reservoir. About one hectare of land was placed in the center of the reservoir to create an "ecological island” where little terns nest, spawn, and brood. Taipower also established monitoring and research facilities for academics to use at the site. At the periphery of the plant area, the green belt of a windbreak was cultivated to reduce wind speed, filter salt, and provide a place for birds so they will not be disturbed by the outside world.

3. Designated Reserves at the Xingda Power Plant to Reduce the Environmental Impact

SDG 15.1 T-SDG 15.1

The Xingda Power Plant designated a series of reserves including 41.25 hectares of wetland, 15 hectares of buffer zones, 5.5 hectares of retarding basin, 14 hectares of carbon reduction land, as well as 13.81 hectares of green belt and conservation land. A full three-quarters of the plant area is set aside as environmentally friendly land. To mitigate the effects of construction, an additional silt retarding basin was set up to prevent drainage and flooding during the construction period from affecting the fish farm.

T-18
Build a Nuclear-free Homeland

Build a Nuclear-free Homeland

Taipower has **joined the Nuclear Procurement Issues Corporation (NUPIC)** from the United States and regularly participated in meetings to obtain the latest information from the international community

Reactor 1 of the first Nuclear Power Plant (NPP1) entered the decommissioning stage on December 5, 2018

The operating license for **reactor 2 at the first Nuclear Power Plant (NPP1)** expired on July 15, 2019 and remained in shut-down condition during the period. Decommissioning will be completed within 25 years

The operation of **reactor 1 at the second Nuclear Power Plant 2 (NPP2)** was suspended ahead of schedule in June 2021 because its spent fuel pool was full

Taipower responds to T-SDG 18's Projects

1. Ensuring Nuclear Power Safety with Defense-in-Depth

T-SDG 18.4

Taipower works hard to ensure the safe operation of nuclear power plants and protect the public and environment from ionizing radiation. The President of Taipower has also announced the development of a “Nuclear Energy Operations Safety Statement Policy” to prevent potential hazards. At each nuclear power plant evaluations have been done on special geographic conditions along with historical or possible natural disasters such as earthquakes, tsunamis, typhoons, tornadoes and floods. Evaluations are used to provide defense-in-depth thinking that allows for an appropriate response to any incident that may occure.

2. Nuclear Energy Management and Incident Response Mechanisms

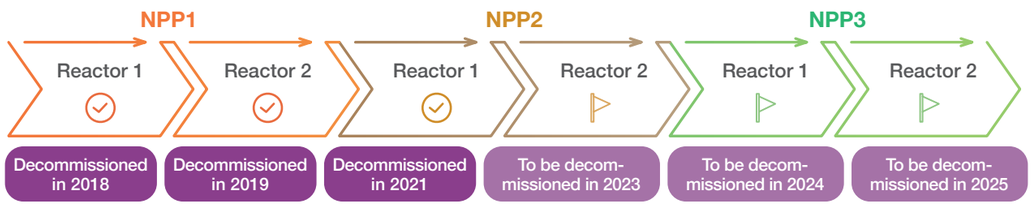
T-SDG 18.4

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.

3. 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:



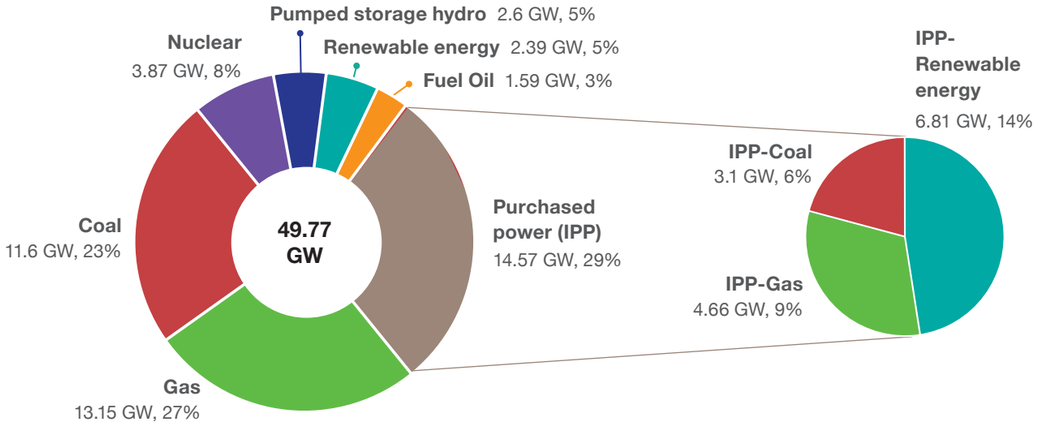
Conclusion

Sustainable development strongly influences the daily lives of the people of Taiwan, and is a goal that enterprises, the public and private sectors, and non-profit organizations are committed to achieving. As a state-owned enterprise, Taipower is tasked with the mission of providing a stable power supply, behaving in an environmentally friendly manner, and implementing national energy policies that meet business and household needs. Accordingly, the achieving the SDGs is a critical goal for every Taipower unit.

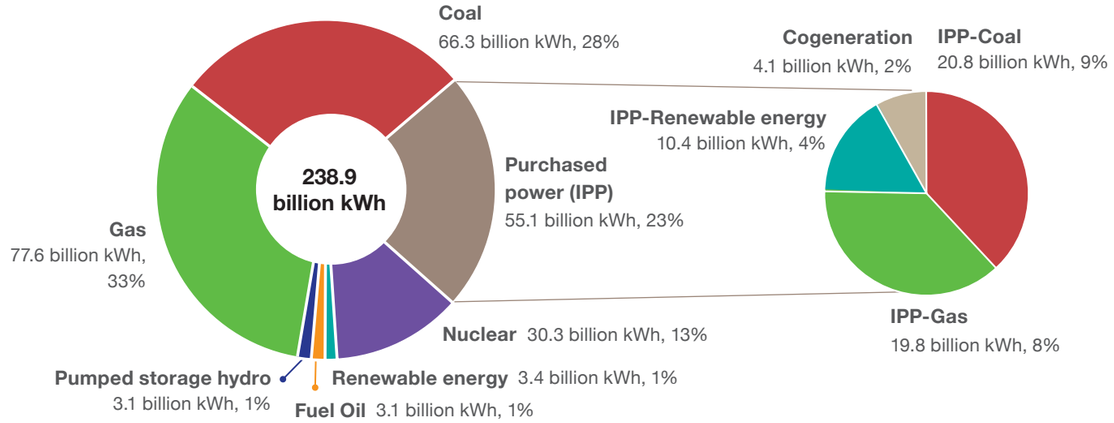
As one of the leading companies in the Asian power industry, Taipower has developed sustainable development plans for fulfilling SDGs and is ahead of schedule in addressing important sustainability issues such as energy transformation, digital transformation, and developing a circular economy. However, 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 will remain committed to communicating with stakeholders and seek to “transform into a prestigious, trustworthy world-class power utility group” in order expand its influence on sustainable development.

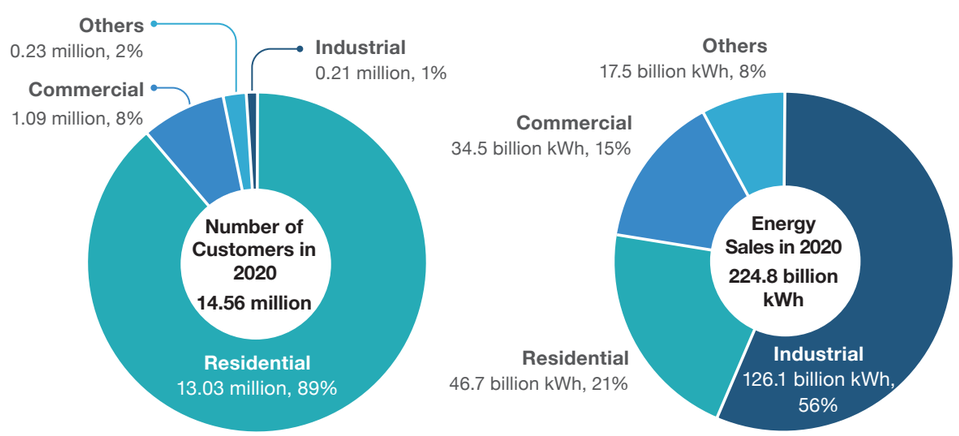
Appendix

Installed Capacity in 2020

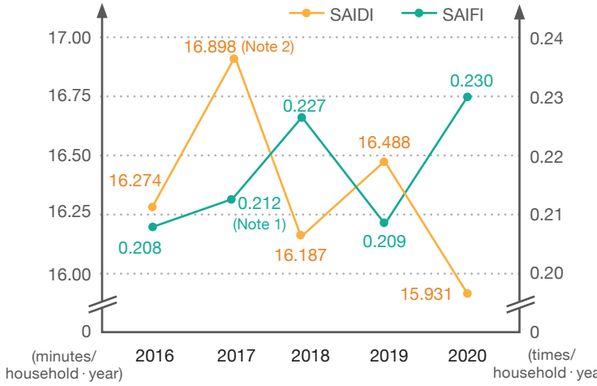


Net Generation and Purchase Power in 2020

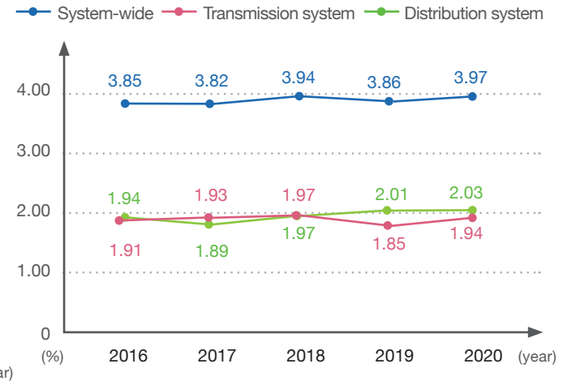




System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) from 2016 to 2020



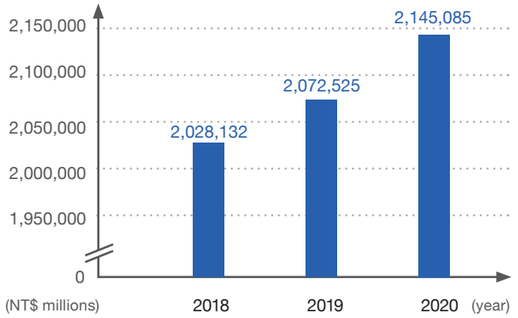
Line Loss Rate from 2016 to 2020



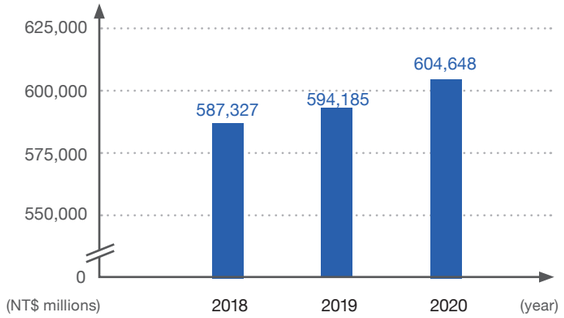
Notes: 1. Data excludes the impact of the blackout on August 15 2017. The blackout was mainly due to the gas supply interruption of CPC Corporation, and Taipower was not held responsible. The average interruption frequency related to the blackout on August 15 was 0.553 (times/household · year).

2. Data excludes the impact of the blackout on August 15 2017. The blackout was mainly due to the gas supply interruption of CPC Corporation, and Taipower was not held responsible. The average interruption duration related to the blackout on August 15 was 32.572 (minutes/household · year).

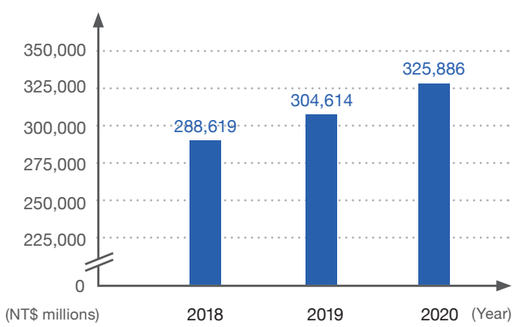
Total Assets



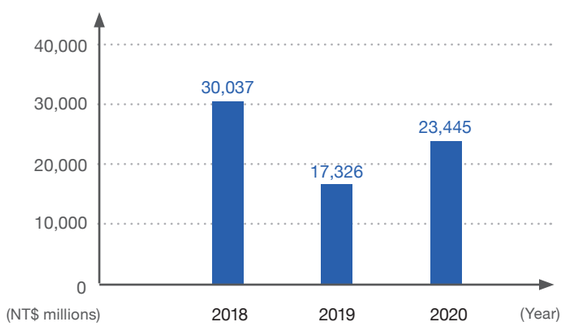
Operating Revenue



Stockholders' Equity



Net Profit/Loss Before Tax



Note: Figures above have been audited by CPAs and compiled in accordance with the International Financial Reporting Standards (IFRS) since 2013. As a state-owned enterprise, figures in Taipower's financial report are based on the final audit accounts of the National Audit Office. Therefore, the aforementioned figures in 2019 are audited final accounts and are slightly different from those in the 2020 Sustainability Report.

Sustainable Taipower

At One with the World