ESG Special Report

Taipower and Sustainability

Corporate Sustainable Power Grid Development Provider of Services for Smart Living

6 Agent of Environmental Friendliness

Practitioner of Corporate Social Responsibilities

Development Profiles	Expanding the Pathway	Action Plans	Measuring Indicators	2022 Performance	2030 Targets	SDGs	T-SDGs
Leader of Smart Grid Developmen	Enhancing Grid Resilience	Establish a smart grid to improve power supply quality and operational efficiency	Reduction in the line loss rate	3.82%	Year-on-year rolling reviews (Referring to the "Smart Grid Master Plan" target of 4.42%)	7 ************************************	T-SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all T-SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable
		Strengthen information security, build a cloud data center, and improve backbone/regional fiber optic communications capabilities	Information security protection	8 IDS systems have been installed and incorporated into the Security Operation Center (SOC) for monitoring and alarm analysis	Continue to improve the overall security protection capabilities of the smart grid		
			Cloud data center construction	This project was approved and issued a construction permit by the Changhua County Government in March 2022	third cloud data center (Taichung),		
		Promote applications of big data and AI on operational and maintenance information for transmission systems to reduce the System Average Interruption Duration Index (SAIDI) value	Reduction in the national power outage time (SAIDI) value	14.936 mins / household / year	Reduce the national power outage time (SAIDI) value to 15.5 min / household / year		
		Promote smart grids and introduce the construction of IEC 61850 smart substations	Construct IEC 61850 smart substations	Completed 37 substations	Rolling reviews will be conducted based on the actual construction of IEC 61850 smart substations		
		Consolidate the information communication and smart management systems, optimize transmission and substation asset management systems, and establish predictive maintenance capabilities	of the transmission	The substation equipment asset management system has incorporated auxiliary equipment. The transmission equipment maintenance management system has been integrated with the oil pressure monitoring system for oil-filled cables	Consolidate and reinforce transmission and substation equipment management to implement CBM goals and improve outage prevention		
	Accelerating Energy Storage Applications	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	(20MW) and Luyuan energy storage projects(20MW) 2. Ancillary services 110.8MW:	improvement of performance and economic value. Taipower shall implement flexible and continuous reviews based on generation capacity and load		
Provider of Services for Smart Living	Implementing Digital Transformation	Plan the IP of the entire fiber optics communication system in Taiwan to increase bandwidth and enhance reliability	Establishment of an ultra- high-speed optical cable communication system around the island	2 10C ID MDI S access routers have	Establish a communication network system for next- generation Communication technology	9 AND INTERESTRUCTURE	T-SDG 11 : Make cities and human settlements inclusive, safe, resilient and sustainable T-SDG 12: Ensure sustainable
		Promote the infrastructure development of low- voltage AMI smart meter infrastructure	Deployment of smart meters	Complete the deployment of a total of 2.108 million smart meters	Complete the deployment of a total of 6 million smart meters after a continuous review of deployment benefits		consumption and production pattern

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Provider of Services for Smart Living	Promoting Energy Conservation	Refine customer services	Taipower APP Memberships  The number of transactions via new technology payment channels for each period	1,155,878  Reached 1.27 million transactions for each period	1,500,000  Reach 1.5 million transactions for each period	9 WOUTH INVESTIGATION AND THE CONTROL OF THE CONTRO	T-SDG 11:  Make cities and human settlements inclusive, safe, resilient and sustainable  T-SDG 12: Ensure sustainable consumption and production patterns
			Cloud-based services	46,000 per year	Number of cloud payment receipts will 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	Add at least 6 additional advanced, value-added services		
			Number of visits to the Power Consumption Examination Center's website	224,000	310,000		
			The proportion of households receiving electricity	100%	Except in cases for which legal restrictions exist, Taipower will provide electricity services and maintain a 100% rate of electricity applications		
		Assist in the promotion of home energy management systems (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	To advance the Company's entry into the home energy management services sector and gain insights into the commercial market development of energy management services, a research project on HEMS value-added service verification was completed in August 2022. This involved international research, market surveys, service plan analysis, and the development of value-added service algorithms (for abnormal electricity usage and family/friend well-being monitoring). Additionally, field demonstrations were conducted for the installation of AMI Route B communication modules and user experience surveys for site deployment, facilitation and to further discussions on commercial applications	Explore and develop value- added applications and provide innovative business models through cross-industry alliances		
Agent of Environmental Friendliness		ange Improve mitigation and adaptation capabilities	Net decrease of emission intensity at thermal power generating units (Greenhouse Emissions) from 2016 levels	Decreased by 7.1%	Decrease by 20%	13 diment	T-SDG13: Take urgent action to combat climate
			Climate adaptation actions	Established the risk assessment management system for hydro and thermal power plants	Complete the Company's overall climate risk assessment report and communications		change and its impacts

Development Profiles	Expanding the Pathway	Action Plans	Measuring Indicators	2022 Performance	2030 Targets	SDGs	T-SDGs
Agent of Environmental Friendliness	Creating a circular business model	Establish a circular business model	The proportion of wastewater recycled at thermal power plants	73%	85%	I	T-SDG 12: Ensure sustainable consumption and production patterns T-SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development T-SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
			Circular product supply models	The pilot project for the circular economy business model has been completed, with the transformation of the staff cafeteria in the headquarters building into a service-oriented model	Complete at least 3 circular product supply models		
		Restore marine ecosystems and cleaning coastal environments	Marine ecological restoration, conservation and development of marine pastures	Completed research on the business model for the Linkou Marine Pasture	Complete construction of one marine pasture around a power plant to facilitate marine ecological restoration		
		Restore the ecological balance in the vicinity of power facilities and maintain environmental preservation	Ecological integration plan for power facilities	Completed the interim report on the Yong'An Wetland ecological integration project at the Hsinta Power Plant	Complete at least 5 ecological integration plans around power facilities to promote ecological restoration and environmental maintenance at power facilities		
Practitioner of Corporate Social Responsibilities		Improve occupational safety	Employee injury rates	0.12	≦ 0.1	1 Workers    Total Property   Total Prop	T-SDG 1: End poverty in all its forms everywhere T-SDG 8: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
			Contract labor injury rates	0.32	≦ 0.18		
		Establish a happy workplace culture	Employee satisfaction with internal communications	83%	≥ 65%		
			Rate of participation in Employees' Heart-to-Heart assistance programs (81 in total) that care for employees	28%	≧ 30%		
		participation Deepen social care activities	Cumulative investments and number of people reached by social care activities		Invest NT\$6.6 billion and reach 800,000 people		
			Cumulative investment in electricity discounts for disadvantaged Groups; Number of beneficiary households	Discounts of NT\$99.94 million with 0.164 million beneficiaries	Discounts of NT\$0.96 billion with 1.76 million beneficiaries		
			Cumulative investment in the Power Development and Assistance Fund and the number of beneficiary townships/ districts	Total investment of NT\$3.063 billion with 120 beneficiary townships / districts	Total investment of NT\$27.5 billion with 1,100 beneficiary townships / districts		

Taipower's Value Chain and Operational Elements

Taipower Sustainable Development Plan

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2 Corporate Sustainable Power Grid Development

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Practitioner of Corporate Social Responsibilities		Disseminate accurate energy knowledge	Cumulative number of people reached by diversified energy education	758,000 people	6,000,000 people	4 SOLITO SOCIETA SOLITO	
			Cumulative number of people reached by online promotions	Approximately 31 million people	231 million people		
		Promote the preservation and rejuvenation of cultural assets connected to the electricity industry	Sharing of electricity industry cultural assets	A total of 633 cases of inventorying and documenting electrical industry cultural relics have been conducted	The "Cultural Heritage Collection Management System and Power Industry Cultural Heritage Website" have been launched, with the target set to be achieved by 2026. This aims to create an environment for sharing cultural resources and a research platform, enabling the continuous use of cultural influence to promote social communication and education		T-SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all T-SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable
			Cumulative number of events and participants in annual cultural asset themed exhibitions, forums, book series sharing sessions and other related activities	Two workshops on Taiwan's power industry cultural heritage trail were organized, as well as one forum to present the results of the planning and research project on Taiwan's power industry cultural heritage trail	Hold 25 events or host more than 150,000 participants		
			Preserved electricity industry cultural sites	The cultural heritage collection management system was completed in December 2022, and is expected to go live in September 2023	2. Establish permanent exhibition		















## **Sustainability Performance**

## **Environment >>**

- 🜟 In order to protect air quality, we have achieved 1,301 instances of voluntary and friendly load reduction
- 눚 💮 In 2022, the Hsinta Power Plant's Yongan Wetland ecological integration project was completed
- In 2022, approximately 1.09 million fish fry were released into the sea near power plants and offshore wind facilities

## **Society** ▶▶

- 🜟 In 2022, the total number of participants in educational training reached 80,822
- in 2022, the total number of participants in health and safety training reached 44,942
- 🜟 In 2022, 821 health and safety-related seminars were held for contractors, with a total of 29,074 attendees
- 🜟 In 2022, 99.3% of all employees were covered by the collective bargaining agreement
- In 2022, there were 3,758 neighborhood work projects and approximately NT\$1,045.27 million in donations

## **Governance** ▶ ▶

- In 2022, we were honored to receive the highest rating of "Excellent" in the Corporate Governance Evaluation for State-Owned Enterprises conducted by the Ministry of Economic Affairs
- By the end of 2022, more than 2.108 million AMI smart meters had been installed. In 2030 we have planned to invest NT\$46.4 billion in smart meters and communication modules and the total deployment of 6 million AMI smart meters is expected
- Achieved another success at the 2022 Taiwan Corporate Sustainability Awards (TCSA) by winning the Taiwan Corporate Sustainability Report Platinum Award for the 4th time, the Taiwan Corporate Sustainability Excellence Award, and the Creativity in Communication Leadership Award

