5.1 Implementing Digital Transformation

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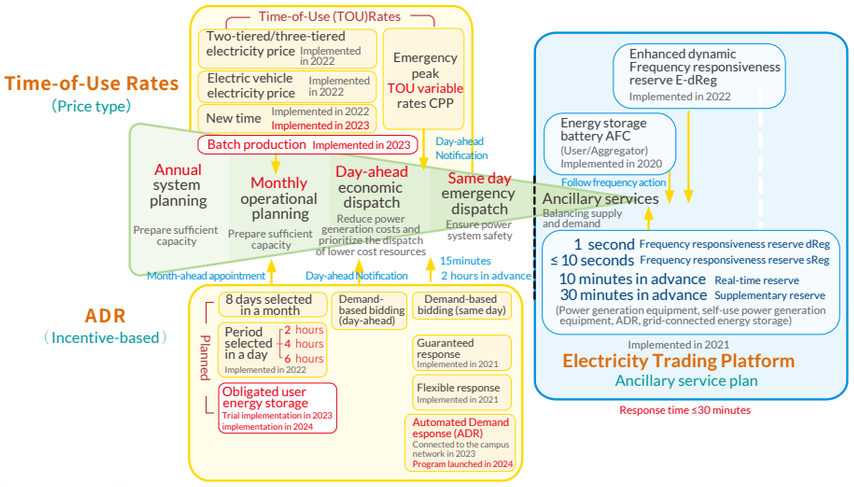
Material Topic:Digital Applications and Information Security

Policy	• In line with the government's digital transformation policy, Taipower established a Digital Development Task Force in 2021 to plan digital advancement through strategic planning, data governance, and digital applications. The strategy strengthens infrastructure, cybersecurity, and talent development, and leverages data analytics and AI to support digital transformation and net-zero goals.
Management Approach	• Promote digital transformation across all power-related fields by introducing AI and generative AI, establishing key cybersecurity performance indicators, adopting a hybrid cloud model (with the Changhua Cloud Data Center scheduled for launch by the end of 2025), and continuing to build fiber optic communication infrastructure for future applications.
Action Plans	• Propose five initiatives: Digital Development Promotion, ICT Infrastructure Enhancement, Innovative Digital Technologies and Applications, Big Data Storage and Analytics, and Renewable Energy Grid Integration Optimization. • Compliance measures for the Cybersecurity Management Act. • Promote overall IT strategy planning and system architecture development. • Strengthen the protection of critical information infrastructure, IT systems, cybersecurity, and personal data. • Promote corporate cybersecurity intelligence sharing and joint defense mechanisms.
Actual Performance in 2024	• Successfully blocked 12.05 million external cyberattacks in 2024. • Maintained stable cybersecurity and customer privacy protection in 2024. • Achieved a communication service reliability rate of 99.999%, surpassing the international standard of 99.85% in 2024. • Fully launched the upgraded ERP system as the core enterprise operating platform in 2024.
Targets for 2030	• Focus on digital applications, ICT infrastructure, innovative technology adoption, and big data analytics, while enhancing renewable energy dispatch to improve overall operational efficiency and intelligence. • Starting in 2029, Taipower will establish an internal OT cybersecurity monitoring center that, in coordination with the Kaohsiung Central Dispatch Center, will be responsible for round-the-clock monitoring and alert handling of industrial control system security.

In accordance with Article 47, Paragraph 4 of the Electricity Act, electricity retailers are required to submit annual plans to the electricity regulatory authority outlining measures to encourage and assist users in saving electricity. Taipower centers its strategy on demand-side management, with demand response and energy conservation as its two main pillars. By fostering an energy-saving culture and promoting related practices, Taipower aims to generate a collective public response that reduces peak loads and advances energy efficiency as a nationwide effort. This initiative supports behavioral change across society and encourages broad public participation in energy conservation and carbon reduction.



Demand Response

Since 1987, Taipower has implemented various demand response load management measures that have generally offered electricity bill reductions as incentives. These measures encourage users to reduce peak electricity consumption or shift it to off-peak hours during periods of system demand. Planned measures include pre-agreed load reduction programs such as the "8 days selected in a month"and"periods selected in a day" types. Immediate measures include guaranteed and flexible responses activated during power supply shortages. Demand bidding measures allow users to submit their own bids for incentive rates. Upon winning the bid, they reduce electricity usage at the specified time. Bidding types include economic, reliable, and combined models. In 2024, Taipower launched a pilot program for automated demand response in residential and commercial sectors.

Time-of-Use Rates

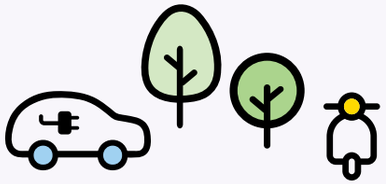
Time-of-Use (TOU) rates apply different tariffs for different time periods to reflect variations in power supply costs and guide users to shift or reduce peak electricity consumption to off-peak hours. Taipower has implemented TOU rates since 1979, and currently, there are 16 TOU rate schemes available for different types of users. TOU rates have been mandatory for high-voltage users since 1989, while low-voltage users may opt in voluntarily. To meet system requirements and offer users more flexible options, Taipower continues to refine and promote TOU rate schemes.

Power Consumption Category	Total Customers	TOU Customers	Ratio (%)
Meter-rated lighting for non-businesses	13,767,042	92,406	0.67%
Meter-rated lighting for businesses	1,047,797	141,944	13.55%
Low-voltage electricity users	311,965	41,532	13.31%
High-voltage electricity users	25,112	25,112	100.00%
Ultra-high-voltage electricity users	720	720	100.00%
Total	15,152,636	301,714	1.99% Note

Note:
1. If only potential customers (residential users with monthly consumption >800 kWh and small businesses >1,600 kWh) are considered, the TOU adoption rate is approximately 22%.
2. With the exception of contracted lighting and power (charged by capacity without seasonal pricing), all other electricity tariffs are seasonal, covering 99% of users.
3. The share of electricity sales revenue under the Lost Revenue Adjustment Mechanism (LRAM): 0%.

Demand Side Management Measures

	Measure	Description	Applicable Customers	Results in 2024
TOU Rates	TOU rates have been used since 1979	The rates reflect the cost of electricity during different periods and encourage off-peak electricity users to reduce energy consumption during peak hours.	Optional for meter-rated lighting and low-voltage customers; applicable to all high-voltage customers.	Evaluation indicates that without the implementation of TOU rates and related measures in 2024, the monthly nighttime peak load during peak months would increase by 1.32 GW compared to 2021 (based on the previous time blocks).
	Launched Simplified Residential/ Commercial TOU rates in 2016	Provides more diverse rates for residential/commercial customers. Price signals are used to guide users to reduce electricity consumption during peak hours, thereby reducing peak load.	Residential, small shops and low-voltage customers.	
	Added new, three-stage TOU rates for standard and low-voltage meter-rated lighting in 2021			
Demand Response Load Management Measures	Implemented"Electricity Consumption Adjustment Measures" (originally "Power Consumption Reduction Measures") in 1987	Provides reduced rates as incentives to encourage customers to reduce electricity consumption during peak hours or to shift to off-peak hours, thereby reducing system peak loads.	(Extra) high-voltage users with a contracted capacity of 100 kW or above, or school users (depending on the program). Examples include factories, schools, etc.	1.On the 2024 nighttime peak load day (July 22), demand response measures reduced peak load by 1.31 GW, accounting for approximately 3.5% of thesystem load. 2. A total of 910 million kWh of electricity was curtailed in 2024, with total bill deductions of approximately NT$1.85 billion and an average execution cost of NT$2.03 per kWh.
	Implemented Demand Bidding Measures in 2015	By allowing users to set their own incentive prices, the program grants greater autonomy and unlocks potential for demand reduction. This helps improve system load profiles, delay the need for new power generation capacity, and reduce the risk of potential power shortages.	Regular high-voltage or higher level electricity users.	
	Implemented"Emergency Response" (now renamed "Flexible Response") and "Contracted Guarantee" (now renamed "Guaranteed Response") measures in 2021	During grid emergencies, users participate in load reductions to enhance demand-side responsiveness	Regular high-voltage and above electricity users.	
	Introduced a Smart Load Adjustment Measure – Campus Air Conditioning Type in 2022	Utilizes ICT to work with demand response providers or smart appliance vendors to remotely adjust user-side device settings-such as increasing air conditioning temperatures or switching to fan mode-for energy savings.	School users at senior high school level or below.	
	A Pilot Program for Residential and Commercial Automated Demand Response was conducted from July to November 2024		Low-voltage residential and commercial users.	
Energy-Saving Diagnostics		Taipower encourages and assists large electricity users in energy conservation. Technical service specialists from regional branches conduct on-site diagnostics of major energy-consuming equipment-such as lighting and air conditioning-in enterprises, government agencies, and schools using professional measurement tools. Preliminary reports with energy-saving recommendations are provided as references for future replacement with high-efficiency equipment.	Users that are frequently in excess of high-voltage usage levels	1.After conducting an energy-saving diagnosis for China Steel Corporation's headquarters,lighting and equipment upgrades were completed, achieving an 11.4% energy-saving rate and an annual reduction of 270,000 kWh. 2.In 2024, Taipower assisted 66 state-owned enterprises and agencies in conducting energy diagnostics, with a total estimated electricity savings of 31.18 million kWh.
Community Energy Saving Campaigns		Taipower offers free power-saving education services for communities and associations. Through community gatherings, the Company promotes electricity conservation, shares relevant knowledge and experiences, and advocates practical energy-saving techniques-such as using high-efficiency products and improving public facility electricity use.	Local communities and associations	A total of 1,375 seminars were held in 2024, attracting approximately 160,000 participants.



Current Status of Electric Vehicle Planning

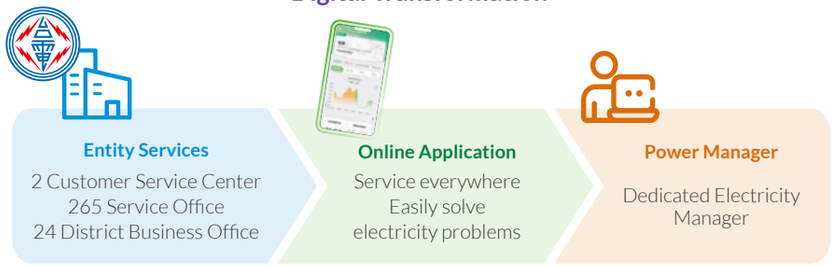
Taipower has drawn on international practices to integrate electric vehicle (EV) charging and battery swapping needs, promote the development of charging infrastructure, and support the growth of the EV market while maintaining grid stability. In 2022, Taipower introduced the "Electric Vehicle Charging and Swapping Facility Tariff," which features three key attributes: low basic charges, high price differentials, and extended off-peak periods. This tariff applies to high-demand, contracted-capacity charging or swapping facilities such as residential building chargers, public or private charging stations, and electric scooter battery exchange stations. In support of government efforts to promote transportation electrification, Taipower has relaxed the application requirements for EV chargers in collective housing and established dedicated electricity pricing schemes. As of December 31, 2024, Taipower had received 7,109 electricity service applications for EV use, of which 5,142 had completed power supply connection, and 1,967 cases were still pending. Among the pending cases, 332 had not been energized for over six months for reasons unrelated to Taipower. The relevant application statistics, special tariffs, and TOU rate selections are detailed as follows:

	Number of New Installations	Number of Cases that Have Begun Power Transmission	Number of Cases that Have Not Begun Power Transmission	Percentage of Electricity Not Yet Transmitted (%)
Electric Vehicle Charging Equipment	7,109	5,142	1,967	27.67 %
Choose Exclusive Electricity Price for Electric Vehicles	1,039	651	388	37.34 %
Select TOU Rate	2,508	1,853	655	26.12 %

5.1.2 Accelerating Digital Transformation

Taipower is steadily advancing undergoing a digital transformation in line with its business strategy. The Company is gradually introducing new technologies to optimize its business model and internal processes, enhance its corporate image and customer value, and explore new operational and business models. To realize Taipower's overarching strategy of "Promoting Digital Transformation," five action plans have been proposed to (1) Drive Digital Development, (2) Advance ICT Infrastructure, (3) Introduce Innovative Digital Technologies and Applications, (4) Enhance Big Data Storage, Analysis, and Applications, and (5) Improve Renewable Energy Grid Integration and Dispatch. Concrete implementation measures have also been formulated.

Digital Transformation



Data is King	Focus on Talent	Based on Information Security
Use technologies such as AI, big data, and IoT to collect and analyze data on markets, customers, products, and competitors, enhancing decision-making efficiency and accuracy.	Cultivate and recruit talents with digital skills, provide platforms for collaboration and learning, and foster innovation and progress.	Establish data governance and protection mechanisms to safeguard company and customer data and privacy, and to prevent cyberattacks.

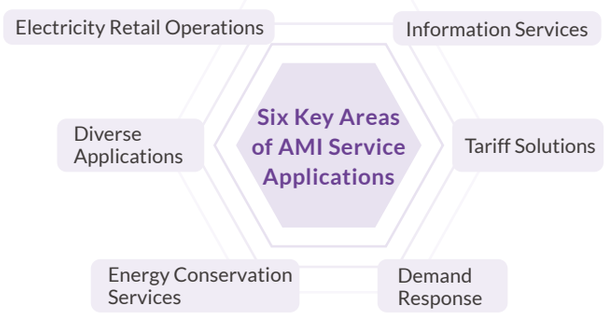
The Introduction of 5G Service Applications

Taipower has identified power applications using 5G technology. In coordination with the Kaohsiung Asian New Bay Area 5G AIoT Innovation Park initiative, Taipower established a 5G AIoT Promotion Office at Nanpu Power Plant (also referred to as the Southern Power Plant) in 2021 to conduct relevant energy application verifications.Using innovative 5G AIoT technology, Taipower provides on-site workers with mobile and fixed video equipment to simplify procedures and reduce operational errors. The project is being implemented in three phases and is currently in Phase 3 system optimization.

Smart Meters (AMI) Usher in a New Era of Energy Management

Taipower has integrated mobile digital technology and big data applications to launch a dedicated "Taiwan Power App" and an "Electricity Usage Diagnosis Center." These platforms offer residential electricity consumption analysis services and serve as integrated platforms for service applications, bill inquiries and payments, case tracking, and push notifications. A dedicated section for AMI services is also included.

As of the end of December 2024, the number of registered Taipower App users reached 2.082 million. These users had linked a total of 2.776 million electricity account numbers (including 634,000 low-voltage AMI users), among which 1.449 million accounts had completed identity verification. With the growing number of low-voltage AMI users, Taipower continues to enhance AMI-related services within the app. Examples include offering energy-saving recommendations based on user questionnaires ("Power Saving Tips") and sending push notifications for power outages, thereby improving overall service efficiency.



Innovative Services via the Taipower Mobile App

Taipower continues to expand payment options and push notification features. For low-voltage AMI users, the app now offers visualized consumption charts, unbilled electricity data, tariff simulation, usage alerts, and residential electricity analysis to meet user needs and enhance service quality.

5.2 Strengthening Information Security

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Product Responsibility and Personal Data Protection

Taipower sets electricity tariffs in accordance with government regulations and manages customer information in compliance with the Personal Data Protection and Electricity Acts. The Company conducts annual reviews of personal data files, examining the necessity of each data field to ensure appropriate protection of personal information. Confidentiality mechanisms are in place for customer information, and identity verification is required for electricity data inquiries. Key databases are monitored in real time through audit systems. Abnormal records are reviewed monthly, and all inspections in 2024 were normal with no violations found.

0 Item

2024 Violations

Personal Data Protection Measures

- Regular Reviews and Updates:Annual inspections and reviews of personal data files and systems.
- Confidentiality Mechanisms:Establish mechanisms to prevent leakage or misuse of customer information.
- Dedicated Task Force: Establish a "Personal Data File Security Management Task Force" to develop and implement the "Personal Data Protection Guidelines" and a "Security Maintenance Plan and Post-Termination Handling Procedures for Personal Data Files."
- Audit Mechanisms: Implement database audit mechanisms to ensure data processing complies with regulations.
- Data Exchange Controls:Strictly manage data exchanges with external entities to prevent information leakage.
- User Consent:Electricity usage information is disclosed or queried only with user consent or legal authorization, and identity verification is required.
- Data Storage:Strengthen storage and handling of electricity registration documents to ensure data security.
- Online Access Restrictions:Limit online access to billing data; display prompts and retain audit logs for internal inquiries.

Information and Communication Security Risk Management Framework

Taipower has established an information and communication security risk management framework that covers both company-level and department-level risk management. In line with the Company's risk management policy, the framework includes risk identification, assessment, control, and monitoring to mitigate the impact of information security risks on operations and to support sustainable development. Taipower's information security policy is based on the ISO/IEC 27001 international standard and covers areas such as system inventory, risk assessment, vendor management, and incident reporting.

In accordance with internal policies, Taipower implements the following information security management measures:

Taipower implements the following information security management measures

- Personnel security management and training
- Vendor relationship security management
- Information security incident management
- Information asset security management
- Network security management
- System access control
- Business continuity planning