

2.5 Strengthening Supplier Management

As a state-owned enterprise, Taipower manages all types of suppliers in accordance with the requirements of laws and regulations. Suppliers must satisfy all environmental, social, and other legal requirements for all services and materials they provide. The Company uses these regulatory criteria to select appropriate partners during its tendering and evaluation processes.

2.5.1 Supplier Management

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Taipower's suppliers include providers of fuel, materials, and equipment necessary for power generation and as well as suppliers of external electric power. The Company monitors the potential risks associated with suppliers with different characteristics and manages their quality, output, and impact on the environment and society. Management of different types of suppliers is described as follows:

Fuel Supplier Management ▶▶

The main fuels used in Taipower's thermal power plants are natural gas, coal, and fuel oil. Nuclear power plants also require nuclear fuel. Taipower adheres to the four strategies of energy supply diversification, long-term supply contracts, safe inventories, and stable coal transportation to ensure stable fuel supplies. The Company provides power plants with fuel promptly and of a suitable quality and quantity to ensure the safety and stability of the power supply. Detailed measures and actions are described below:







Energy Supply Diversification

 <p>LNG</p> <ul style="list-style-type: none"> • Supplied by CPC; Continual tracking of CPC's sources of supply. • CPC has long-term contracts with sources in Qatar, Australia, Papua New Guinea, and the United States to achieve the goal of energy supply diversification. 	 <p>Coal</p> <ul style="list-style-type: none"> • Caps are set on coal originating from each single coal source country and supplier for long-term contracts. 	 <p>Fuel Oil</p> <ul style="list-style-type: none"> • Fuel oil is supplied by CPC Corporation. • Diesel fuel is supplied by both CPC Corporation and Formosa Petrochemical Corp. 	 <p>Nuclear</p> <ul style="list-style-type: none"> • Nuclear fuel processing is spread out across 2-3 suppliers.
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Long-Term Supply Contracts

By signing various long-term contracts, Taipower is able to reduce uncertainty in procurement and achieve a steady fuel supply.

 <p>LNG</p> <ul style="list-style-type: none"> • Signed fixed-term contracts with CPC • Plans to construct LNG receiving stations at Taichung and Hsieh-ho power plants and to independently import LNG that will be used by some of the newly constructed gas units. 	 <p>Coal</p> <ul style="list-style-type: none"> • Fixed-term contracts for 70-80% of the coal supply with the remainder replenished by spot contracts. 	 <p>Fuel Oil</p> <ul style="list-style-type: none"> • Procured from local suppliers through fixed-term contracts to guarantee security of supply. 	 <p>Nuclear</p> <ul style="list-style-type: none"> • Given that current long-term contracts and inventories are sufficient to accommodate demand, uranium procurement has been suspended. • Signed long-term contracts for all nuclear fuel enrichment services.
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Safe Inventories



LNG

- Accordance with the stipulations of the Taipower and CPC Contract and Early Warning Mechanism for LNG Supply and Demand, Taipower urges CPC to maintain ready LNG inventories of more than 80,000 and 100,000 tons for dispatch to the CPC Yong'an and Taichung Plants respectively.
- Planned corresponding responses with CPC in the case of accidents and established terms agreed to by both parties.



Coal

- The law requires that coal inventory must be sufficient for at least 30 days of the average daily amount consumed in the previous year.
- Taipower has adopted 40 days of inventory as its planned basis for 2022, in which one day of inventory is defined as the average daily usage of coal in the previous year.



Fuel Oil

- The operating stock of fuel oil is 140,000~190,000 kilotons.
- The diesel inventory is established in accordance with the specific supply and transmission conditions at each power plant.



Nuclear

- The safety stock for uranium is set at three year's volume of use.

Stable Coal Transportation

Taipower's coal carriers transported approximately 3.4 million tons of coal with a 11.58% shipping ratio in 2022. The self-management of coal transportation ensures stable fuel supply and dispatching

Natural Gas Procurement >>

In response to the current energy transition policy, Taipower's thermal power generation has entered an era of primarily using gas with coal as support. As a result, the steady supply of natural gas has a critical influence on the stability of electricity supply. At this stage, all of Taipower's natural gas is supplied by the CPC Corporation (hereinafter referred to as CPC). Hence, Taipower is actively working with CPC to establish an even more complete contact mechanism to cope with the impacts of the external environment on the electricity supply. Taipower's natural gas expenditure reached \$252.1 billion in 2022.

Taipower will disperse its sources of natural gas procurement in the future. In addition to purchasing LNG from CPC, Taipower plans to construct its own LNG receiving stations at the Taichung and Hsieh-ho power plants. Related feasibility studies have been approved by the government and the government's approval has been granted to purchase LNG from the international market to be used by newly constructed gas-fired power generation units at the Taichung, Hsieh-ho and Tung Hsiao Phase 2 power plants. This not only enables Taipower to have greater autonomy in its sourcing of LNG to reduce the overall cost of fuel procurement but also works to the Company's advantage in power dispatching and providing system characteristics that increase LNG supply stability and safety.

The Natural Gas Supply and Demand Contact Mechanism and Early Warning System for Taipower and CPC

Frequency	Means of Communication
Annually	<ul style="list-style-type: none"> • Each year before the end of May, Taipower sends revised data to CPC if monthly estimates for gas consumption in the second half of the year require revision. • Each year before August 20, Taipower sends CPC monthly estimates of total gas consumption and maintenance schedules for all gas units for the following year. • Each year before the end of October, Taipower officially informs CPC of any revisions to its monthly estimates of total gas consumption.
Quarterly	<ul style="list-style-type: none"> • Both parties take part in a quarterly supply coordination meeting to discuss relevant issues on LNG usage.
Monthly	<ul style="list-style-type: none"> • Before the 25th of each month (N), Taipower sends a written "Planned Daily Gas Consumption Table" for the next two months (N+2) and its planned monthly gas consumption for the next three months (N+3) to CPC by mail. In turn, CPC is required to verify its 45-day/90-day shipping schedule with international suppliers prior to the 15th of each month. This ensures that appropriate dispatching is performed according to Taipower's requests.
Daily	<ul style="list-style-type: none"> • CPC updates its LNG usage and inventory notice by no later than 10:30 a.m. every day (including holidays) through fax or email. • Prior to 4:00 p.m. on each workday, Taipower faxes its Daily LNG consumption estimates for the next fortnight to CPC. If the gas usage for the next fortnight affects LNG supply and the shipping schedule cannot be changed, CPC will contact Taipower and ask for appropriate adjustments to the daily estimates on LNG usage for the following two weeks. • Should CPC's gas pipeline construction affect the normal LNG supply for Taipower, CPC will try to schedule construction during holidays and send notice to Taipower in advance so that Taipower can make relevant adjustments without compromising power supply safety.
Under Special Circumstances	<ul style="list-style-type: none"> • If the planned construction of CPC's gas pipeline project is expected to affect the normal gas supply of Taipower, it should be scheduled during holidays whenever possible. CPC should also provide written notification to Taipower in advance, allowing Taipower to cooperate while ensuring the safety of power supply is not compromised. • As Taipower is responsible for supplying power to CPC's Yong'an and Taichung LNG storage systems, in the event of power outage/rationing that affects the supply of LNG, Taipower will coordinate with CPC first to make optimal arrangements.



Coal Procurement ▶▶

For coal procurement, Taipower has established a Coal Procurement Review Taskforce, with membership consisting of personnel from the Department of Materials, Procurement Regulation Enforcement, Procurement, and the Legal Affairs Office. To make decisions more comprehensive and information more transparent, external experts in energy, economics, and legal affairs are invited to serve as advisory committee members. To ensure that environmental protection requirements are met, high-quality coal is provided to all coalfired power plants.

Taipower has enhanced the competitiveness of its bidding projects by revising its procurement regulations and diversifying its coal sources. In the process of conducting the "2022 Coal Procurement", Taipower has strategically timed its coal purchases and effectively utilized the quantity selection rights in each long-term contract. When compared with market prices, Taipower has successfully reduced its coal purchasing expenses by approximately NT\$27.5 billion.

Coal Expenditure (Billion)	2021		2022	
	Total Procurement Quantities (Unit: Ten Thousand Tons)	Ratio (%)	Total Procurement Quantities (Unit: Ten Thousand Tons)	Ratio (%)
	820.78		2,120	
Coal Source	Total Procurement Quantities (Unit: Ten Thousand Tons)	Ratio (%)	Total Procurement Quantities (Unit: Ten Thousand Tons)	Ratio (%)
Australia	1,499	52%	1,460	50%
Indonesia	1,222	43%	1,290	44%
Russia	92	3%	122	4%
Colombia	54	2%	42	1%
South Africa	8	0%	23	1%
Canada	0	0%	9	0%

Electricity Suppliers ▶▶

To ensure a stable supply of electricity and to enhance economic vitality and flexibility, the government lifted restrictions on private power producers and adopted Taipower's avoidable costs generation as a pricing principle. Starting in 1996, Taipower was permitted to purchase thermal electricity generated by independent power producers (IPPs) in accordance with an announcement from the Ministry of Economic Affairs that allowed for the establishment of private power plants. The process works as follows: the Ministry of Economic Affairs first conducts qualification reviews. Qualified operators then submit their electricity prices for bidding before Taipower signs a contract with the winning bidder.

For the purchase of electricity generated through cogeneration and renewable energy, the procedure is governed by the Enforcement Rules of the Cogeneration System and the Renewable Energy Development Act. Taipower is obligated to purchase the electricity wholesale, but is not required to follow the bidding procedures outlined in the Government Procurement Act.

However, as of January 2017, following the promulgation of the most recent amendments to the Electricity Act, the Ministry of Economic Affairs will no longer permit privately-owned power plant license applications. Taipower's power supply capacity will now be determined by the electricity industry's regulatory authority when assessing the power supply. When there is electricity demand, a procurement procedure will be initiated. Contracts will be reviewed and the starting price for bidding will be set. Then public bidding will be handled following the provisions of the Government Procurement Act. A public meeting will be held to explain the bidding process to potential suppliers that are interested in bidding. The bidding will be closed and finalized after a qualification and specification review, as well as bargaining and comparing prices.

As of the end of 2022, Taipower has signed contracts with 11 independent power producers (IPPs), 47 co-generation power providers, and has 50,980 contracts for renewable energy including solar, wind, hydropower, and others. A full 62.5kWh of electricity was purchased from external sources in 2022.

Fuel Supply ▶▶

Taipower currently purchases fuel oil exclusively from CPC, but diesel from both CPC and the Formosa Petrochemical Corporation. Both contractors have ample supply capability and conform to the relevant governmental laws and regulations. The appropriate operating stock of fuel oil and diesel oil is set according to the supply and transmission conditions at each power plant, and the fuel expenditure in 2022 reached \$23.1 billion.

Nuclear Fuel ▶▶

The procurement of nuclear fuel involves the purchase of uranium and subsequent processing services for conversion, enrichment, and fabrication. To comply with the government's nuclear-free homeland policy, Taipower has suspended uranium procurement as the current inventory is sufficient for the operation of nuclear power plants until they are decommissioned. Demand for Nuclear fuel processing services will exist until 2025, and has been covered by long-term contracts. In 2022, nuclear fuel expenses reached \$0.893 billion.

Suppliers of Materials and Equipment ▶▶

The Materials Supply Chain

Taipower provides professional internal training and consultation for issues associated with the Government Procurement Act. Training ranges from front-end material numbering, supplier capability reviews, and the establishment of qualified supplier lists and management to requisition and demand management, procurement, acceptance, and logistics operations. Taipower is also actively implementing supply chain digitalization and has established Enterprise Resource Planning (ERP), a Supply Chain Management (SCM) platform, and a Warehouse Management System (WMS) to achieve internal and external network collaboration and to construct a comprehensive system.

The Equipment Supply Chain

Taipower used ISO 9001 to integrate its evaluation/re-evaluation/inspection/feedback steps on defects when executing supplier management and auditing. This ensures the quality, cost, and delivery of power-related equipment and devices provided by suppliers. Taipower also revised relevant regulations to establish a quality assurance program for electrical equipment. The Company requires suppliers to develop the capacity to design and supply qualified products and to prevent non-compliance throughout the production process from design to service.

2.5.2 Creating a Sustainable Supply Chain

Review and Procurement Standards for Taipower Suppliers ▶▶

Supplier Review Standards Pursuant to the Government Procurement Act

To ensure material quality, maintain power supply safety, and to improve procurement efficiency, Taipower reviews the bidding documents of suppliers in keeping with the Government Procurement Act.

In 2022, Taipower received a total of 3,328 material procurement tenders from 1,055 domestic suppliers and 45 foreign suppliers, for a total of 1,100 suppliers. A total of approximately NT\$113.3 billion in tenders was awarded. Domestic tender awards totaled approximately NT\$99.6 billion and accounted for approximately 88% of the Company's procurement of property. Among them, the tender awards for selective tendering came to roughly NT\$71.8 billion and accounted for approximately 63% of Taipower's total procurement of property. There were 61 contracted suppliers (the tender awards for items that fell under the purview of the localization policy came to approximately NT\$34 billion and accounted for approximately 32% of Taipower's total procurement of property.) The tender awards for other types of tenders amounted to approximately NT\$41.5 billion which accounted for approximately 37% of Taipower's total procurement of property.

Process of Screening the List of Selectively Tendered Materials, Equipment and Qualified Suppliers

To improve the effectiveness of management and control, Taipower has adopted the principle of centralized management. Where the utilization of equipment is frequent and numerous units intend to use the said equipment, the overall consideration of supply and demand must be reserved and the application of purchase, procurement, final acceptance, storage, and transportation of equipment should be handled in a unified manner to save costs.

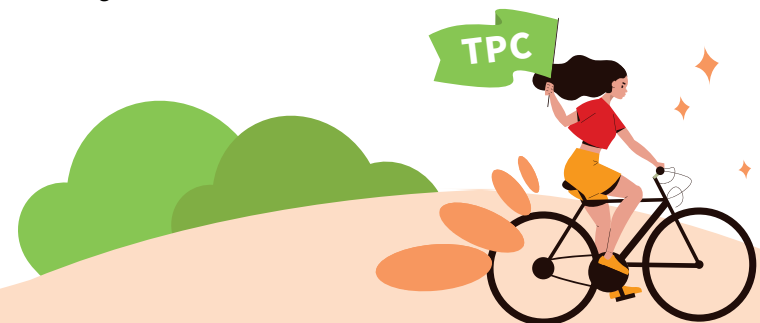
To facilitate the efficient processing of these tenders, Taipower has established a list of qualified material and equipment suppliers, who are screened according to the following process:



Taipower has established the General Principles of Reviewing Supplier Equipment Manufacturing Capacity in Selective Tendering and Review of Supplier Capability as a supplier selection mechanism. Suppliers wishing to participate in a bidding process must obtain a Certificate of Manufacturing Capacity. When applying for manufacturing capability review, the supplier shall provide the Company with a relevant equipment list, independent inspection report, incoming material inspection, independent inspection form, maintenance plan, and other documents. In addition, the supplier's quality management system must be certified by relevant local professional organizations to ensure its performance capability, manufacturing quality, and safety.

Bidding Evaluation for Primary Power Generation Equipment Suppliers of Thermal Power Plants

1. Taipower employs a restricted bidding process to recruit technical service consulting firms. In the evaluation criteria titled "vendor's understanding of service matters," Taipower incorporates environmental regulations, aimed at selecting consulting firms that possess comprehensive knowledge of environmental regulations and the latest developments. This facilitates the consideration and inclusion of the latest environmental regulations and environmental impact assessment commitments in the bidding specifications for primary power generation equipment, ensuring compliance by suppliers.
2. Currently, Taipower has established environmental chapters in the bidding specifications for primary power generation equipment procurement projects or associated facility construction projects. It requires contractors to follow construction site management practices and comply with environmental laws and regulations such as air pollution control, water pollution control, waste management, marine pollution control, and environmental impact assessment. The specifications also stipulate that a certain percentage of the contract amount (environmental protection fees) must be allocated exclusively for environmental protection measures. The objective is to minimize the environmental impact during the construction process within the framework of environmental protection regulations.



Supplier Evaluations and Audits ▶▶

Taipower conducts supplier re-evaluation based on its Re-evaluation Guidelines of Power Equipment and its Review of Supplier Capability and Management of Qualified Manufacturers policy. Suppliers with Certificates of Manufacturing Capacity must conduct re-assessments before the expiration dates of their validity periods (up to three years) to maintain their qualifications.

During the re-evaluation process, Taipower conducts a comprehensive evaluation of supplier manufacturing capacities, quality management systems, manufacturing equipment, and lists of equipment that require inspection, suppliers of components or raw materials, delivery conditions in the most recent three years, and improvement measures for misusing equipment. Suppliers that meet the requirements are issued Certificates of Manufacturing Capacity. When suppliers fail to meet requirements, they are given a limited period in which they can propose improvement measures. Suppliers that fail to propose improvement measures without valid reasons are required to re-apply for their Certificates of Manufacturing Capacity.

In 2022, Taipower strengthened its auditing of material suppliers. Among 154 qualified suppliers in selective bidding, 28 were re-evaluated which accounted for 18%* (The eligibility period of re-evaluation was three years, and the eligibility cycles of different materials from the same supplier were also different, therefore the re-evaluation was conducted on those who had expired eligibility periods). In addition, the Company conducted inspections during the manufacturing process and on-site audits of suppliers a total of 416 times.

Note: The number of suppliers assessed for risk accounted for 18% of the 28 selective tendering suppliers, which represents 18% of all the total of 154 (144 domestic and 10 international) suppliers.

Sustainable Supply Chain Goals ▶▶

Greater Emphasis on Supplier Governance

Suppliers are crucial partners in ensuring the stable power supply of the Company. In addition to qualities such as product quality, delivery timing, price, and technical capabilities, Taipower will prioritize supplier corporate governance, environmental considerations, and social aspects in the future. Together with its partner suppliers, Taipower aims to construct a more resilient and sustainable supply chain, demonstrating its corporate social responsibility.

Future Plans

To practice sustainable supply chain management and fulfill its corporate social responsibility, Taipower's procurement specifications will not only include material quality requirements but also place significant importance on evaluating suppliers based on their environmental safety and occupational health, financial practices and corporate governance, as well as their labor conditions. Taipower will establish a list of qualified suppliers and conduct selective bidding to enhance procurement efficiency while aligning with the Company's business strategy and social responsibility. As a pilot project, Taipower has already implemented these measures for industrial gas procurement.

Moving forward, Taipower will conduct planning and implement research strategies for sustainable supply chain management, leveraging experienced institutions or teams. In addition to the existing focus on quality, delivery, cost, and service (QDCS) evaluation systems, Taipower will collaborate to develop supplier codes of conduct, supplier sustainability commitments, supplier ESG evaluations, and practical guidelines. Initially, these measures will be applied to company-level materials and suppliers. Once proven effective, they will gradually expand to other materials and suppliers, ultimately achieving sustainable supply chain management. The research project is expected to be completed in the second quarter of 2024.

Implementation Plan of Taipower's Anti-corruption Procurement Platform

Taipower has established an anti-corruption platform to improve risk prevention, incorruptibility, public-private cooperation, administrative transparency, national supervision, and other factors that help ensure that procurement projects can be completed on schedule and at the appropriate quality. The anti-corruption platform has established a transparent procurement system that facilitates cross-domain cooperation, ensures compliance and appropriateness of various decisions and operations, avoids disputes, and increases audit frequency. In cases where there are reasonable doubts, these are handled immediately to avoid risk expansion. Throughout the implementation of this plan, Taipower regularly visits relevant units to ensure their compliance in decision-making and operations. The Company also establishes cross-domain communication channels and invites the Prosecutors Office, the Agency Against Corruption, and investigative agencies to participate in procurement processing. Taipower also invites professional institutions, external experts, scholars, and civic groups to participate.

The "2022 Procurement of High Calorific Value Bituminous Coal" Integrity Platform held two business liaison meetings and conducted one educational advocacy event in 2022. The "Offshore Wind Power Phase 2 Project - Wind Farm Equipment Procurement with Installation" Procurement Integrity Platform visited the prosecutor's office, integrity agencies, and police departments three times, held one business liaison meeting, conducted two educational advocacy events, and organized one corporate integrity seminar in 2022. In the future, we will improve the planning and execution of procurement cases by utilizing information disclosure, organizing business liaison meetings, visiting and inviting integrity agencies for mutual visits, and inviting prosecutors to give speeches, in order to prevent undue external interference.