

Introduction—Editing Framework

About the report

This report follows the Global Reporting Initiative (GRI) guidelines for application level C. The purpose of this sustainability report is to communicate with the society how we strive for and fulfill our social duties in sustainable development.



Period covered by the report

January 2007 to December 2007

Scope of the Report

This report contains data and information regarding sustainability issues and achievements within financial, environmental and social aspects of Taipower.

This report conforms to GRI level C guidelines.

Inquiries

This report is found both in English and in Chinese. Both versions are downloadable at our website(<http://www.taipower.com.tw/>) as PDF files. Our next sustainability report is expected for publication in 2009.

Taipower sincerely hope that the publication of this report may allow further understanding of our efforts in sustainability. If there are any suggestions or constructive criticisms regarding this sustainability report, Taipower gladly accept them through the following methods:

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Introduction

Integrity Caring Innovation Service

Profile Of Taipower

Profile Of Taipower

Taiwan Power Company (Taipower) was established on May 1, 1946. It is a vertically integrated power utility. Since its establishment, Taipower has devoted all its efforts to provide 24-hour service, supplying sufficient and stable electricity to Taiwan and the offshore islets of Kinmen, Matsu and Penghu. This is indispensable to people's livelihood. Up to the end of 2007, there were 11 hydro power plants, 10 thermal power plants and 3 nuclear power plants. The total installed capacity was 38,082 MW. Nuclear and Thermal generated the majority of power.

Taipower is a company closely related to national economic development and people's daily life. In the past, rapid economic growth and rising living standards have greatly increased the demand for electricity. The management focus was then on power development and power plant construction. Along with the popularization of high-tech industries and home electric appliances, the public demands

both quantity and quality for power supply, and the overall service quality.

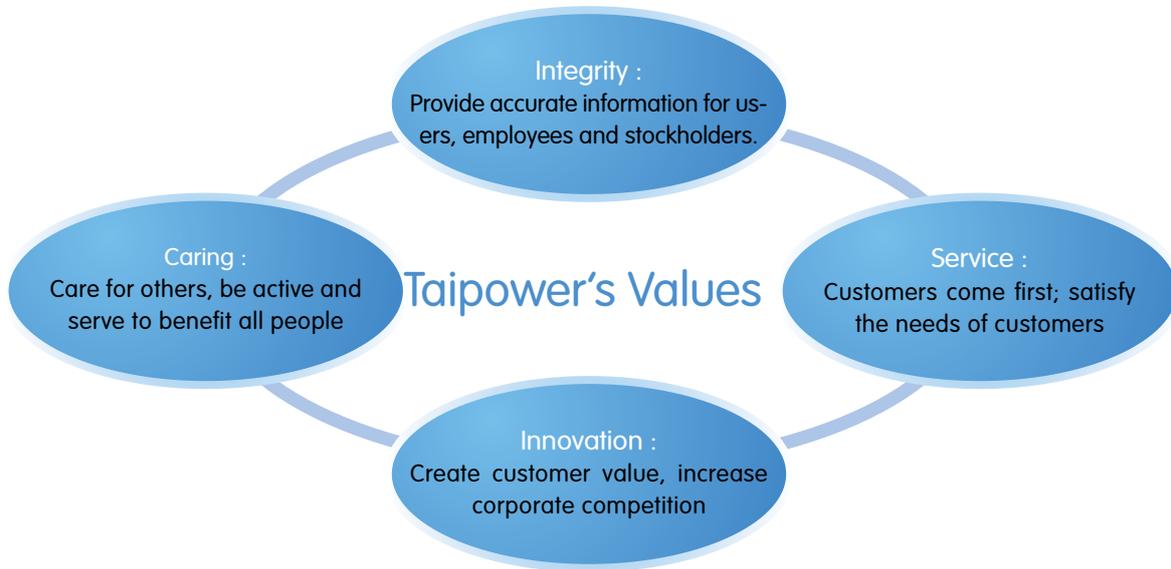
In addition to the present customers, Taipower will take into further consideration the potential customers and interested parties. Taipower should seriously concern about its social responsibility in depth and breadth: caring for the demand and development of the next generation, caring for the lives and environment of the customers and the public. Taipower demonstrates its appreciation to the society with sincerity and gratitude.

In the very near future, the power market will be liberalized. Taipower understands quite well that the company will confront the pressure of management restrictions and market competition. How to have an international vision, incorporate efficient management techniques and adopt a management strategy that embodies social responsibility and sustainable development will be an important key for Taipower to

maintain growth and advancement in the 21st century.

Although Taipower is a government-owned enterprise, it has never failed to fulfill its social responsibility. In 2007, Taipower was placed at 27 in Corporate Citizen ranking

held by Common Wealth Magazine. Among national enterprises, only CPC Corporation, and Taipower were listed. Taipower's overall performance was also well recognized by the public.



Taipower beliefs are "work for the people" and "strive to excel."

"Work for the people" is reflected in the values of "integrity" and "caring."

"Strive to excel" is reflected in the values of "innovation" and "service."

Taipower Mission

To offer diverse service to satisfy our customers' demand, to promote the nation's competitiveness, and to protect the interests of our employees and shareholders.

Taipower Vision

To become a prestigious and world-class power utility group.



Brief View Of Taipower

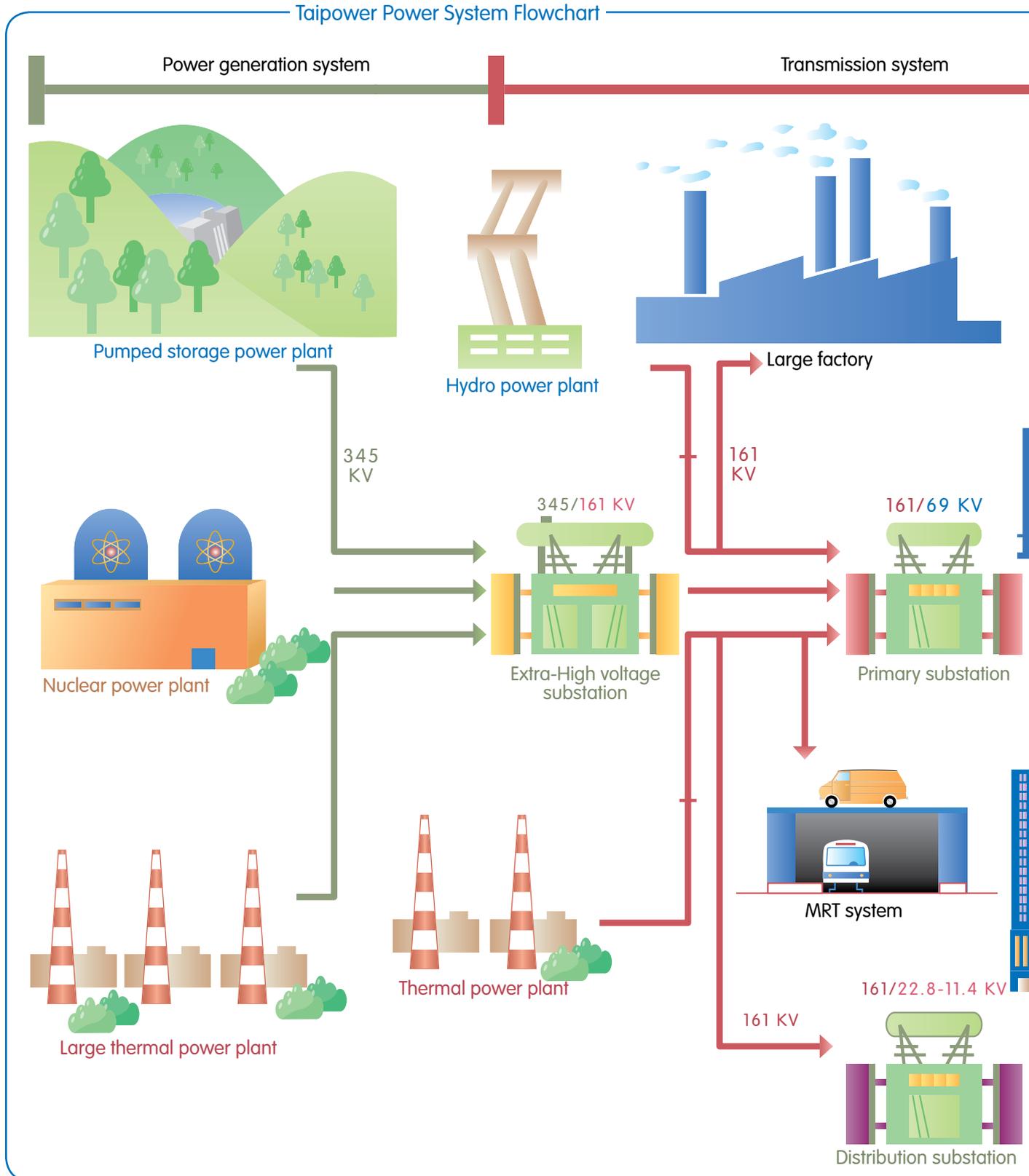
- Founded: May 1, 1946
- Coverage: Taiwan, Penghu, Kinmen, Matsu areas
- Capital: 330 billion NT dollars
- Stock: 96.93% government-owned, 3.07% public
- Total assets: 1,464.2 billion NT dollars
- Employees: 26,047
- Customers: 11.99 million
- Installed capacity: 38,082 MW (Taipower + Independent Power Producers)
30,542 MW (Taipower)
- Generated and purchased power: 201.9 GWh

Note: End of December 2007

Power Generation And Transmission

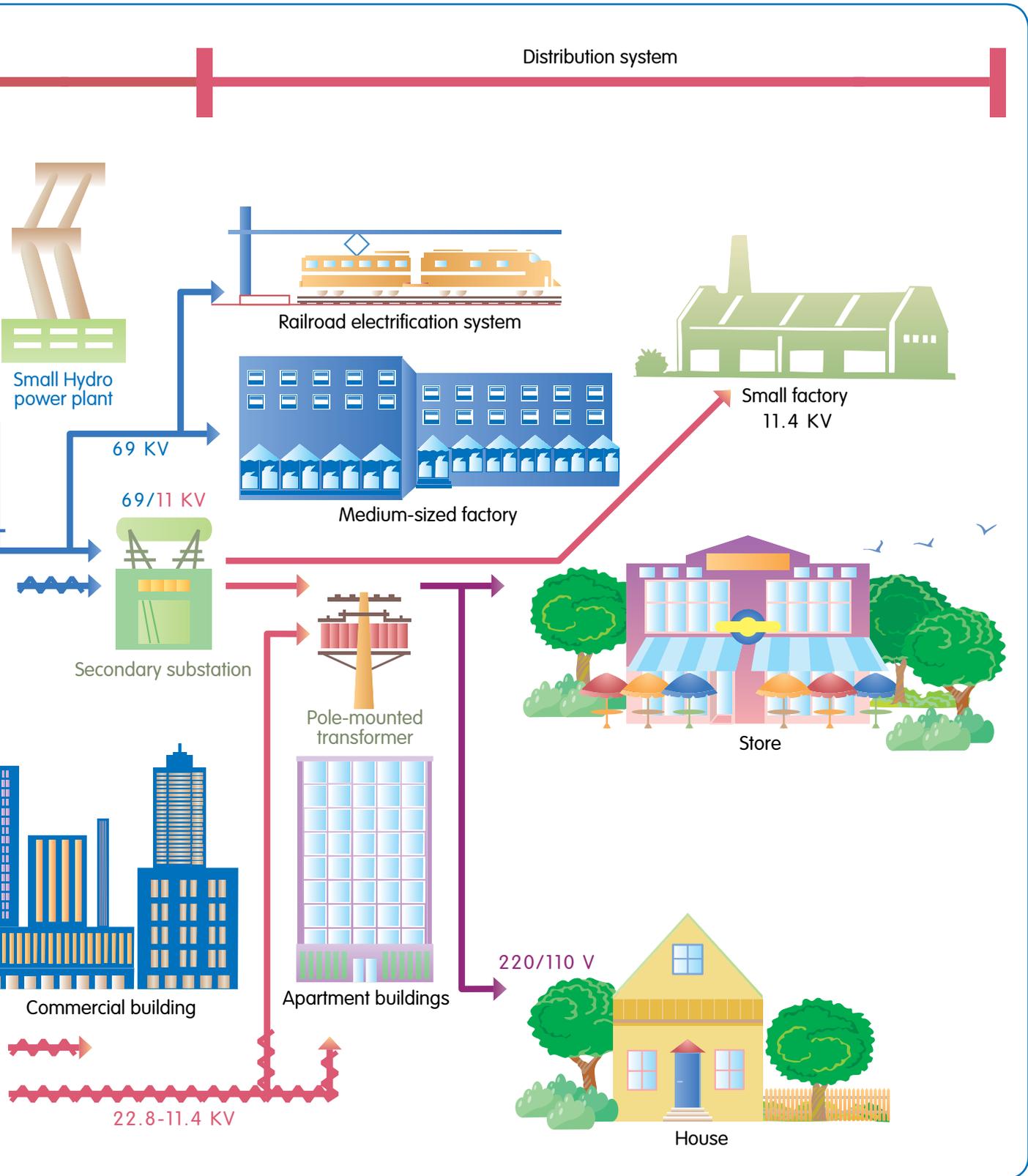
All the power generated from nuclear, thermal and hydro power plants has to go through transmission

and distribution lines to transmit power to the customers. Since all the power plants are located in remote

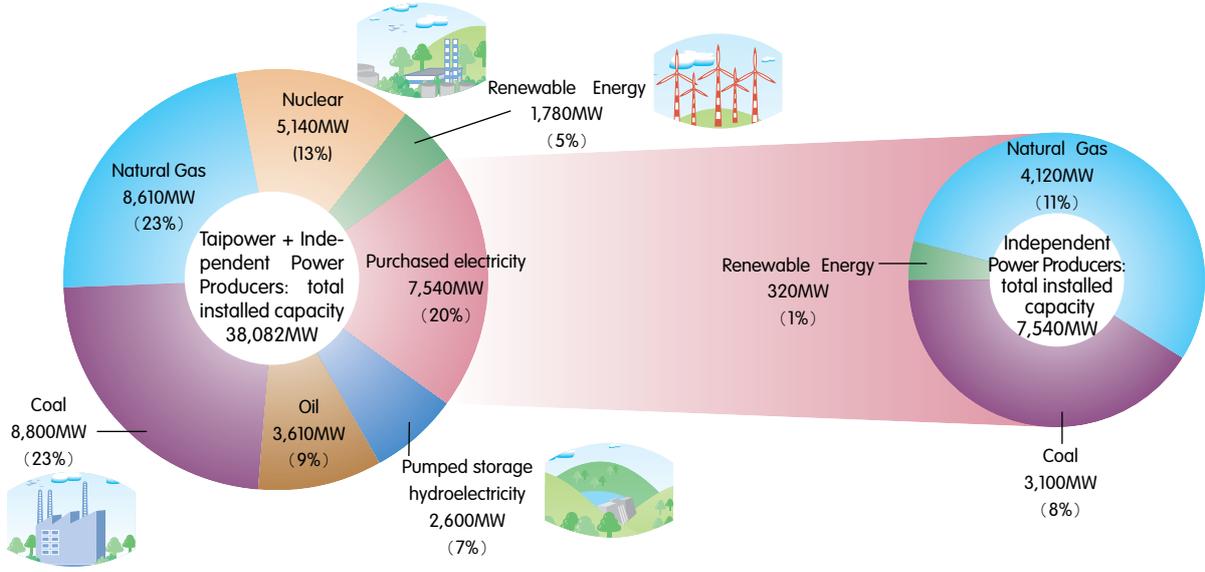


areas, far away from the places that consume more electricity, it is therefore significant to enhance power

transmission capability and reduce line loss.



Major Sources Of Electrical Power



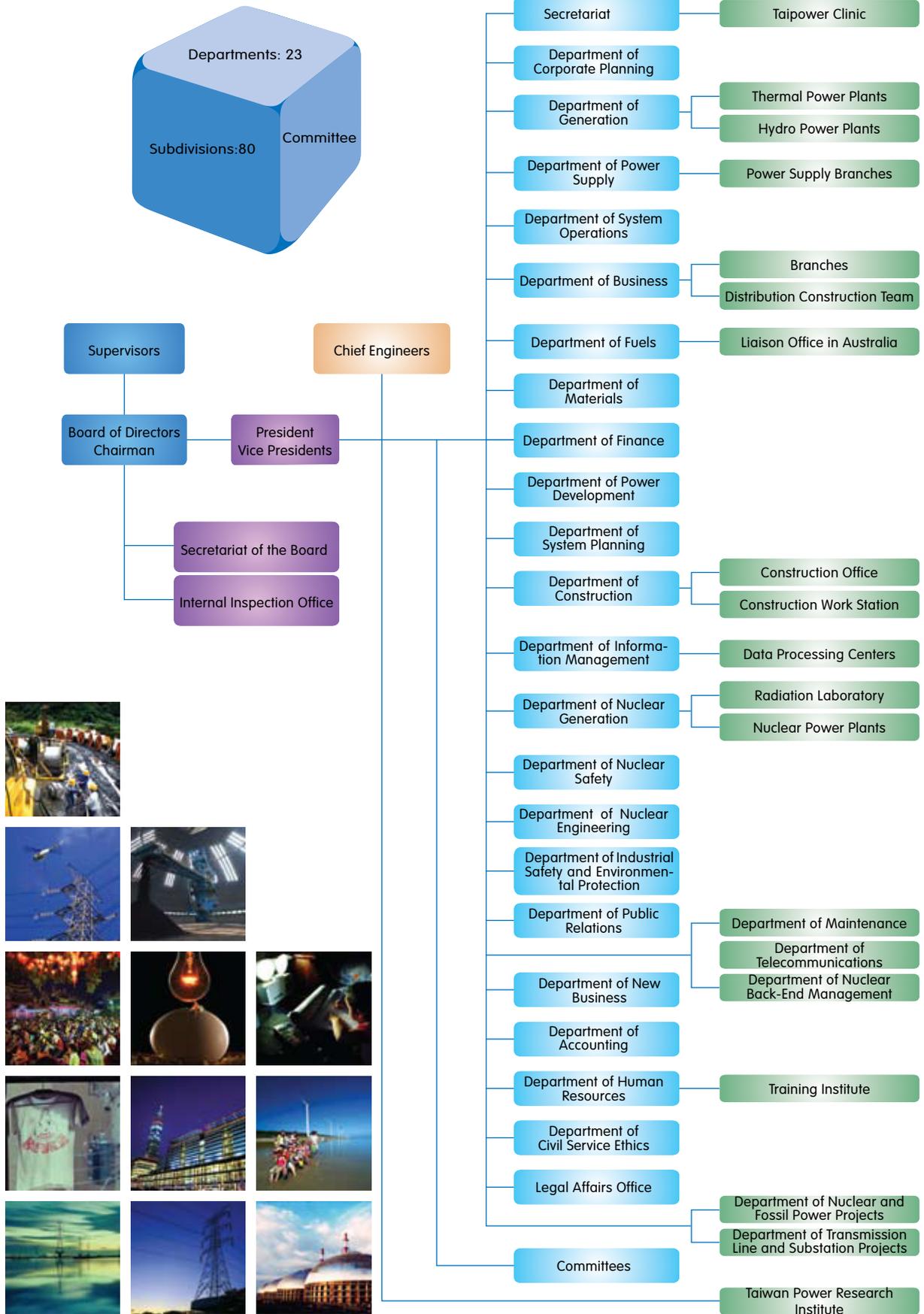
Power Development And Power Grid Map (Taipower + Independent Power Producers)



Key Performance Indicators In 2007

Key performance indicators	2007 Target	2007 Actual	Accomplishment
01.Maintenance expenses (managed in KWh)	≤ 0.3580 NT dollars/KWh	0.3552 NT dollars /KWh	
02.Fuel cost control (reduce costs of coal, oil and raw materials of uranium)	$\leq -6.63\%$	-9.94%	
03.Line loss	$\leq 5.10\%$	4.75%	
04.Customer satisfaction	≥ 83 points	85.7 points	
05.Power supply reliability (1)SAIDI	≤ 26.570 m/household-year	23.909m/household-year	
(2)SAIFI	≤ 0.424 times/household-year	0.333 times/household-year	
06.Industrial safety performance Total injury index	≤ 5.00	12.06	
07.Environmental protection (1)PM emissions	≤ 33 kg/million KWh	21kg/million KWh	
(2)SOx emissions	≤ 360 kg/million KWh	330kg/million KWh	
(3)NOx emissions	≤ 345 kg/million KWh	298kg/million KWh	
(4)Greenhouse gas control	≤ 596 g/KWh	543g/KWh	
08.Energy conservation Reduce units heat rate, Increase efficiency	$\leq 2,347$ Kcal/KWh	2,327Kcal/KWh	
09.Innovation (1)Knowledge management (cases that best demonstrated and develop experience in knowledge management)	≥ 30 cases	47cases	
(2)Employee proposals	$\geq 4,436$ proposals	6,249 proposals	
(3)Average reading hours of e-learning per employee	≥ 7 hours/person	10.9hours/person	
(4)Average training hours of employee per year	≥ 32 hours/person	41.4hours/person	
10.Research and development (1)Increase income (thousand NT dollars)	$\geq 148,000$	157,178	
(2)Decrease costs (thousand NT dollars)	$\geq 1,117,256$	1,520,719	

Organization Chart



Major Operation Performance In 2007

In 2007, generally speaking, operation performance was impacted by soaring international energy prices and the obstruction and suspension of base load power development. In addition, the company had to purchase high-cost LNG and fuel oil to meet the power demand. The generation cost therefore rose enormously. This caused the increase in operation costs.

Despite the fact that the company adopted various measures, such as economic dispatch, line loss reduction,

broadening sources of income and reducing expenditures, adjusting electricity prices in a small scale, Taipower was unable to counter the impact of rising energy cost. To comply with the government policy of stabilizing consumer prices, electricity prices were not adjusted this year. This resulted in a great loss in Taipower's revenue. Nevertheless, thanks to Taipower's more than 20,000 employees' devoted efforts, the company could operate smoothly in every aspect and demonstrate remarkable achievements in its performance.

Management

- Energy sales and the number of customers continued to grow. Total energy sales were 187.08 billion KWh, a 3.0% increase over the previous year.
- The number of customers was 11.99 million, 246 thousand more than the previous year.

- The peak load reached 32,790 MW, a 2.28% increase over the previous year.
- The line loss was 4.75 %, 0.1% lower than the previous year. It was the best achievement in Taipower's history.

Employee Productivity

- Employee energy sales were 8,652 MWh, 196 MWh more than the previous year.

- Employee revenue was 18.904 million NT dollars, a 3.77% increase over the previous year.

Newly Added Units

- Taoyuan Tatan Thermal Power Plant Combined-Cycle Units 3 & 4 started commercial operation on July 2 and Sept. 20, respectively.

- The recovery of Tachia River Kukuan Hydro Power Plant Unit 2 was completed and joined the system on Dec. 18.

Power Supply Stabilization

Installation of the underground transmission lines, 345 KV of red and white cable lines, from the Southern Taiwan Science Park to Chigou, joined the power supply system on

June 6 and Aug. 2, respectively. This provides a more stable, reliable and good quality power supply to the Tainan Science Park area of the Southern Taiwan Science Park.

Recognitions

- Taipower has long been caring for the society and actively participating in various charitable activities. Taipower was awarded, the first time for state-run enterprises, in the 7th Annual National Civic Service Award.
- The Hsinta Thermal Power Plant was awarded in the 16th Annual ROC Enterprise Environmental Protection Award. As well as an Honorary Award for winning this award for three consecutive years.
- Taipower's excellent engineering in the Hsinta Thermal Power Plant Improvement on Coal-unloading System was

- awarded in the 8th Public Construction Golden Award. Tangwei Primary Distribution Substation Turnkey Project and Puli Primary Distribution Substation Turnkey Project received the Award for Excellent and Outstanding Public Construction Project, respectively.
- In addition to the Radiation Laboratory, the Hsinta Thermal Power Plant and the First Nuclear Power Plant, the Third Nuclear Power Plant received the Enterprise Standardization Award from the Bureau of Standards, Metrology and Inspection, MOEA. This was an honor for Taipower's achievement in promoting operation standardization.



Sustainability Management

Integrity Caring Innovation Service

Sustainability Management

Financial Indicator

Letter From The Chairman

As a major electric power supplier, Taipower is pleased to share with you the joy of reading the second edition of the Taiwan Power Company Sustainability Report. In order to establish a relationship with the public based on integrity and trust, in this report, Taipower makes a solid presentation on its commitments and achievements in respect of social and environmental issues.

In entering the 21st century, impacted by global warming caused by greenhouse gases, the continuous growth on power demand, the soaring energy prices caused by energy shortages, and a high percentage of co-generation and IPP accounting for more than 30% in the power market, Taipower is no longer a monopoly enterprise. How to cope with the pressure from the internal and external management environment and take timely and necessary actions will be an important key to maintaining sustainability in this century.

Taipower is a government-owned power company, composed of 103 units. Its total assets reach NT\$1.5 trillion. The number of employees is about 26,000. In this uncertain era, the instability and rapid changes of the external environment has imposed great pressure on the management of the company. However, on the other hand, this may imply that the possibility of innovative development does exist. Under these driving forces,

power technologies will accelerate their path of innovation and changes. These changes will be seen on energy side, power side as well as grid side. It is foreseeable that technology will determine the future of power development. Confronted with this difficult situation, Taipower people should jointly uplift their team work spirit, upgrade their professional capability and reachieve Taipower's glorious status. This is our common responsibility and goal in the new century.

Thus, within the company, a good corporate culture has been formulated through establishing corporate ethics and sound work disciplines, which will ensure that the operation, business planning and implementation of each unit level will not only benefit the company but also be responsive to the society's needs.

In addition, to comprehensively deal with global issues, without mandatory regulations, Taipower enforced the greenhouse gas emissions investigations in 2004. The Greenhouse Gas Information Management System was established in 2005 to manage the data of gas emissions. In 2007, Taipower specially drew up 7 strategies, which included 14 action plans to reduce CO₂ emissions. Furthermore, before effective alternative energy becomes available, Taipower, complying with the government policies, promoted in full force the renewable energy, including wind and

solar. Presently, renewables can only be used for supplementary energy. Nevertheless, Taipower will continue to develop cost-effective, non-carbon, or low-carbon energy to provide people with higher-quality and clean energy.

In 2007, our performance in industrial safety was not quite satisfactory. The total injury index was worse than that of the

Supplying sufficient and good-quality power and maintaining power supply stability and safety

In the past, what power industry management emphasized was the higher sales the better performance. Nowadays, the concept of sustainability is focused on how to reduce power demand through encouraging power conservation and upgrading efficiency. To meet national economic development goals, Taipower is responsible for providing sufficient power and balancing regional power supply. In the future, Taipower will aggressively implement power plant renewal and expansion projects (such

Using information facilities properly and ensuring information security

In the wake of the development of information technology, internet crimes, viruses, improper software use, etc. are seen increasingly. To avoid improper use of information resources which subsequently tarnishes the company's image and jeopardizes business operation, Taipower will continue to super-

Passing on techniques and encouraging life-long learning

The number of employees approaching retirement age is increasing. For the purpose of sustainable cultivation of electricity professionals, Taipower recruited 2,533 new employees from 2005 to 2007. Through a mentor system, the techniques and experiences of our outstanding employees can be passed on to new blood.

Enhancing operation efficiency and reducing operation costs

For the future, the international energy prices will still remain high and the interest rates will be uprising. Under the present energy structure, the costs for power generation and power purchased will be much higher than those in the twentieth century. Thus, Taipower must direct its efforts to strengthening operation efficiency and reducing cost. Furthermore, efforts should also be made in management innovation, work flow improvement, and electric technology innovation to reinforce operation efficiency. On the other hand, the electricity tariff



previous year. Based on our philosophy of respecting life and caring for employees, Taipower will continue to review and upgrade our safety mechanism and put it in actual practice. "Zero injury" will be our goal to cut down work injuries to a minimum.

In prospect for the year 2008, Taipower will make an all-out effort to fulfill the following goals:

as Shenao, Linkou, Talin, Tunghsiao, etc.) and add new power sources (such as the Changgong power project). In power grid construction, Taipower will continue to implement the Sixth Transmission Project and plan the Seventh Transmission Project, along with the Sixth Distribution Project earlier launched, to strengthen the reliability of transmission and distribution lines and to ensure power supply security.

vide its employees to abide by the rules of information security, to correctly use information facilities in order to ensure the security of the information environment and to prevent leaking of confidential information.

In the future, Taipower will continue to cooperate with outside organizations and attract talents to join the power industry through a sound mechanism. In this drastically changing environment, the employees should have a life-long learning concept, absorbing up-to-date knowledge from time to time, so as to upgrade work efficiency and be prepared for the stiff changes and challenges we all are confronted with.

rates should reasonably reflect the operation cost. For the long term, to effectively counter this global trend, measures to be taken should include the improvement of energy structure and largely reduced dependence on fossil fuels.

Although there was a loss in 2006 and 2007 in Taipower operation, in an attempt to maintain the company's sustainable operation, Taipower will not only continue to reinforce operation performance, implement cost-saving measures, but also make thorough preparations for mapping out adjustment plans of reasonable electricity tariff rates based on international energy prices. Taipower also commits itself to the climate change campaign, upgrade of energy efficiency, substantiation and development of an organizational sustainable culture, continuing dialogue with concerned parties with an open and transparent attitude, and doubling our caring for communities and disadvantaged groups to fulfill its role as a responsible corporate citizen. It is our hope that the public will recognize and support Taipower's efforts and collaborate with us to create a more harmonious and advanced society.

Chairman

A handwritten signature in black ink that reads "Edward K. M. Chen". The signature is written in a cursive, flowing style.

Sustainable Development Strategy

To establish a relationship with the public based on integrity and trust, Taipower has followed the rules and corporate ethics and fulfilled its commitment to be a good citizen of the society. Taipower has set up this company's sustainable development strategy. Based on which, it is expected that the relevant actions can be deployed to accomplish a corporate charitable mission and social responsibility. Taipower's vision "To become a prestigious and world-class power utility group" can be attained.

● Ensuring Power Supply Stability And Safety

Setting up power supply stability as our mission, fulfilling the goal of power supply stability, and prioritizing public safety and public interests for business development.

● Providing Thoughtful Customer Service

Satisfying customer's demand, listening to customer's suggestions and opinions, fulfilling customer's multiple requests to completely offer "customer-oriented service."

● Cultivating Corporate Culture Based On "People-First"

Upgrading the efficiency of internal working communications and strengthening the concept of common sharing information among units to cultivate a "people-first based" atmosphere in the company.

● Addressing Environmental Sustainable Development Issues

Strengthening promotion and reaching consensus, adopting measures to reduce environmental burdens.

● Caring For Underprivileged Groups And Local Communities

Winning the recognition of the residents of local communities, applying core techniques and relevant resources to make contributions to the underprivileged groups and local communities.

Financial Performance And Company Management

■ Performance In 2007

Taipower's operating revenue in 2007 is 408.742 billion NT dollars, operating expenditure is 430.218 billion NT dollars, with a loss of 31.075 billion NT dollars before tax, which is 2.815 billion NT dollars more than that of 2006. The main reason for the increase in losses was the soaring fossil fuel prices, which raised the fuel and purchased power costs. Although we adopted many measures to broaden our sources of income and reduce expenditure that improved operation efficiency, the insufficient adjust-

Financial performance of Taipower

Units: billion NT dollars

Item	Year	2007	2006
Operating revenues		408.742	389.264
Operating costs		419.430	374.956
Operating expenses		10.788	10.121
Other income		6.517	8.478
Other expenses		16.115	15.480
Loss before income tax		-31.075	-2.815
Loss after income tax		-23.132	-0.338
Effect of change in accounting principles			0.138
Net loss		-23.132	-0.200

ments of electricity rates didn't fully reflect the scale of international fuel price hikes. In the future, we will continue making efforts in cutting down fuel procurement costs, in-

creasing thermal power plant availability, raising nuclear power plant capacity factors and controlling operating cost in hopes of reducing losses and maximizing income.

Management

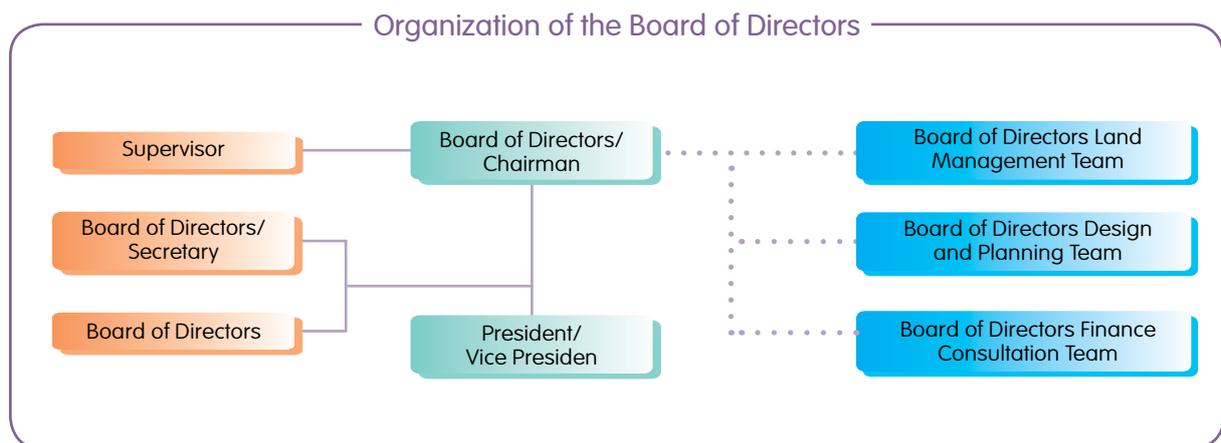
The common goal of the Taipower management team and the employees is to accomplish the vision "To become a prestigious and world-class power utility group." In its management, Taipower will substantiate the transparency of its operation and financial information. Good management is the company's prime goal.

Integrity is the company's most important management philosophy. It is to make internal and external information transparent and open through the convenience of the internet to fully disclose the company's internal and external management and personnel information. It is the best way to gain public approval and support via entirely revealing the management information to the customers, shareholders and outside interested parties.

Under the drive of the management philosophy "integrity," Taipower is specially concerned about the attention-focused management issues. From the standpoint of the

company, it is to raise awareness and competitiveness. Opening information and decisions to the employees will make employees render more sincere service to colleagues and customers, and increase their loyalty to the company. If all the employees are engaged in their work with sincerity and honesty, a team work atmosphere will prevail. This will upgrade the company's image and indirectly accumulate the company's assets.

Through the board of directors, Taipower reinforced the supervision and management to protect the interests and value of its shareholders. For social responsibility, in addition to satisfying customers' power demand, upgrading service quality, applying new technologies to enhance the capability of innovation, implementation and management, Taipower will vigorously fulfill its responsibility as a corporate citizen to care for the society and communities, help the underprivileged, and emphasize environmental protection, so as to upgrade corporate image and create corporate value.



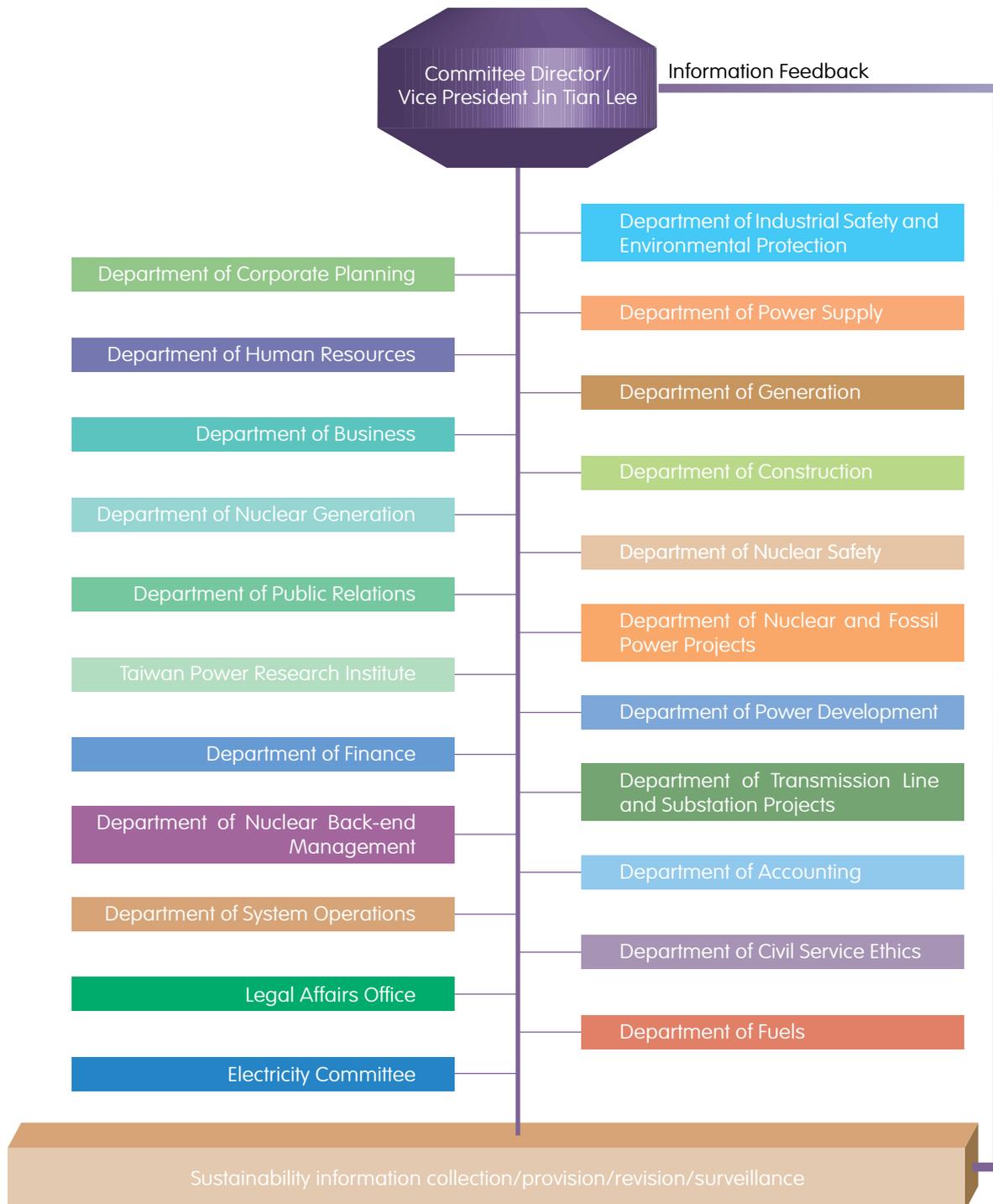
Taipower "Enterprise Body" credit rating table						
Publication date	Moody's Investors Service					Remark
	National Scale Rating		Outlook	Local Currency Issuer Rating		
	Long-term	Short-term		Long-term	Short-term	
2007.01	Aaa. tw	TW-1	Stable	A1	Prime-1	Stable

Sustainable Information Exposition Promotion System

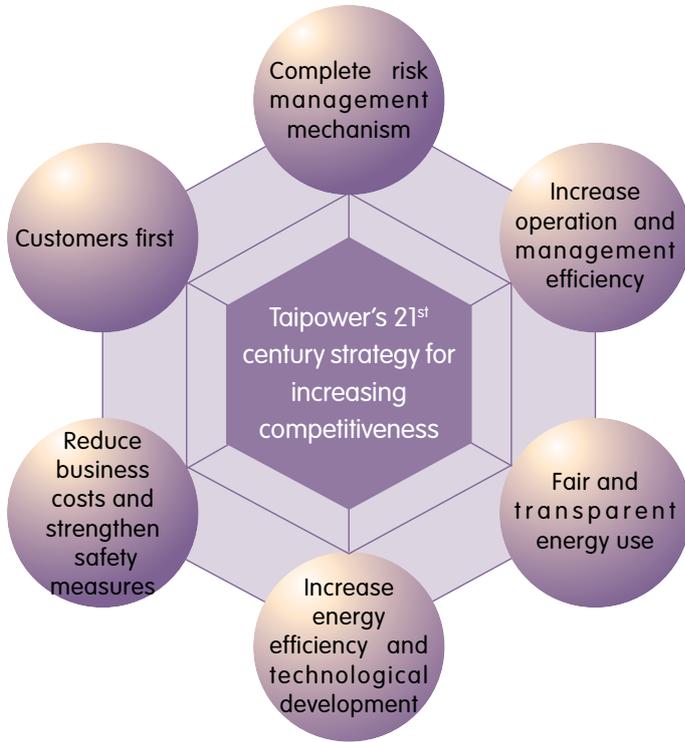
To make sustainability information transparent to the public, we have constructed this sustainability report promotion system (executed by the sustainability report editing committee). The vice president will be the director of the committee, whereas the other managers are responsible

for discussing the contents, basic principles and values that make up the sustainability plan. The committee carries out the plan, which is then inspected, confirmed and improved according to flaws found.

Sustainability Report Promotion System



21st Century Competitive Power Strengthening Strategy



1. Complete risk management mechanism
2. Increase operation and management efficiency
3. Fair and transparent energy use
4. Increase energy efficiency and technological development
5. Reduce business costs and strengthen safety measures
6. Customers first

1. Complete Risk Management Mechanism

Risk management is one of the most important components within our company's management system. Therefore, we not only strive to maintain stable power transmission, but also strengthen internal management, transportation safety, finance management, prevention and maintenance, hazard prevention and control, and emergency responses. In 2005, we established a risk management mechanism "power stability and safety."

In the future, Taipower will improve the risk manage-

ment system and include mechanisms such as risk recognition, risk analysis, risk evaluation and risk management. Taipower will also implement risk management tools (including FMEA) and hold corresponding classes and training for every employee so they can correctly recognize and handle risks and hazards.

Taipower hope to minimize risk through creating these strategies, organizing, systemizing, and making information transparent.



2. Increase Operation And Management Efficiency

In recent years, the price for fuel raw material has skyrocketed. However, price adjustments must take in government considerations and could not reflect on the growing costs, creating our greatest obstacle in management.

We have been continually upgrading equipment, investing, simplifying the work process, reasonably utilizing human resources, strengthening risk management, improving finance management and operation management,

and improving efficiency. All these efforts work towards increasing efficiency, decreasing costs and ultimately improving financial conditions.

We have been actively improving our profit ability through proper adjustments in management, innovations and expansion of the market. Our company will increase in value as it becomes more multi-dimensional and provides international service.

3. Fair And Transparent Energy Use

As a government-owned enterprise, we need to meet the government policy to keep and price stability. Cheap electricity rates can increase competitiveness of the industry and improve the standard of living. Since 1983, electricity prices have not increased as a result of increase in material price increases. Instead, profits have been used to help the people; electricity prices have since dropped 11 times, totaling to about 26.1% reduction.

The prices of fossil fuels in 2007 have increased 50~90% since 2003. Taipower's cost of electricity generated and purchased has increased 87% since 2003. Even though, the price of electricity had a 5.8% increase in July of 2006, it is not enough to compensate the cost of the fuels. Even though Taipower is trying to amend this lost in other areas, Taipower still had more than 30 billions NT dollars of deficit in 2007.

Taipower encountered many financial difficulties these recent years. Nonetheless, our company refuses to give up our social responsibilities. We have quietly set up stations in Taiwan which are low in resources to better serve everyone. Overall, Taiwan's power price is relatively low compared to other countries (as seen in the table below). We shall continue to announce information regarding electricity prices and inform society about our operations. Hopefully, we can promote the idea of conservation so that people can cherish the power we've worked so hard to generate.

Table of power prices in Taiwan and neighboring countries

Country	Average price (NT dollars/KWh)	Country	Average price (NT dollars/KWh)
Taiwan	2.1046	Thailand	2.7820
Indonesia	2.2104	Hong Kong	4.1347
Malaysia	2.3136	Philippines	5.0995
South Korea	2.7412	Japan	5.9606

Information from 2006



4. Increase Energy Efficiency And Technological Development

Our power system needs to increase transmission efficiency while the company is in negative growth. We have a long-term plan that utilizes related personnel who work hard to strengthen the system operation and maintenance, improve the power source and substation structures and install new substations and other generating equipment (such as a power capacitor). They also improve various engineering techniques and investigate for electrical theft, which reduced power line damages over the years. In 2007, the total power line damage rate was 4.75%, which is one of the lowest among the leading developed countries around the world.

Furthermore, to meet long term power demand and improve regional power supply-demand balance, Taipower plans to retrofit old power plants, such as Shenao power plant and Linkou power plant in the north, Talin power plant in the south, and Tunghsiao power plant in central Taiwan. Besides, Taipower also plans to install additional

power units at other existing or new green-field sites, such as Changgong power plant, Taipei Harbor power plant, Taichung #11, and Tatan expansion.

In order to meet high environmental protection standards, the power units of these new projects are all designed to be equipped with state-of-the-art high-efficiency air pollution control facilities, such as flue gas desulfurization (FGD), selective catalytic reduction (SCR), and electrostatic precipitation(ESP), and will be operated at high operational efficiency, thereby providing significant contributions in reduction of air pollutant emissions and supply of reliable power for support of the continuing economic development. In addition, Taipower also entrusted specialists to conduct comprehensive studies for beautification of power plants' buildings, the results of which are also incorporated into part of the project's implementation, making the installation of power plants well in harmony with surrounding scenic and improving the living standard of the people.

5. Reduce Business Costs And Strengthen Safety Measures

Reduce Business Costs

To increase business efficiency, reduce costs, and achieve sustainability, we implemented a 3-stage strategy:

- In 1992, Taipower began responsibility policies. Efficiency came as a result of improving work process and managing budgets.
- In 1998, Taipower officially implemented profit policies. Each division was responsible for accounting their profits and losses so that responsibility is clear.
- In June 2006, Taipower promoted the "plan to increase competitiveness." Through reduced costs and increased efficiency, we could strengthen the business structure and transform into a service-based enterprise.

With the government, Taipower simplified human affairs and implemented a yearly preferential benefit reduction measure, successfully reducing human affairs disbursement. Production forces had an upward trend along with

the growth of services; therefore, the average number of clients per employee and the average electricity sold per employee greatly increased, helping to reduce operation costs.



Strengthen Safety Measures

Since Taiwan population density is high, living quarters are small and cramped. Residents often install metal windows and shops put up advertisement signs. As a result, it is easy to cause electrocution and blackouts. To increase safety and reduce accidents, Taipower implemented a plan to improve high-voltage overhead lines in alleys that are less than 4 meters to 6 meters in width and neighboring houses. Accidents due to electrocution have greatly reduced as a result. In 2007, the total length of power lines installed was 5,743 kilometers, making the entire system 316,680 kilometers in length. Other safety measures included are as follows:

- Taipower painted "Climbing on electrical equipment is strictly prohibited" on obvious areas around electrical

equipment to prevent accidents.

- Taipower provide a free service of adding protection tubes around the power lines to protect people who approach distribution lines to hoist or unload goods. After applying at the nearest operation center, we will quickly install the safety measures and have the maintenance department track the service quality.

- Taipower utilize opportunities such as village assemblies, various (labor) unions or local government hazard prevention activities; for occupations that have higher risk of electrocution, we personally visit and counsel, make commercials or distribute flyers to increase social awareness of electrical safety.

Taipower employee productivity

Item(Unit)	Year	2002	2003	2004	2005	2006	2007	2007 Vs. 2002 Increasing rate(%)
Number of employees(person)		27,233	26,722	26,032	25,579	26,300	26,047	-4.4
Cost/per KWh sold (NT dollars)		1.9474	1.9269	2.0644	2.1137	2.1981	2.3798	22.3
Number of customer (Thousand users)		10,897	11,077	11,274	11,497	11,739	11,985	10.0
Sales of electricity(GWh)		151,193	159,380	167,478	175,293	181,593	187,075	23.7
Average number of customer per employee(User/employee)		479	495	519	540	533	553	15.4
Sales of electricity per employee(MWh/employee)		6,580	7,044	7,581	8,121	8,456	8,652	31.5

Note: 1. Employee count includes employees within the engineering department.

2. In order to standardize our values with the international electric industry, the average number of clients and electricity sold per employee is totaled and averaged in every department to give an average of 21,623.

6. Customers First

In Taiwan include Penghu-Kinmen and Machu area, we have 24 branches, 24 service centers and 280 substations,



creating a complete service network and providing an array of services for our customers. To focus on the opinions of the populace and protect consumer's rights, we often re-evaluate our policies. We hope to fulfill user needs and provide rapid and convenient service.

Respect Customers' Needs

To raise our service quality and understand the customer satisfaction with the various categories of utility operations, we have provided online satisfaction surveys on our website. At every service centers and substations, we provide satisfaction surveys for customers to complete. The statistical results are periodically revealed to improve our facilities for consumers to peruse.

One-Stop Service Desk

The service desk at every service centers and service substations process all types of applications, allowing one location to provide full service.

Online Application Service

Taipower makes efforts in providing diversified and convenient channels of application for customers. Besides using telephone and mail, customers also can apply for electricity on the internet. Taipower have added the option of applying online and downloading forms since 2001. There are 34 different types of electricity applications that can be performed on the internet.

Furthermore, Taipower have offered the service for customer to use "Citizen Digital Certificate" apply online since 2005. At any time, customers can go to Taipower's website, enter "Internet service desk", click "Online application", then choose the type of application desired. After entering personal information, our service agents will perform follow-up work.

Diverse Bill-Paying Options

Taipower have 11.98 million power users. In order to allow clients to pay utilities easily, we have provided multiple bill-paying options for the 26 thousand users outside of Kinmen, Matsu and remote areas:

1. Pay bills through financial institution and post offices.
2. Pay bills at financial institution and post offices (recommended for low-voltage users).
3. Pay bills at convenience stores.
4. Pay bills at Taipower Service Departments.

Establishing Call Centers, Unifying Service Window

Taipower have established north and central call centers, servicing our users 24 hours a day. The north call center covers Keelung, entire Taipei, Taoyuan, Hsinchu, Yilan, Hualien, and Taitung. And the central-region call center covers Miaoli, Taichung, Changhua, Nantou, Yunlin, Chiayi, Sinying, Tainan, Kaohsiung, Fongshan, and Pingtung. Customers can call the 1911 hotline for inquiries including billing information, electricity applications, distribution grid maintenance, and complains.

Customer Service Specialists

To establish means of direct communication with clients, Taipower introduced customer service specialists in 2002. These specialists periodically and actively visit high voltage clients and village offices. Understanding user needs helps us to know how to provide technical consultations solves customers' problems and wins user support and trust. In 2007, a total of 90,482 large power users (including 2,998 very high voltage users, 71,031 high voltage users and 16,453 village office users) utilized service specialists.

E-Mail Notification Service

To satisfy customers' needs in this age of internet, Taipower have provided e-mail service for high voltage users. Beginning August of 2005, Taipower established e-mail notification service. Currently 21,551 very high and high voltage users use this service, accounting for 90% of the 23,900 high voltage users in Taiwan. Taipower will continue to monitor user needs and expand our service content.

The Taipower's E-Mail Box

The Taipower's e-mail box provides a channel for customers to express opinions through the company website. All suggestions are collected at a responsible department, which then assigns the suggestions out to corresponding departments. Replies are then written and automatically analyzed by the system.

Total applications in 2003 are 350, 3,615 in 2004, 4,242 in 2005, 4,422 in 2006 and 5,093 in 2007. The amount of online customers increases annually, making this system an important communication channel between our company and our clients.



Sustainability Performance

Integrity Caring Innovation Service

Sustainability Performance

Social Indicator

Taipower And Community

For over 60 years, Taipower has been providing electricity to meet the demands of the public and the industry sectors. As the supply network reaching every corner of Taiwan, the Taipower is closely bonded with the 23 million population.

Bearing a sense of mission and importance, Taipower takes on its social responsibility earnestly, and presents Taipower's endeavor through this report. Taipower understand the importance of communicating with our stakeholder. By different pathway of communication, Taipower continuously improve itself according to the stakeholder's demands.

Supplying stable electricity is Taipower's priority. Our staffs engage their work with no dare of slight negligence. Therefore, provide a healthy work environment is also an important duty for Taipower.

To encourage positive public opinion toward Taipower, Taipower are aware of our social responsibilities as a "citizen enterprise" and actively participate in community services, environment protection, interactive communication with customers, and preservation of the ecology. Our effort was recognized by the government and was awarded the "7th National Community Service Award" in 2007.



Taipower's Commitments



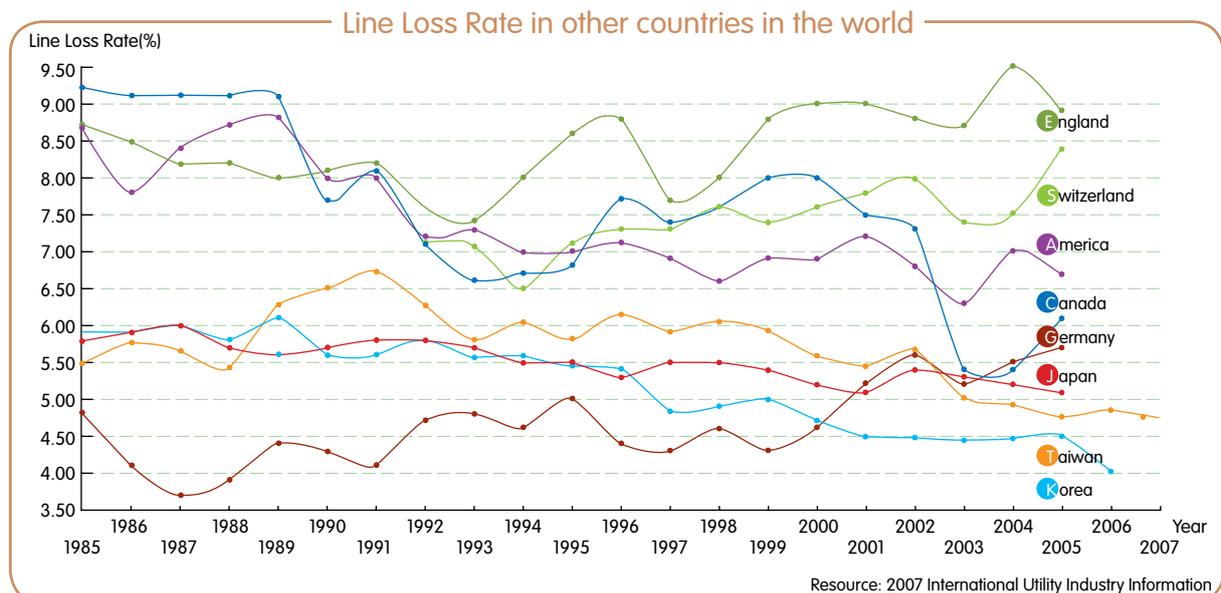
1. Provide A Stable Power Supply

A stable supply of electricity is essential for the development and prosperity of a nation. The recent development of IT industry and large scale public construction such as the MRT and the high-speed rail depend on a constant supply of electricity to maintain operation and profit. Although Taipower is the government-owned enterprise, it is closely linked to the populace. Therefore the market mechanism is the key that urges Taipower to progress unceasingly.

Increasing the reliability of power supply and decrease the blackout duration not only reduce the economic lost of the users, but also promote the security and stability of power generation and distribution equipments, reduce working accidents, and safeguard public safety.

Each year, Taipower takes in the consideration of economy development and the electric power demand situation, along with the national electric power policy, the energy circumstance, the environmental protection laws and regulations and so on to forecast the long-term electricity demand to and revises the long-term power source development plan.

During the situation of insufficient power supply, Taipower would process with standard procedures and measures. When a catastrophic event such as natural disaster, work safety issues, industrial accident, or damaging to the environment occurs, Taipower would evaluate the seriousness of the incident and organized a special task force accordingly to reduce the impact of the incident.



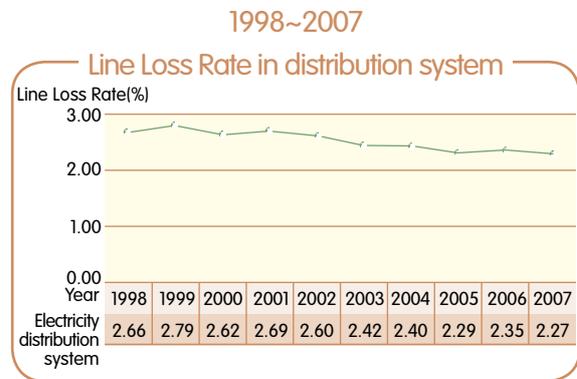
Reduce The Line Loss In The Distribution System

After the electricity is produced by the generation units, some energy is dissipated due to the resistance in the distribution network and equipments such as transformers in a form of heat. This loss of energy is a natural process and cannot be eliminated.

To reduce the loss of electricity, maintenances and replacements of generation, transmission and distribution systems networks are conducted alongside with education about proper electricity usage and inspection of illegal connection.

As a result of effort from all the regional offices, the

Line Loss Rate in the distribution system was reduced to a historic low of 2.27% on 2007 and the total Line Loss Rate was 4.75%.



Reduce Power Outage When Works Are Being Performed On The System

The following has been done to reduce the power outage when works are being performed to the system:

- To reduce the inconvenience caused by the power outage, the power outage is planned according to procedure.
- Scheduling all works that needs to be done on the same day to reduce the duration of power outage.
- Smaller constructions should cooperate with organized large-scale projects. If safety is insured, certain construc-

tion can be done without cutting out the electricity.

- In 2007, the average power outage due to works being performed on the system is 18.272 min per household.

Duration and the number of occurrence of Power outage due to construction

Year	Duration(min/user)	Occurrence per user
2004	25.622	0.115
2005	23.974	0.109
2006	21.544	0.100
2007	18.272	0.095

Reduce Accidents And Hasten Electricity Recovery

- Collect information of blackout due to accident. Computer analysis is performed monthly and improvement plans is proposed.
- Realization of regular checks and maintenances on key equipments.
- Inspect the main distribution system and transformers with high-tech equipments, make sure all the operators are certified, and improve the feed line network.

- Establishes the automated distribution feed line system. When a blackout happens, it will detect the location of breakdown rapidly and isolate it from the network, reducing the scope of and the duration the blackout influence.

- In the highly populated metropolitan area, accelerated the installation of underground distribution network. As of the end December of 2007, 41,864 km of cables was installed occupying approximately 35.0% total distribution wire.

- In 2007, the average accident power outage is 4.265 min per household and 0.135 time per household.

Duration and the number of occurrence of power outage due to accidents

Year	Duration(min/user)	Occurrence per user
2004	4.519	0.154
2005	4.304	0.147
2006	5.403	0.147
2007	4.265	0.135

Precaution And Response Mechanism For Typhoon

Before the typhoon season

Meetings are held every January to determine the objectives of precaution measures. Then each department carries on its assignment preparing for the typhoon season. During April, an assessment meeting is held. If any task is not complete, it should be scheduled to be finished by June. A drill is also held in May to examine effectiveness of the precaution mechanism. Every the preparation

task are inspected by the main office.

When a typhoon strikes

Each regional office should follow the standard procedure when a typhoon strikes. An emergency response team should be organized and mobilize technicians to recover the power supply is the condition is fit.

Under heavy shower and strong wind, Taipower's technicians recover electricity in typhoons

As long as there is a user without electricity, Taipower's technicians are out there fixing the connection.

When a typhoon strikes, most people stay home and watch weather reports hoping for a dayoff. However, Taipower's technicians stayed at their work stations and are ready to be mobilized whenever the transmission and distribution system is damaged hoping to reduce the inconveniences of the users.

Racing with time

The recovery process is also a race with time. Even though our technicians are experienced and well trained, accidents happen when technicians doesn't pay enough attention in their own safety. July 18th, 2005, one of our technician, Yu Hsiyuen, was shocked and damaged his right index and middle fingers. The Administrative Chief, Frank Hsieh visited him in the TaiChung Veteran Hospital and showed his appreciation and support to our employees. Whenever a typhoon is going to land on Taiwan, Taipower organized a response center hoping to reduce the damage.



Reduce The Occurrence Of Power Trip

Meetings are held every month to review each power trip proper actions are executed.

For more difficult and in-depth incidents, experts are brought in to investigate the causes and solutions of these incidents.

Reports are sent to each power plants quarterly to prevent similar situation to happen.

Improve or replace inadequate equipments and machineries.

2005 ~ 2007 Statistics on forced outages of thermal power generation unit

Cause	2005	2006	2007
Equipment malfunctions	13.5	20.5	9.5
Equipment deterioration	24	15	10.5
Process defects	1.5	5	4
Careless operation	5	4	2.5
Improper maintenance	4	5.5	4.5
Other	1	0	3
Total	49	50	34

Insure Power Supply In Science Parks

Science parks are essential to the economy and competitiveness of our nation. Decrease the occurrence of blackout and sudden voltage decrease is a main objective for Taipower. By improving of the electrical network, higher

the standards of operation and management procedures and the establishment of a special management team, the quality of power supply in the science parks should be enhanced.

Underground Network

● Installation of underground electricity transmission network

Electricity transmission network is an essential part of modern society. The addition, modification, and expansion of the electricity transmission network should go along with landscaping and go underground.

Taipower's 10 year underground transmission grid project

Year	Loop wire length (km)	Year	Loop wire length (km)
2007	85.87	2012	47.20
2008	90.11	2013	50.20
2009	89.56	2014	81.99
2010	97.17	2015	50.53
2011	106.50	2016	83.90
Total:783.02 Loop wire km			

● Electricity Distribution System

The distribution is most relevant to the public. For the beauty of the metropolis landscape, the smooth traffic, and reduction electric shock of residents, Taipower is dedicated for the underground electricity distribution network. As of the end December of 2007, 41,864 km of cables was installed occupying approximately 35.0% total distribution network.



Promote The Overall Quality Control And Service Quality

Taipower has a "standard of quality control management system" as a basic for quality control along with other management techniques and schemes to insure the high standard of our services. The Taipower also took part

of a national quality control competition to observe and learn from other enterprises to inspire the continuous improvement of our company.

Taipower units that pass the ISO-9001 : 2000 Standard

No.	Category	Units who pass the standard
1	Generation	Taichung, Takuen, Kueishan, Tunghsiao, Talin, Hsiehho, Shinta, Nanho, Linkuo, Mingtan, Tungpu, Taijashi, Wanta, Lanyang, Chienshan, Choulan, Chengwan, Kouping; 18 Power Plants
2	Transmission	Transmission Construction Region, Southern Region, Northern Region, Central Region
3	Power supply	Kaoping Branch, Jianan Branch, Taipei Branch, Hsintao Branch, Taichung Branch, Huatung Branch
4	Business	Hualien, Taitung, Penghu, Chiayi, Yilan, Hsinchu, Keelung, Yuenlin, Sinying, Changhua, Miaoli, Taipei South, Pingtung, Nantou, Taoyuen, Kaohsiung, Tainan, Taipei West, Taipei North, Fengshan, Taichung, Taipei City, Kinmen, Matsu
5	Engineering	Nuclear And Thermal Region, Taichung Region, Construction Region, Northern Region, Hoping Region, General Region, Wanrung Region, Plumbing Region, New Energy, and Kinma Region
6	Nuclear power	Radioactivity Testing Lab, Nuclear Technology Division, ISI, Nuclear Hind-End Division, 1 st Nuclear Plant, 2 nd Nuclear Plant, 3 rd Nuclear Plant, Nuclear Safety Division
7	Maintenance	Main Maintenance Division, Southern Maintenance Division, Northern Maintenance Division
8	Training	Main Training Center, Kaohsiung Training Center, Linkou Training Center
9	Other	Department of Corporate Planning, Department of System Planning, Department of Industrial Safety and Environmental Protection, Taiwan Power Research Institute, Department of System Operations, Department of Telecommunications, Department of Power Development, Department of Information Management
Total		85

2. Ensure The Safety Of Nuclear Power

In order to coordinate the state economy development and the demand of the population, providing stable, moderately-priced and high quality electric power is the goal of Taipower. To reduce the generation of carbon dioxide and diversify energy source, nuclear power is going to become the primary source of electricity.

According to the nuclear energy regulations stipulation, the safety of nuclear power must be guaranteed to can provide a long-term stability electric power and insure the public health. In order to achieve the goal, the safety control of nuclear power generation is the most important task for Taipower.

Promote Operation Efficiency

The operation of the nuclear plants is progressing gradually, but Taipower is striving for more improvements. Since 1993 Taipower has been evaluating our performance with the indicators set forth by the WANO.

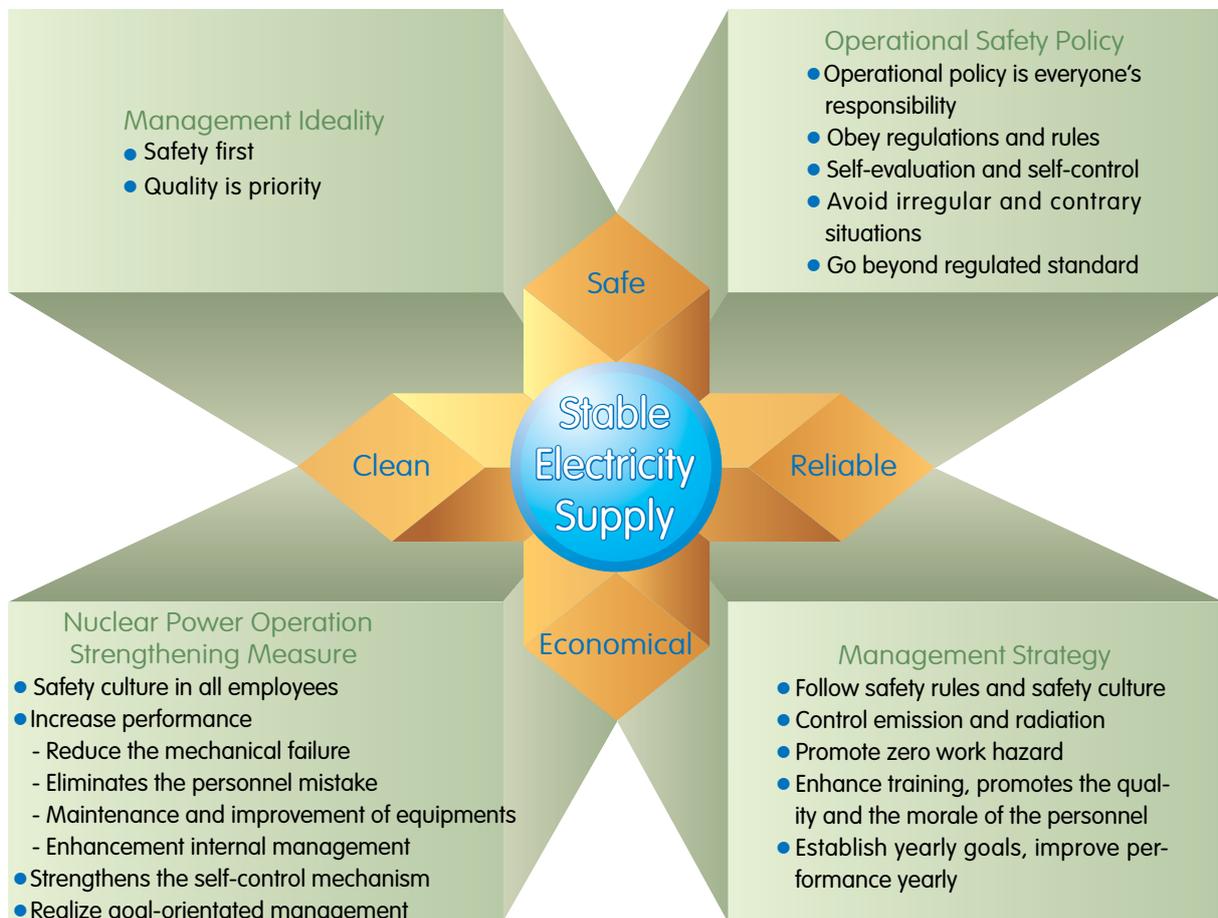
2007 Nuclear power generation unit performance

Item	Performance	Compare with historic data	Remarks
Electrical power generated	38.961 billion KWh	Historic best	19.3% of total electricity sold (13.5% of the equipments)
Volume index	90.28%	Historic best	World's 50 best generation unit: 1 st Nuclear Unit 2 : # 30 3 rd Nuclear Unit 2 : # 34
Low-level radioactive waste generation	259 barrels / 6 units	Historic best	1983 – 12,258 barrels 1993 – 4,576 barrels 2001 – 963 barrels, Decreasing significantly afterward
Scrams	2 times / 6 units	Historic second best	

Other than continuously monitoring each generators and safety and reliability of employees, Taipower set several challenging goals hoping to reach the international standards.



Nuclear Power Plant Operation Management and Safety Culture Structure



Nuclear Safety And Control

Unavoidably, radioactive particles are emitted during the nuclear fission process. Therefore, Taipower takes the safety issue seriously, safeguarding the health of the public and the environments.

Striving For Nuclear Safety

● Carries out the rigorous quality guarantee system: Dispatch an official to monitor the design, the purchase, the construction, the experiment, the training, and the examination, and monitors the result with the standard operational procedure simultaneously.

● Comprehensive nuclear safety control mechanism: Each nuclear power plant should self-govern itself, along with the review from the main office, the Atomic Energy Commission, and international experts. Together, Taipower use objective observation to discover area that can be improved.

● Strengthen the nuclear safety education: Through continuous training, accident evaluation, and experience feedback, Taipower is trying to sharpen the employee's self-evaluation and self-control abilities.

● Increase the reliability of machineries: With proper maintenance and upgrades and experience from peers in the industry, Taipower optimizes performance from the generation machineries and strengthens the self-maintenance ability.

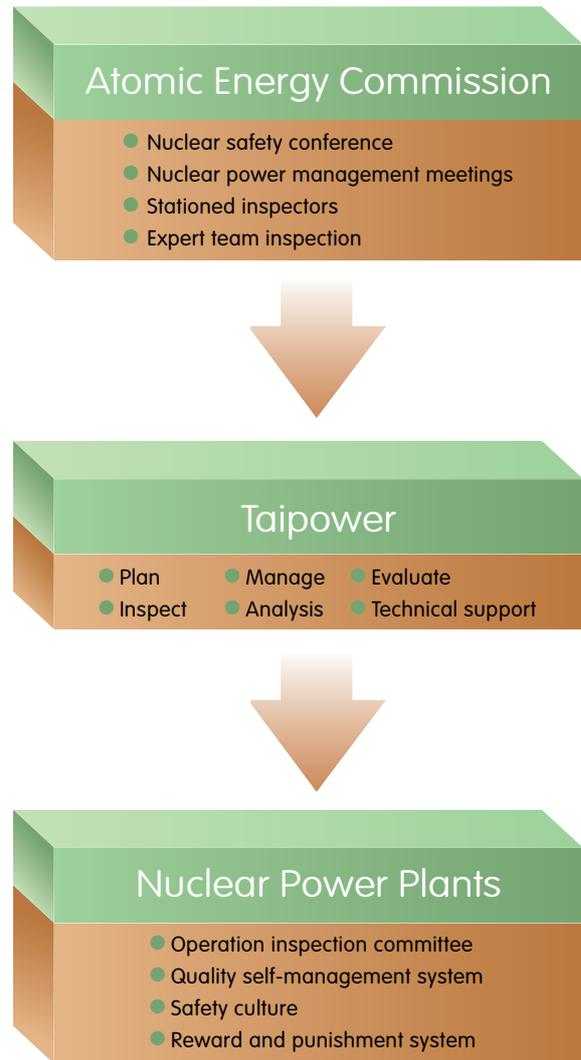
Disclosure Of The Nuclear Power Plant Operation Safety Information

Since 2001, Taipower has been inspecting the 1st, 2nd and 3rd nuclear power plant with the presence of inspector from the Atomic Energy Commission according to the stipulation of the "Nuclear Power Safety Indicators". The results of the inspections were reported to the Atomic Energy Commission and posted on Atomic Energy Commission's website.

http://www.aec.gov.tw/www/control/effect_index.php

● "Rating Criteria for Nuclear Safety Performance": The performance indicator is based on the risk informed concept. Using 10 reactor performance indicators to illustrate the safety of nuclear power plant. Green light represents no safety significance; white light means low-level safety significance;

Nuclear Safety Management Structure



yellow light means medium-level safety significance; and red light represents high-level safety significance.



2007 Rating criteria for nuclear safety performance

Rating Criteria for Nuclear Safety Performance

Indicator		Plant		1 st Nuclear Plant		2 nd Nuclear Plant		3 rd Nuclear Plant	
		1	2	1	2	1	2		
Initiating event	Unplanned scrams per 7,000 hours (automatic or manual)	●	●	●	●	●	●	●	●
	Unplanned scrams with loss of natural heat removal	●	●	●	●	●	●	●	●
	Unplanned power changes per 7,000 hours > 20% rated power	●	●	●	●	●	●	●	●
Mitigating system	Safety system unavailability of high pressure injection system/ high pressure core spray system	●	●	●	●	●	●	●	●
	Safety system unavailability of reactor core isolating cooling system or auxiliary feed water system (RCIC or AFW)	○	●	●	●	●	●	●	●
	Safety system unavailability of residual heat removal system (RHR)	●	●	●	●	●	●	●	●
	Safety system unavailability of emergency aP power system (EDG)	●	●	●	●	●	●	●	●
	Safety system functional failures	●	●	●	●	●	●	●	●
Barrier	Reactor coolant system barrier activity	●	●	●	●	●	●	●	●
	Reactor coolant system identified leakage	●	●	●	●	●	●	●	●

Note: 1. Green light represents no safety significance; white light means low-level safety significance; yellow light means medium-level safety significance; and red light represents high-level safety significance.
 2. RCIR in the 1st Nuclear Unit 1 has been restored to green light in the first quarter of 2008.

Processing, Storage And Disposal Of Nuclear Byproducts

Nuclear power plants can generate two kinds of by-product, low-level radioactive wastes and the spent nuclear fuel. These byproducts should be disposed of properly and stay away from humans.

The low-level radioactive waste can be incinerated, compressed or solidifies and stored properly in zinc coated barrels.

In 2007, 111 metric ton of spent nuclear fuel and 259 barrels of low-level radioactive wastes were generated. Since the toxicity of the low-level radioactive waste is lower than most of the other industrial hazardous waste and the toxicity decrease through time, it is easier to handle and control.

● Handling Of Low-Level Radioactive Wastes

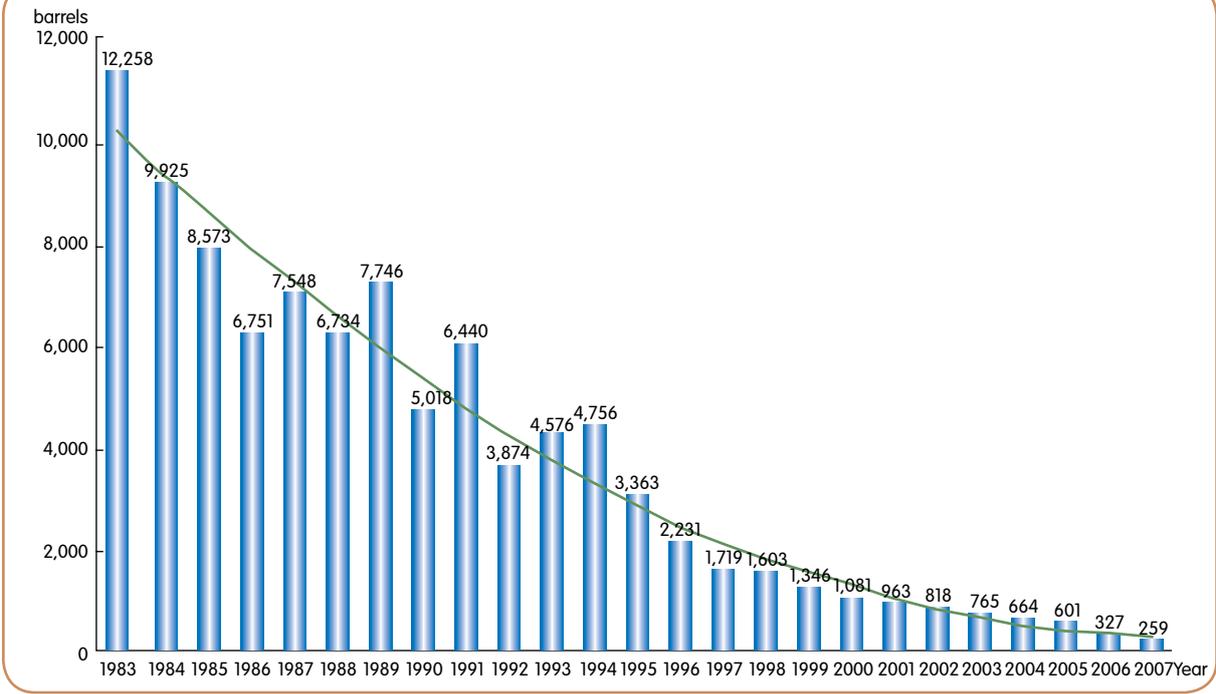
Before the final disposal, the low-level radioactive waste

is incinerated, compressed or solidifies and temporarily stored in the power plant.

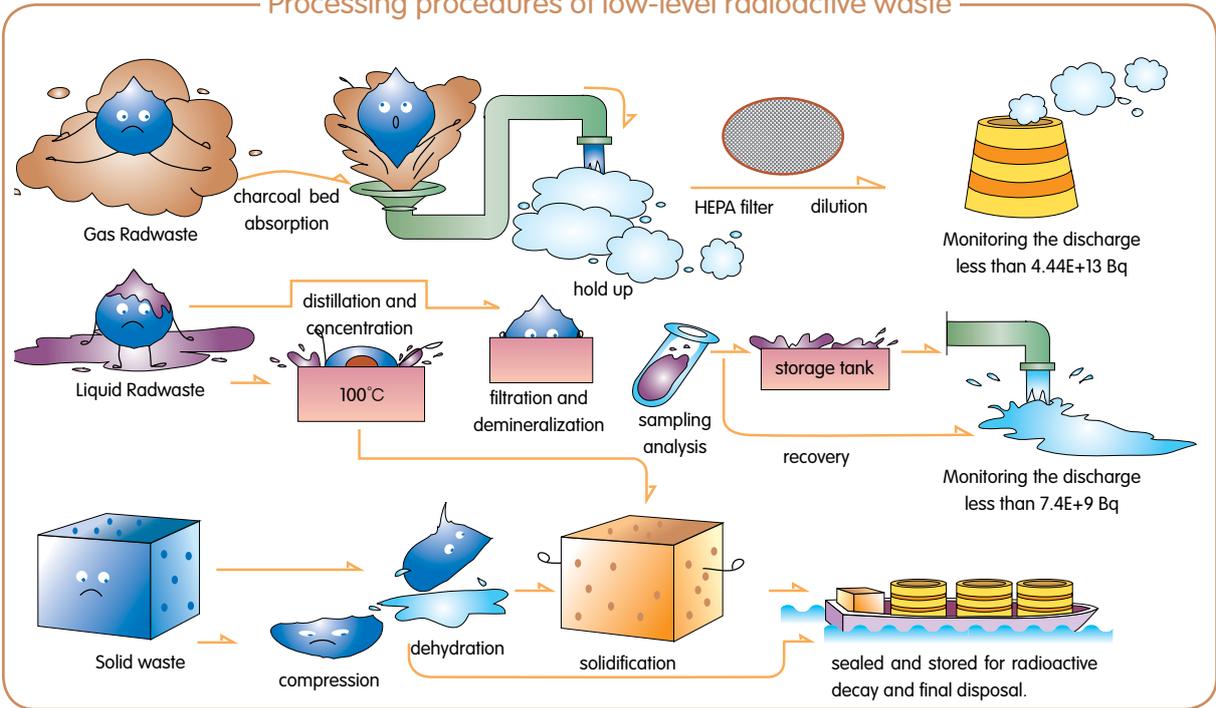
(1) Processing and Storage

To account for the demand of storage space and further improve the condition of the storage facilities, each nuclear power plant should improve its waste processing system and install inclinatory, compression and solidification facilities. In addition the amount of waste generated should be reduced from the starting point. Currently, the amount of low-level radioactive waste is reduced from over 10 thousand barrels to 259 barrels in 2007. (Each barrel contain 200 liter of waste) Also, the large modern storage facilities constructed in 1st, 2nd and 3rd nuclear plants can replace the old facilities, reduce the stress of storage space, and improve the storage quality.

Low-level radioactive waste production trend



Processing procedures of low-level radioactive waste



(2) Final Disposal

The nuclide half-life of the low-level radioactive waste is short. After 100 to 300 years of isolated storage, it should not be harmful to humans and the environment.

The multi-barrier disposal facilities for low-level radioactive wastes have been constructed throughout the world by the America, France, Sweden, England, Japan, Spain and Finland. These facilities are exhibiting no harm to the public health and the environment.

According to the "Nuclear Materials and Radioactive Waste Management Act", Taipower has been looking for site of final disposal. In April, 2006, the Legislative Yuan passed the "Act on Sites for Establishment of Low-Level Radioactive Waste Final Disposal Facility". It would take at least 5 years to complete site selection, environmental impact assessment, and investment feasibility study and another 5 years for the design, construction and application for operation permit.

● Management Of Spent Nuclear Fuel

Taipower applies the three-stage strategy for the management of spent nuclear fuel that is used internationally pool storage, dry cask storage, and final disposal.

(1) Pool Storage

After the spent nuclear fuels were removed from the reactor, they were temporarily stored in storage pool that cools the fuel and provides shielding from radiation. The storage pool at each of the 1st and 2nd nuclear power plant can accommodate the spent nuclear fuel produced in 30-year operation of each reactor, while that of the 3rd nuclear power plant would accommodate up to 40-years operation.



(2) Dry Cask Storage

Taipower plans to construct a dry cask storage facility at each of the 1st and 2nd nuclear plants before the pools are full. The combined capacity of these facilities and the storage pool would be sufficient for storing spent fuel produced during the 40-year operation of the reactors. On-site dry storage will also provide Taipower with ample time and flexibility to adopt the alternative of recycling spent fuel when it becomes feasible to Taipower in the future.

(3) Final Disposal

Since 1986, Taipower has engaged the Institute of Nuclear Energy Research, Energy and Environment Laboratory, and Central Geological Survey to conduct geological investigation and technology development for the final disposal of spent fuel. Based on the data and information so obtained, it is concluded that there are several potential host-rock, including granite, shale and mudstone, may be found at appropriate depths in some parts of Taiwan. Further geological investigation and safety assessment will continue to be conducted. The experience gained from such endeavor will also be conducive to Taipower's participation in the international or regional cooperation for spent fuel disposal when it is feasible in the future.



3. Improve Emergency Response Mechanism

Electricity is essential for modern society. Power outage brings inconvenience in the life of the public and economic loss of the industry. Other than maintaining normal power supply, Taipower established a comprehensive emergency response mechanism in case of accidental power outage.

The most common emergency incident is the disruption

of transmission system. Because the coverage of the transmission network is very broad, when it is disrupted by nature disasters, a lot of user are going to be affected.

Taipower pay close attention to the daily preparation, so when an agency happens, the technicians can be mobilized quickly and minimize the magnitude of the affect.

Identification Of Disaster Level And Response

When an emergency strikes, Taipower should have the ability to evaluate the situation to execute proper reactions.

Therefore, Taipower established an "Emergency Identification and Response Measure".

Emergency Identification and Response Measure

Type	In-charge unit	Grade	Description	Response measure
Public gas and oil pipeline disaster	Ministry of Economic Affairs and Taipower	Time for the establishment of a Central Disaster Response Center	By estimation, more than 15 people are injured, dead or missing, or more than 1 km ² of land is polluted, or social wellbeing is affected.	Establishing Central Disaster Response Center and MOEA Emergency Response Team
	Commission of National Corporations and Taipower	Grade A	More than 10 people are injured, dead or missing and the situation deteriorates continually that cannot be effectively controlled.	Notifying Executive Yuan, National Disaster Prevention and Protection Commission, Government Information Office, and National Fire Agency
	Commission of National Corporations and Taipower	Grade B	More than 5 people are injured, dead or missing and the situation deteriorates continually that cannot be effectively controlled.	CNC and Taipower establishing emergency team
	Taipower	Grade C	Not reaching grade B scenario and the situation under control.	Taipower undertaking emergency response
Transmission line disaster	Ministry of Economic Affairs and Taipower	Time for the establishment of a Central Disaster Response Center	By estimation, more than 15 people are injured, dead or missing, and more than 10 primary substations (including distribution substations) have power outage, normal power supply is not expected to be restored within 48 hours, and the situation deteriorates continually that cannot be effectively controlled.	Establishing Central Disaster Response Center and MOEA Emergency Response Team
	Commission of National Corporations and Taipower	Grade A	By estimation, more than 10 people are injured, dead or missing, and more than 10 primary substations (including distribution substations) have power outage, normal power supply is not expected to be restored within 24 hours, and the situation deteriorates continually that cannot be effectively controlled.	Notifying Executive Yuan, National Disaster Prevention and Protection Commission, Government Information Office, and National Fire Agency.
	Commission of National Corporations and Taipower	Grade B	By estimation, more than 5 people are injured, dead or missing, and more than 10 primary substations (including distribution substations) have power outage, normal power supply is not expected to be restored within 24 hours, and the situation deteriorates continually that cannot be effectively controlled.	CNC and Taipower establishing emergency team
	Taipower	Grade C	Not reaching grade B scenario and the situation under control.	Taipower undertaking emergency response

4. Maintain Information Safety

Information is a significant asset of Taipower and confidentiality of the information is important for the benefit of our company and customers. Security measures are conducted regards to the personnel, documentations, equipments, systems and the internet in order to reach

our information and communication security objectives. Taipower has established a well-rounded information and communication security policies and network to safeguard the privacy of our clients and the property of the company.

Objectives Of Taipower

Under the regulation of laws, Taipower protects the confidentiality, the integrity and the usability of the company information with all means necessary.

- Range of information and communication security mechanism.
- Establishment and evaluation of information and communication security policies.
- Organization and responsibly of information and communication security.

- Personnel safety control and training.
- Computer system safety management.
- Internet safety management.
- System access management.
- System development and maintenance safety management.
- Information assets safety management.
- Entity and environmental safety management.
- Planning and Management of sustainable mechanism.

Information And Communication Security Training

Regarding the new or reassigned employee who needs to access information with sensitivity and confidentiality, Taipower carries out a suitable security evaluation pro-

cedure. In addition, constant training on information and communication security can raise the awareness of the employees.

5. Improve Service Quality

Under the impact of internationalization, liberalization, and privatization, Taipower takes the consumers

demand as a priority to keep our customers and market.

Understand The Customer's Demand And Enhance Employee's Training

In order to understand the various needs of our customers, Taipower sets up 0800 toll free hotlines and conferences to communicate with customers at all levels. Proper

trainings of our employees are conducted to insure the quality of our services.

Continuous Service Training

To improve the knowledge and service attitude of the employees, Taipower held 44 training sessions with 1,616 people trained in 2007. The 24 regional offices also held 116 training sessions and 3,801 people attended these sessions.

a satisfactory level, a "Telecommunication manner evaluation measure" is published. Each department is responsible for the continuing betterment of service quality.

In additionally, to increase the telecommunication skill, the Taipower did some test on the politeness of the phone call receptionist through outside organizations between 2001 and 2005. In 2006, when the evaluation had reached



Stakeholders Of Taipower

Stakeholders are closely related to the proper management of the corporation. Continuous and direct communication with different stakeholders becomes an important issue. Through the establishments of mechanisms, edu-

cations, activities, advertisement, and toll free service lines, Taipower encourages the involvement and communication with the stakeholders.

Employees

1. Basic Rights And Benefits

Taipower provides equal opportunity and benefit to the employees who dedicated their life and enthusiasm. Tai-

power also respect our employee's right of speech and assembly.

FAQ On Employee's Right And Benefit

For the instant access of the information about employee's right and benefit, Taipower posted an FAQ on the

internal network.

Inquiry System Of Rules And Regulation About Human Resource

Due to the constant change of the rules and regulation, Taipower has established an online inquiry system which

offers the latest information for the need of the employees.

Gender Equality

According to "Employment Service Act", Article 5, the employer should not discriminate against both applicants and employers by the gender for the sake of the protection of

the equality of employment. Therefore, Taipower obeys the spirit of the act for the recruitment, entrance test design and career planning without any restriction of gender.

Respect The Right Of Assembly

All the employees are the members of the labor union. Even not signing any contract with the labor union, Taipower usually negotiate with the labor union if any arguments occurs. In addition, the Taipower is a state-owned corporation. According to "Government-owned Corporation

Management Act", Article 35, three members of the board should be appointed by the labor union, which helps the making of decision about company's policy and smoothens the relationship between the labor and the management.

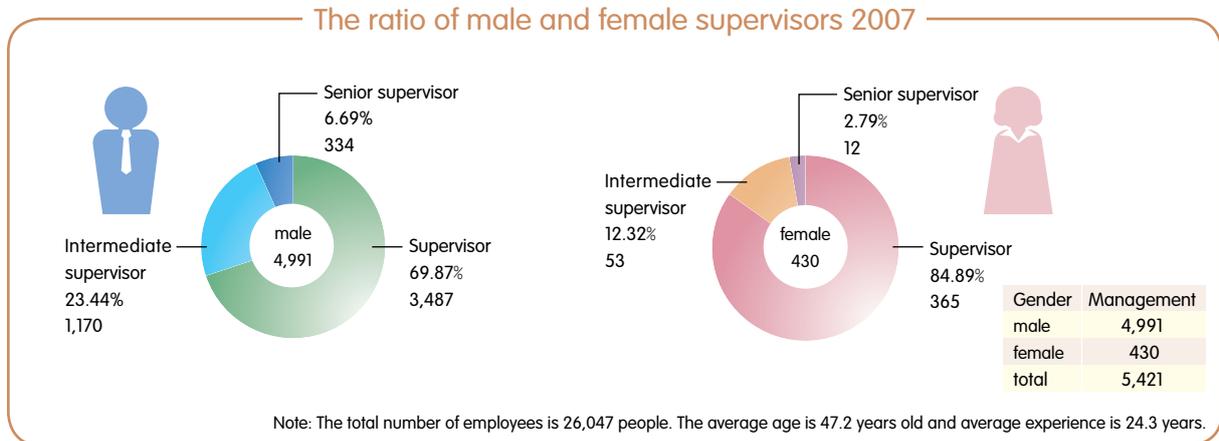


2. Systematic Personnel Training

Employees are the most important asset of the company. Continuous training of these employees can satisfy

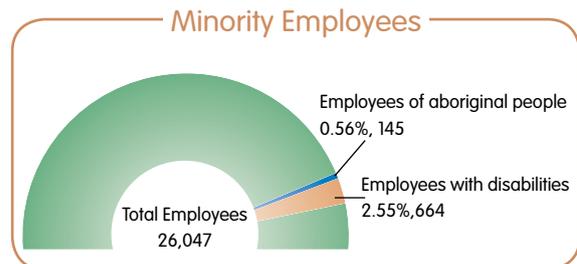
their sense of self-promotion and increase the competitiveness of the company.

The Ratio of Male and Female Supervisors 2007



Employment Of Disabilities And Aboriginal People

For the equal opportunity of the minority, the Taipower hires 664 (2.55%) employees with disabilities and 145 (0.56%) employees of aboriginal people. Both ratios are more than the required set by the government.



Continuous On-the-job Training

In 2007 a total of 45,859 employees have completed on-the-job and off-the-job training. In addition, 38 people have been sent to foreign countries for inspection, 82 for internship and 10 for studying for PhD or MS degree.

On-the-job and off-the-job training	
	2007
On-the-job and off-the job training	45,859

Overseas Training	
	2007
Inspection in foreign countries	38
Internship in foreign countries	82
Elite project	10
Total	130

Second Professional Specialty And Certification

Taipower has trained 252 employees with second professional specialties and assisted 2,136 people with their

acquisition of certificates.

Skill Contest

Since 1969, Taipower has been holding electrical engineering technician contests to inspire the improvement of the employees. In 2007, 482 people participated in 8

events of contesteam competitions and 447 people in 22 events of individual competitions. A total of 929 people from 64 different units joined this contest.

Employee Benefits

For the peace of mind of the employees, Taipower has created a benefit policy according to the regulation:

- Assistance for laid off, disability, death and retirement of the employee
- Subsidy with marriage, giving birth, and family loses
- Medical assistance
- Continuing education
- Loan for projects
- Student Loan for children's college education
- Dormitory for children
- Employee group marriage
- Employee group life insurance

Taipower E-Learning

For the purpose of lifelong learning, Taipower established an online college which offers more than 350 courses and allows its employees to take lessons without constrains

of time and location. In 2007 the average online reading hours are 10.9 hours per employee.

Information Forum

Due to the affect of climate change on the operation of Taipower, Taipower have set up an information forum in the Taipower Data Base allowing people to discuss about carbon dioxide and climate change hoping to find the way to improve our company with these changes by accumulation and exchange of knowledge. Some valuable advices have been made on the forum and Taipower encourage our employees to learn from the forum.



Taipower Thinktank – CO₂ and climate change forum

Business Ethics And Work Discipline

The corporations can influence the public life and social order significantly. Ethic and discipline is relevant to the company culture and are part of the competitiveness. To promote work ethics and discipline, following actions were taken.

- Directors often illustrate the importance of ethics and discipline publicly and set a rule model to other employees.
- Implement results related to work ethics and discipline issues are incorporated into the tutor manual as a training material.



3. Caring And Communication With Employees

Taipower is a large corporation with tremendous amount of employees. In order to encourage them, an effective management system is important. Before asking full efforts from the employees, Taipower needs to sa-

tisfy their demands. Therefore, establishing an assistance system that serves and helps the employees is helpful to form a win-win situation.

Regular Employer-Labor Meeting

Employer-Labor meetings are held regularly to increase the communications and interactions between the management level and the labors. To inspire good communica-

tions between the management level and the labors, Taipower gives out three awards each year to the departments with highest rating of capital-labor relationship.

Employee Assistance Programs

To help the employees to work without worries, Taipower established the "Heart to Heart" counseling center. During its establishment of 19 years, the "Heart to Heart" counseling centers are highly supported by the employees. According to "the Executive Yuan Employee Assistance Programs Plan" on October 25, 2007, Taipower set forth a "Taipower Employee Assistance Programs Plan" on December 31, 2007, striving for further improvement.



Heart To Heart

Since 1988, enthusiastic employees have been taking on the rules of consultants and help other employees with their issues in life, work, and emotion in the "Heart to

Heart" counseling centers. Currently, there are 75 "Heart to Heart" counseling centers and 492 counselors.

Achievements of The "Heart to Heart" Center

- Our effort was recognized by the Ministry of Economic Affairs in the beginning. In 1990 we were appointed to assist other MOEA agencies with counseling affairs and awarded the "Outstanding Achievement" medal.
- Recognition from other entities such as Central Personnel Administration, Council of Labor Affairs, Ministry of Economic Affairs, Ministry of Education, National Highway and Engineering Bureau, Chunghwa Telecom, and Taiwan University etc.
- "Heart to Heart" center's bimonthly magazine was awarded separately by the Taipei City government and the Council of Labor Affairs.
- Recognition from all the employees. They actively seek help from the "Heart to Heart" centers.
- Communication gateway between the employer and employees for improving their relationship.
- Resolving capital-employee disputes before the problems get worst.
- Promoting the sense of belongings.
- Providing opinions on company administration and welfare.
- Caring for employees and their families.



Customers

Customers are Taipower's important stakeholder. To provide comprehensive and instant services, we established

24 branches, 24 service centers, and 280 service substations scattering over every counties and towns.

Instant And Transparent Information

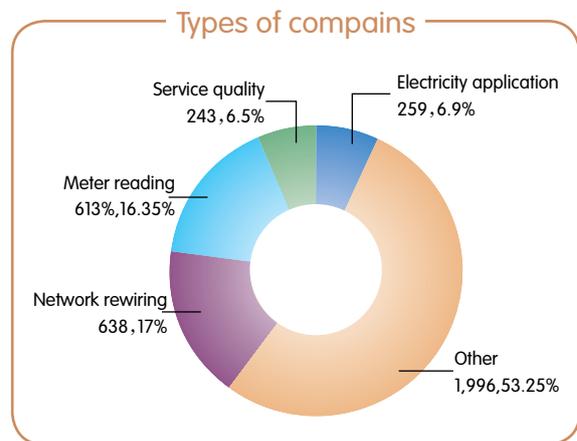
Each year we publish the Taipower Customer Service White Pager to show our commitment of integrity, caring, innovation and service. It can be downloaded at <http://www.taipower.com.tw>.

The Taipower website provides various information that are useful for the customers, such as the service locations, rate schedules etc. .

Accelerate The Processing Of Complaints

Taipower has worked hard in the area of customer complaints. In 2007, 3,749 complaints were recorded (of which 3,205 were complaints received via e-mail). Most complaints related to area such as network rewiring (638 cases, 17%), meter reading (613 cases, 16.35%), electricity application (259 cases, 6.9%) and service quality (243 cases, 6.5%).

Users can file all the complaints by calling their local business centers, service centers, or service stations by phones, sending the e-mail to <service@taipower.com.tw> , or calling the toll free number.



Call Centers

Taipower sets up two customer call centers for 24 hour assistance.

1.North Region Call Center: Covers Keelung, entire Taipei, Taoyuan, Hsinchu, Yilan, Hualien, and Taitung.

2.Central Region Call Center: Covers Miaoli, Taichung,

Changhua, Nantou, Yunlin, Chiayi, Sinying, Tainan, Kaohsiung, Fongshan, Pingtung.

Our clients can call the 1911 hotline to customer service centers for inquiries including billing information, electricity applications, distribution grid maintenance, and complains.



Continuous Research To Reduce Inconvenience

Continuing the installation of underground distribution network

- 1.Negotiating with the users on the locations of the electricity distribution equipments.
- 2.Reducing the inconvenience brought on to the traffic and pedestrians.

If the electricity cannot be connected on time due

to inability of equipment installation, Taipower should inform the customer honestly and look for ways to resolve it.

Taipower is committed to provide high quality electricity. Other than increase the coverage area and install more underground networks, the current network is renewed and well-maintained.

Confidentiality Of Customer Information

To protect the confidentiality of customer information, Taipower established a comprehensive security mechanism against different targets.

Employees

- 1.Raising the awareness of information security through guidance and training.

- 2.Controlling the accessibility to computer data base.

- 3.Laptop is not allowed unless permitted. Portable storage device should be used under regulation.

Outsourcing Companies

The company and related personnel should all sign contracts that agree not to leak any information to outsiders.

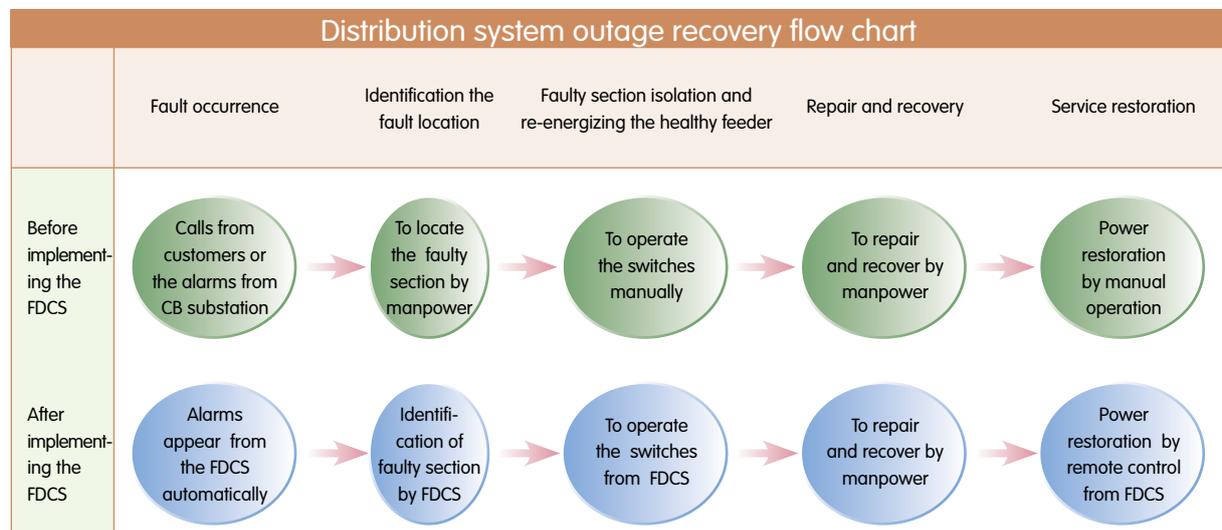
Public

Correct password, name and case number should be entered before accessing any information online.

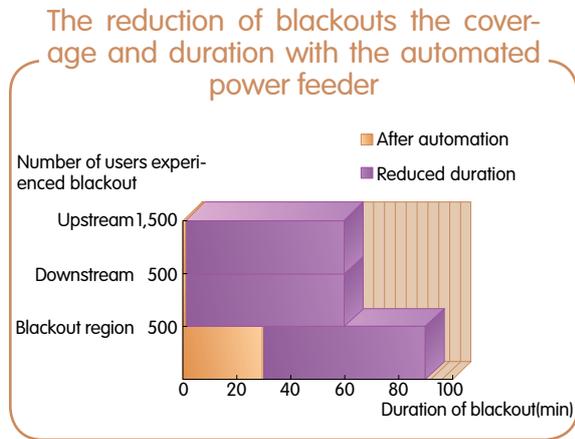
Implementation Of Distribution Feeder Automation

To improve service quality, Taipower is aggressively developing and implementing the Feeder Automation System in science-base industrial park, financial business centers, industrial park, export processing zone, city and town region, and remote mountain area through the island. FDCS(Feeder Dispatch Control System) is the integra-

tion of computer, telecommunication and automatic control technologies to hasten the recovery process of power outage. By means of SCADA(supervisory control and data acquisition) function, Feeder Dispatch Control Center periodically acquires the real-time operating information of the distribution network in normal operation.



- When a fault occurs, the automation system would provide the fault isolation and service restoration functions, which can effectively reduce the outage range and time. The outage duration reduced from 1 hour to 30 seconds ~1 minute.



- Taipower developed the first distribution feeder dispatch automation in 1995. By the end of 2007, 2,110 automatic feeders have been completed, which is about 25.6% of total distribution feeders.

Completion number of distribution automatic feeders

Year	NO. of feeders	Accumulative summation
Before 2003	179	179
2004	129	308
2005	673	981
2006	721	1,702
2007	408	2,110



Simplified Procedures And Convenient Inquiry

- Interactive voice system

Both call service centers have interactive voice systems. They provide the user the inquiries such as electrical bill, electricity connection or disconnection, and facsimile file services which provide users the application form and service explanation etc. .

- Online inquiry

Customers can inquire the status of the application online at Taipower's website. <<http://www.taipower.com.tw>>

- Online billing information

Since 2003, customers can access the billing information online with their account number. There are 3,353,987 customers checked their bill online.

- Electronic bill presentment and payment

By registering an online account in the Taipower website, the customers not only can check the billing information, they can also receive billing information through e-mail regularly, download and print payment slips, review their electricity usage chart, and pay their bills online. As of 2007, 67,721 users registered for the online account.

- Online payment

The online payment service was operational in 2002. Customers can transfer money from one of the 14 banks that cooperate with Taipower. As of 2007, 123,545 users paid their bill online. Taipower is negotiating with other banks so more customers are able to use this service.

Customer Satisfactory Survey

Satisfactory of the customers is important to Taipower. Taipower target on three levels of customers: regular users, medium users (100~1,000 KWh) and extensive users (more than 1,000 KWh) and perform telephone surveys regularly.

The overall satisfactory rates are over 85% in the past 5 years, but Taipower are still striving to provide better service.

Satisfactory rates in the past 5 years

Year	Satisfactory rates
2003	85.4
2004	85.3
2005	83.6
2006	86.1
2007	85.7



Activities And Community Relation

Taipower takes on its role as a citizen enterprise seriously. After being ranked as the 27th citizen enterprise in 2007 by the Common Wealth Magazine, we are committed to spread the caring and love of Taipower.

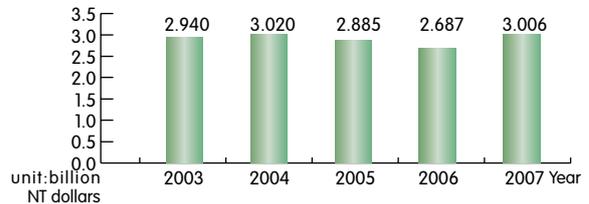
Due to the recent slow economic growth, the resources of social groups are limited. Taipower is dedicated to establish communication gateways in the community and increase the living standard, trying to get positive opinions from both the government and the public.

Powering Up The Love And Caring

Commitment Of The Advisory Committee

In 2003, Taipower established the "The Approval Committee of Power Development Foundation" (herein referred to as The Approval Committee). The Approval Committee's main purpose is to assist and care for communities and carry out social welfare work. From 2003 to 2007, the committee gave out approximately 14.5 billion NT dollars in as-

sistance funding helping communities in 18 county/cities and 80 towns and villages.



Good Neighbor Project

To promote harmony with neighboring communities, Taipower is actively involved in artistic or athletic events. For example, Taipower sponsored the "Second Edition of Electronic Book of Taiwan Nursery and Folk Songs", 2007

Kuandu Art Festival" and "2007 Electricity Guidance and Softball Invitation". In the mean while, Taipower lent a hand to assist the poverty, orphans, elderly and other minorities.

Study Center

As a response to the demand of the community and the ideology of "Care" and "Innovation", Taipower has set up study centers to prepare the citizens for the arrival of information age.

Currently, there are 24 study centers locating in Taiwan and Penghu area providing more than a thousand seats (more than three times of the national library). These study centers provide a perfect learning environment with comfortable chairs and appropriate lightings and air conditioning. The study centers not only provide a location for learning but also levitate the spiritual life of the public.

The study center is open from 8am to 9pm every day except for national holidays and scheduled cleaning and maintenance. Everyone can apply for a study card and exchange for a seat with that card.

Power Plant Open For Tourist

To let the public gain a better understanding on the electrical buildings of Taipower and clear any confusions, Taipower welcomes anyone to take a tour through our power plants including fission, fire, hydro, wind power plants, and the transformer station. During the year 2007, a total of 565,447 people visited. In addition, Taipower started

"2007 summer and winter electricity research and study camp for teacher camp", with around 300 participants.



📖 Electromagnetic Field Study And Announcement

In the recent years, people have been concerned about whether or not the electromagnetic fields produced by electric wires and equipments would affect human health. Due to this pressing matter, there had been numerous researches and studies for the past twenty five years. However, up until now, there has yet to be proves that show the exposure of low frequency electromagnetic health and health are positively correlated to each others.

To respond the frequent questions on electromagnetic field, Taipower has taken necessary actions.

- Assemble electromagnetic research team with the general manager as the team leader. To discuss and take care related matters together. Collect international data on electromagnetic field actively, and provide them to the environmentalist.
- Continue background research on the electromagnetic fields

of electric wires, transform stations, transformers, and household electronics. Understand the environment around electromagnetic field in the country and to protect public safety.

- Through public information channels, conduct conferences actively to let the public fully understand the nature of electromagnetic fields.
- Continue to research ways to lower electromagnetic field power and apply the result to new facilities to reduce its level to minimum .

And to resolve any further public questions on electromagnetic fields, Taipower conducted "Public household electronic repair class" on 2007 to propagate and communicate any concerns on electromagnetic fields. 5,670 people participated. The "National Electronic Communication Propaganda and Multi Media Ad Making Contest" had also around 3,000 people participated.

📖 Taipower Sport Teams

Since the foundation of Taipower 60 years ago, we provided quality electricity, a well built foundation of Taiwan economic development, and provided excellent support on sport activities. For example, the Taipower baseball,

basketball, badminton, volleyball, and soccer team are all traditional and strong teams in national amateur sports teams. The soccer team even won 10 consecutive games on National division A Contest.

📖 Interactions Between Lanyu Island Storage Facility And The Community

Since Taipower's takeover of the storage facility in Lanyu in 1990, not only the safety of the facility was paid a lot of attention, the staffs had been proud to be part of the community and helped community service, local feedbacks, and public communications.

For the past years Taipower had been sponsoring neighborhood donations and aids including:

1. Citizen emergency hospitalization.
2. Citizen emergency impoverishment relieve.
3. Sponsoring tribal traditional activities.
4. Sponsoring the elder care activity of community household care society.
5. Sponsoring learning and observing activities of Lanyu middle high dining culture .
6. Granting financial aid to students of all grades.



Community Participation Achievements

"Electricity is like love, it goes wherever it's needed".

Not only did Taipower provide electricity to everyone's modern life style, but also we expect ourselves to be the best "citizen enterprise" by fulfilling the responsibility to the community and environment. We strive to bring out the love and passion of the people of Taipower and become

an enterprise that contributes to the society.

Electricity business is a service trade. No matter how far the region is, or the hardship involved, we will deliver electricity to every possible corner. Taipower withhold such spirit and call ourselves affection generator for the community. Our goal is to deliver our affection to the unreachable corners.

Shine For Love – End Of The Year Senior Attentive Cares

At the beginning of every year, the A Kernel of Wheat Foundation and the Taitung Christian Hospital have always been sponsoring series of senior care activities. Since the union of Taipower with 'Juridical People of A Kernel of Wheat Social Welfare Charity Foundation' at 2005, Taipower have worked in coordination with Taitung Christian Hospital to host 'Shine for love – End of the year senior attentive care activities', targeting 500 lonely seniors in the Taitung and Hualien.

With the spirit of honoring the elder and sympathizing the poor, the employees of Taipower accompany the elders to shop for New Year supplies, fix up the building, cutting their

hairs and put up spring festival couplets. Through simple cares, Taipower help the seniors feel the warmth in their heart before the first cold front hits the Taitung before the end of the year.

A Kernel of Wheat Foundation Information

Due to the youth moving out of the eastern region for work, the eastern Taiwan had been experiencing higher population aging. Several seniors are living alone. In the November of 2002, Taitung Christian Hospital founded the A Kernel of Wheat Social Welfare Charity Foundation in hope of following the teaching of missionary services. They look after the elders by delivering meals, household service, and daily care with the teaching of the Bible, "Unless a kernel of wheat falls to the ground and dies, it remains only a single seed. But if it dies, it produces many seeds."

Seed Of Hope, Cultivation Of Hope

The educational awareness of Taipower is displayed through a series of take root actions.

The East Rift Region is the backyard of Taiwan, its back garden. The social welfare recourses and cares had always been scarce and slow. Therefore, with the help of Taipower, The Mennonite Christian Hospital, and the A Kernel of Wheat Social Welfare Charity Foundation raised the Seed of Hope plan. It provided 20 opportunities for poor but honest college students to work at home during the summer vaca-

tion. Under the several departments in Mennonite Christian Hospital, Taitung Christian Hospital, and A Kernel of Wheat Foundation, they work for 240 hours over six weeks.

The plan is to help the local students a chance to lower the tuition burden on their family and strengthen the tie of their hometown and the minorities in the society through community services. By helping the youngsters use what they were taught back on the society, they streamed in more hope to Hualien and Taitung Region.

Oath of The Seed of Hope

I am willing to dedicate myself as a seed of hope in the year of "Healthy Taiwan", learning from the Menno/Dongji/Hungji and work together for the wellness of eastern Taiwan. I am willing to activate the power of love and work for the future and beauty of my hometown, Hualien/Taitung/Pingtung.

Love Overflows

Though there's sorrow, and many tears. Let hope and courage, be restored again.

Love overflows, and that love is the seed of hope in our heart. The spirit flows, giving life to your dreams.

Love overflows, let your love be awarm and tender embrace, His love will show, like the sunshine upon your face.

📖 Firefly Child Reading Project

According to research, the reading ability of children is correlated to the future learning achievements. It's also the basis of all educations. Therefore, in 2007, Taipower cooperated with A Kernel of Wheat Foundation for the Firefly Children Reading Project in hope of increasing the reading recourses for the children in the area and proper moral educations through stories.

Taipower established nine service outposts in the local community or tribal churches of Taitung and Hualien and started five types of activities. They are meant to increase the children's reading interest, habit, and ability. Through stories and readings for moral educations, the children not only gained wisdom, but also put their personalities in a better shape.

1. Child after class tutoring class
2. Moral education spreading
3. Provides books and computers for the children
4. Mobile book cars
5. Christmas dream come tree activity

Grant A Wish Christmas Project

During the Christmas of 2007, Taipower and 9 Firefly Project Outposts had made 170 children's dreams came true. We also invited a troupe to perform plays for children, giving them a memorable Christmas. Other Taitung residents also joined our activities. Some Taipower's employees also volunteered to give out gifts to the children and bring smiles on their faces. Taipower realizes that the completion of this project is not an end of a mission, but the beginning of responsibility. We are strived to bring more happiness to the communities.

📖 When Taipower Meets Eden – Sparkle Of Love

Every Christmas, the students and family of the Eden students were invited to the company. Several charity bazaars were held together to display the Taipower calendars and greeting cards drawn by Eden students. Through the bazaars, people gained a better understanding on the artis-

tic abilities of the physically or mentally disabled and triggered more enterprises to participate, and passed around the sparkle of love. Help the disabled to work harder and tie them closer to the society.

📖 Combined Community Clean The Beach Effort, Give The Beach Its Clean View Back

Starting from 1994, Taipower had been sponsoring activities to clean the beach. It not only invites people to clean out the garbage on the beach side, but more importantly help us cherish our special costal recourses and help more people to feel attached to the sea.

Taipower hopes to give the beach line its clean view back through the care of participation of the community and keeping the cleanness around the power plant. Prevent littering and provide a clean and safe water ground to the public.

2007 Clean the beach

Units participated	15 Units: Kinmen Branch, Chienshan Power Plant, 1 st Nuclear Power Plant, 2 nd Nuclear Power Plant, Longmen Construction Division, Shenao Power Plant, Tatan Power Plant, Northern Construction Division, New Energy Construction Division, Tunghsiao Power Plant, Taichung Power Plant, Taichung Construction Division, Talin Power Plant, Nanpu Power Plant, Hsinta Power Plant
People participated	7,042
Garbage recycled	198,424 kg

📖 Combining The Strength Of Business Volunteers – Start Of The Voluntary Services

Taipower specified "Principles to Start Voluntary Services" to promote the voluntary works of customer service application, emergency repair assistance of electricity line, communication with electricity factory construction workers, assistance of spreading ideas on work safety and environmentalism. In 2007, the number of volunteers reached 493, with 36,897 services of people, and 126,124 total service hours.

Taipower will proceed to be an excellent "Business Citizen", live up to its "Responsibility of Local Community and Environment", continue working on quality electricity service, bring out the love and passion of Taipower people, and become a business that contribute to the society.

Achievements And Awards

National Civic Service Award

Every year, Taipower has spent over 75 million NT dollars for aiding the lower class in harsh winter environment, natural disasters, and educational assistance as a part of their responsibility in the society. Lately, they have sponsored community charity activities to assist the elderly, disabled, and younger generations of the aborigines. In 2007, Taipower was given the "National Civic Service" award presented by the Federation of Non-Profit Associations, Republic of China. This award represents the long-term effort that Taipower has contributed as well as

encouragement for future projects. "Every smile, every thankfulness, every embrace are all priceless feedbacks towards our company." In the future, the company plans to establish a team of "Community Charity Volunteers" to encourage employees to participate in charity events. With this team, the company wishes to bring the "family spirit" of kindness to every inch of the nation. The company promises that the "train of kindness" will run to wherever it is needed like electricity.

Engineering Quality Award

The offshore sea port of Shingda power plant is not only the first offshore construction in Taiwan, project of this scale is still outstanding comparing with the rest of the

world. With the completion of this project Taipower was awarded the gold medal of "Engineering Quality Award" on 2007.

Enterprise Environmental Award

In 2007, Taipower's investment of the Shingda power plant reduces the generation of air, water and solid pollutants significantly. The removal of NOx and SOx has improved the air quality of the Kaohsiung area significantly. Therefore Taipower was awarded the Enterprise Environmental Award for three consecutive years. (2005~2007)



Sustainability Performance

Integrity Caring Innovation Service

Sustainability Performance

Environmental Indicator

Taipower's Business Operations And The Environment

Due to the negative impacts from heavy industrial development, resource depletion and global climate change, our environment is deteriorating continuously. Moreover, the Fourth Assessment Report (AR 4) published by the United Nations' Intergovernmental Panel on Climate Change (IPCC) in 2007 left no doubt that global climate change is occurring and that billions of people would be threatened by global warming.

It is generally accepted that most of the an-

thropogenic greenhouse gas emissions that are blamed for causing global warming are emitted through activities by the power generation, industrial processes and transportation sectors. As a state-owned enterprise commissioned by the government to provide stable power services, Taipower has committed itself to the tasks of protecting the environment and developing renewable and low-carbon technologies, in order to cope with the challenges of global warming and fulfilling its obligations as a global corporate citizen.

1. Vision Of A Sustainable Environment

1. Taipower will continue to seek solutions to environmental problems, respond to expectations from the community, and fulfill our social and corporate responsibilities.

2. Taipower will endeavor to reduce management risks due to environmental issues, and cope with energy and climate change chal-

lenges. Moreover, Taipower will continue to improve our environmental management system and air pollution control measures, as well as reducing carbon dioxide emissions, recycling waste materials and promoting the concept of energy and resource conservation.

3. Taipower will also continue to integrate our

records for operational environmental information, and through disclosure of such information pursue sound com-

munications and interactions with our regulators, customers, supply chain and stakeholders.

Taipower's Strategies and Goals

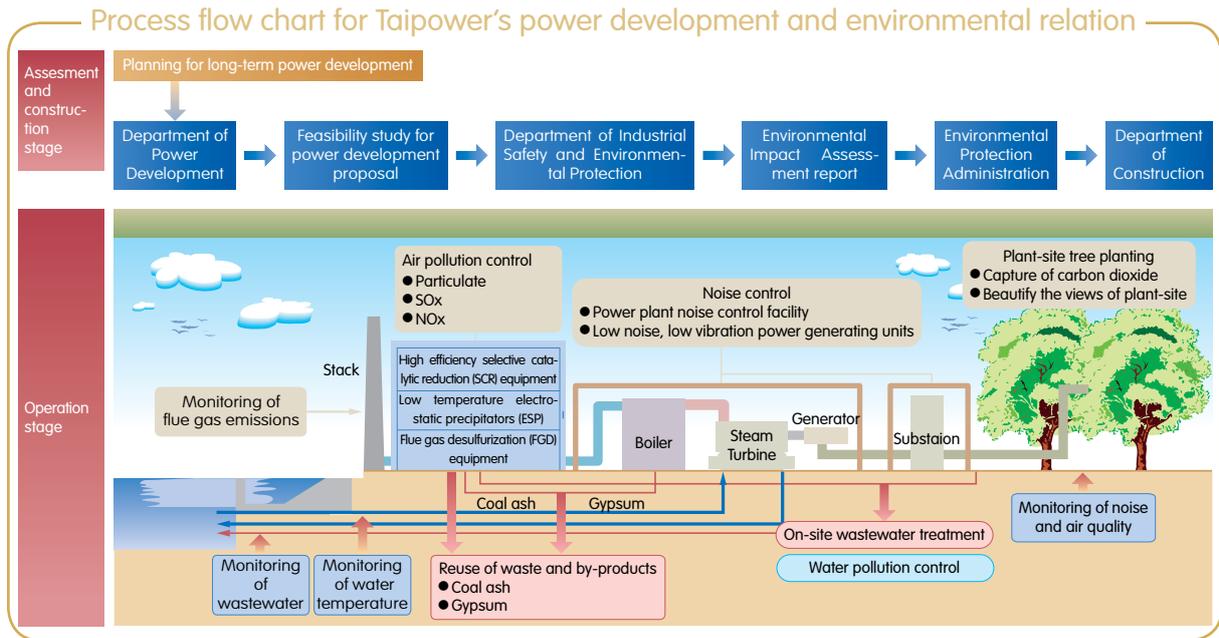
- Comply with environmental protection laws and regulations that are also in line with the carrying capacity of the environment.
- Carry out Environmental Impact Assessments to increase the environmental feasibility of our power development plans.
- Improve pollution control measures and maintain the quality of the environment.
- Increase public participation and strengthen promotion and communications.
- Affirm the quality of the environment and increase planning of tourist sites.
- Stress ecological conservation and restoration.
- Establish a complete environmental monitoring system.
- Focus on social work for communities.
- Formulate responses for the handling of environmental pollution disputes.
- Train personnel in environmental protection and establish comprehensive environmental protection groups.
- Promote Environmental Management System (ISO 14001).

2.Action Plan For Sustainable Environment

Taipower will strive to use the best available technologies, work with our employees to reduce the environmental impacts resulting from our operational activities, and

demonstrate our determination to become a green corporation through the following actions.





Establish Environmental Management System

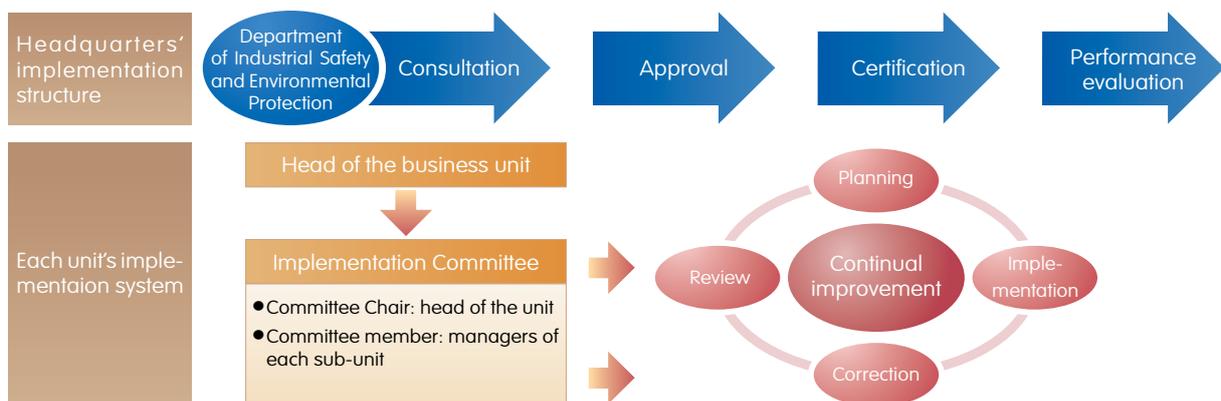
The core of the ISO 14001 environmental management system is in encouraging the companies to pursue voluntary and continuous environmental performance improvement to improve their operational efficiency, as well as to enhance their competitiveness and corporate image through reducing environmental pollution.

In order to fulfill Taipower's commitments and goals for environmental protection and effectively manage and improve environmental performance, Taipower has been promoting the establishment of environmental management system (EMS) since 1997. The establishment of EMS within Taipower was initiated from department units

with most significant environmental impacts, such as the power generation, construction, system maintenance and business branches, and further extended to the rest of the units.



Implementation Structure for Taipower's ISO Environmental Management System



- Implementation procedure for ISO 14001 environmental management system

The core of Taipower's environmental management system (EMS) is in the implementation of environmental protection activities following the PDCA management cycle outlined in ISO 14001. In accordance with the PDCA steps, the various departments and business units plan, implement, review and improve their environmental actions, so as to achieve progress towards specific environmental goals.

Moreover, the systematic structure of the EMS allows each Taipower employee to understand the environmental impacts resulted from the daily activities, and that individuals may adopt suitable efforts to mitigate their impacts to the environment.

- Current status of ISO 14001 certification

Within Taipower, ISO 14001 certifications were first

achieved by three power plants in Taichung, Talin and Linkou respectively, and followed by other department units later. At the end of 2007, 48 Taipower business units have received ISO 14001 certifications.

- Assurance of continual improvement through periodic reviews

In order to ensure that ISO14001-certified business units actually achieved continual improvement, Taipower published the Guidelines for Performance Evaluation of Taipower Business Units' Environmental Management System to serve as the guidance for conducting internal review of EMS. In 2007, 32 ISO 14001-certified Taipower units were reviewed in accordance with the requirements set forth in the Guidelines, and the results show that they are all in compliance with the requirements for legal compliance, pollution prevention and continual improvement, and no major non-conformances were found.

Table of units in Taipower who have been accredited for ISO 14001

Certified system	Unit name				
Generation	Taichung Plant	Talin Plant	Linkou Plant	Hsiehho Plant	Takuan Plant
	Nanpu	Hsinta Plant	Mingtai Plant	Tungshiao Plant	Tungpu
	Guehsan Plant	Chienshan Plant	Lanyang Plant		
Power supply	Kaoping Branch	Jianan Branch	Huatung Branch	Taichung Branch	Hsintao Branch
Nuclear generation	1 st Nuclear	2 nd Nuclear	3 rd Nuclear		
Business	Tainan Branch	Pingtung Branch	Taipei City Branch	Yuenlin Branch	Taitung Branch
	Yilan Branch	Fongshan Branch	Taichung Branch	Taipei South Branch	Keelung Branch
	Changhua Branch	Chiayi Branch	Taoyuan Branch	Sinying Branch	Miaoli Branch
	Taipei North Branch	Penghu Branch	Matsu Branch	Kinmen Branch	
Maintenance	Department of Maintenance				
Transmission line and substations project	Southern Region	Northern Region	Central Region		
Construction	Heping Construction Region	Plumbing Construction Region	Wanreng Construction Region	General Construction Region	
Total	48				

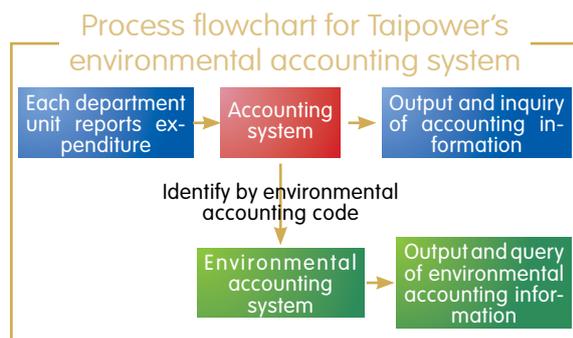


Introduce Environmental Accounting

Taipower concerns greatly about environmental issues throughout the operations, and understands deeply that while conducting environmental protection activities, the environmental costs and benefits need to be assessed quantitatively, in order to enhance the quality of environmental management decision and efficiency.

Thus, Taipower started to help the department units in establishing environmental accounting system in 2003. As the introduction of such an accounting system involved multiple department units, the headquarters first established the environmental accounting organization as a project. In 2006, an environmental accounting information platform was established to facilitate units' collection and registration of environmental information which were not previously recorded.

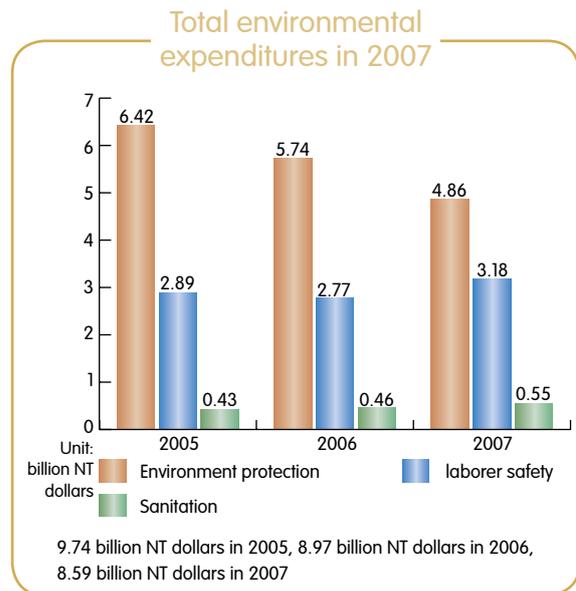
In order to improve the accuracy of environmental information, the established environment system in 2007 was also connected with the corporate information system, so that such information can be reported on-line in real-time, while the expenditure is being recorded by the accounting system, which not only saves manpower but also improves the data's completeness.



● Move toward world-class level

Taipower's environmental accounting system is special in that it includes not just environmental expenditure information but also occupational sanitation and safety expenditure information. Through expanding the scope of the environmental accounting system, we are able to quantify the costs of all environmental related activities (including environment, sanitation and laborer safety aspects), and this capability has enabled Taipower to become one of the few companies in Taiwan which can conduct real-time statistics and analysis of environmental expenditure.

In 2007, Taipower's total environmental expenditures amounted to 8.59 billion NT dollars, which can be further broken down to costs for environmental protection (4.86 billion NT dollars), occupational safety (3.18 billion NT dollars) and health related costs (0.55 billion NT dollars) respectively.



2007 Environmental costs and performance at Taipower's thermal power plants

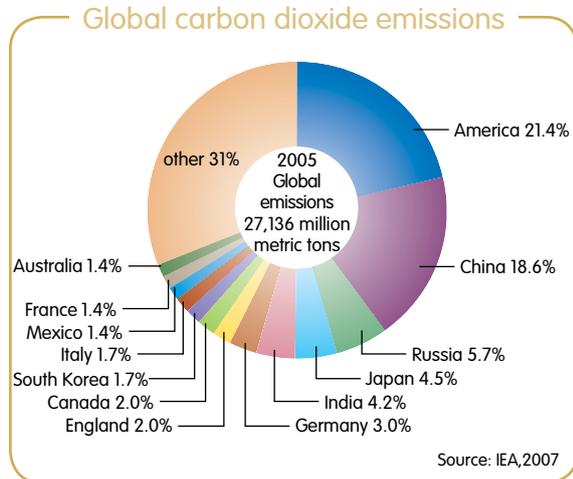
Unit: million NT dollars

	Shenao	Hsiehho	Linkou	Tunghsiao	Taichung	Hsinta	Nanpu	Talin	Chienshan
Business operation costs	8.327	403.906	64.724	361.804	425.437	720.087	693	5.955	28.804
Costs involved in linking upstream and downstream suppliers and clients	0	0	0	0	0.025	0.642	0	0.329	0
Managerial costs	13.673	0.031	6.729	14.661	12.345	65.504	17.659	6.034	0.046
Research and development cost	0	26.889	0	0	0	0	0	0	0
Social activity costs	0.913	1.370	0.140	22.537	1.834	3.153	0.688		
Losses and development cost	0	0	0	0	0	0	0	0	0
Official fees and taxes as well as other expenses like carbon tax	64.631	139.461	17.053	1.088	117.455	88.385	0	111.201	14.069
Total	87.543	571.656	88.646	400.090	557.096	877.770	19.040	123.520	43.697

Cope With Climate Change And Global Warming

Climate change caused by greenhouse effect has become the most pressing global environmental issue today. Though Taiwan is not a signatory of the United Nations

Framework Convention on Climate Change, and has no legal greenhouse gas (GHG) emission reduction obligation, Taiwan does emit 1% of the global anthropogenic GHG emissions, due to its unique energy and industrial structure. Even without legal obligation, Taiwan is determined to reduce GHG emissions voluntarily in order to safeguard the environment for our future generations.



The GHG emissions from the power sector are mostly due to the burning of fossil fuel in power generation processes. Because Taipower still relies mostly on thermal power plants for power generation, we understand that the carbon dioxide emission issue will incur higher risks for the utility industry than other industry in future GHG emission control schemes.

Greenhouse Effect and Greenhouse Gases

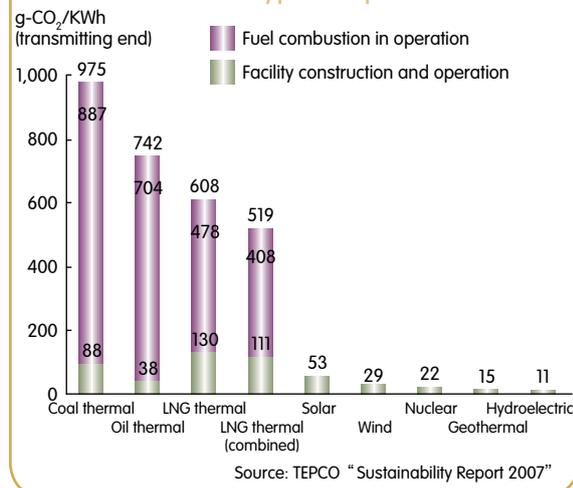
Greenhouse Effect

The sunlight enters our atmosphere and passes through a blanket of greenhouse gases, such as carbon dioxide and methane, before reaching the Earth's surface. After reaching the surface, some of the sun's radiant energy is absorbed by the surface, while other (often in longer wavelength form) is reflected back to the atmosphere but trapped by the greenhouse gases instead of escaping to the outer space. This heat-trapping effect is called the greenhouse effect.

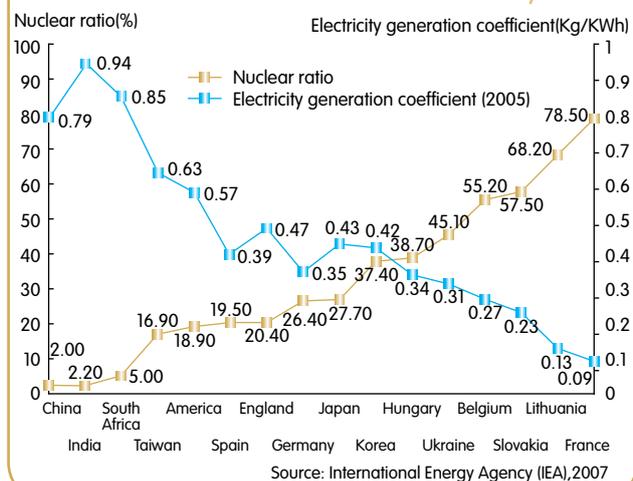
Greenhouse Gas(GHG)

In the Kyoto Protocol adopted by the Third Conference of the Parties of the United Nations Framework Convention on Climate Change in 1997, GHG reduction obligations were established for six greenhouse gases, namely carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), sulfur hexafluoride (SF₆), perfluorinated compounds (PFCs), and hydrofluorocarbons (HFCs). Of the six GHGs, HFCs, PFCs, and SF₆ have the highest global warming potentials, but due to the great content of carbon dioxide in the atmosphere, carbon dioxide has the greatest contribution to global warming at about 55%.

Lifecycle CO₂ emissions different types of power



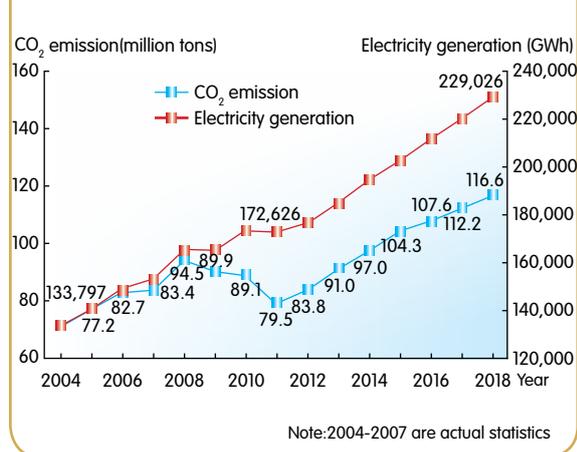
Global nuclear power Ratio and Carbon Dioxide Emission Intensity



The fossil fuels used by thermal power plants can be coal, natural gas, diesel or fuel oil. As burning of these fossil fuels all generate great carbon dioxide emissions, many countries have resorted to nuclear power as the possible solution for reducing carbon dioxide emissions while not affecting power supply. In Taiwan, the power supply from renewable energy is unstable due to weather conditions and can only serve as auxiliary power source. Moreover, the share of power generation from natural gas fired power plants in Taiwan is already high, and will unlikely to be greatly expanded due to energy security concern. As for nuclear power, under the government's Nuclear-free Homeland policy, only the construction of the 4th Nuclear Power Plant is being considered in Taiwan. In the future, if nuclear power is considered as the electrical energy option, Taipower will adjust the share of nuclear power to total power generation in accordance with government policy and effectively reduce GHG emissions from power generation activities. However, prior to that we still need to rely on thermal power plants, The adoption of modern coal-fired plants make the emission way lower than the regulations. Moderate use of coal-fired plants can provide more economical electricity, reduce costs, and maintain constant electricity supply.

Based on the estimation of Taipower's power development program, in the next 10 years, carbon dioxide emissions from Taipower's thermal power plants will

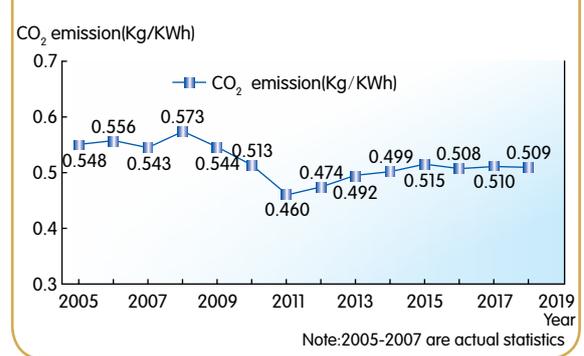
Taipower's carbon dioxide emissions and power generation trend based on estimation of 2007/08 power development program



continue to rise. However, under the supply side management measures of our GHG control strategy, the carbon dioxide emission intensity will show a decreasing trend and drop to below 0.51 kg CO₂/KWh during the 2016-2018 period. Taipower will try to maintain at least that emission intensity for the power sector, so that as long as the electricity demand is reduced through energy conservation measures on the demand side, carbon dioxide emissions will also be reduced on the supply side.

Under the scenario of equal power generation, carbon dioxide emissions in 2018 will be 8.3% less than those in 2006 emissions.

Taipower's carbon dioxide emission intensity trend based on estimation of 2007/08 power development program



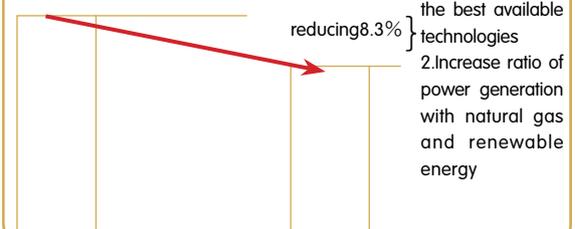
Taipower's carbon dioxide reduction efforts

In 2006, carbon dioxide emitted 82.7 million tons and power generated 148,851 GWh

In 2018, carbon dioxide will emit 75.8 million tons and power will generate 148,851 GWh

Power supply side management

1. New power generating units adopt the best available technologies
2. Increase ratio of power generation with natural gas and renewable energy



Taiwan's power generation carbon dioxide emission intensity

2005	0.632 KgCO ₂ e/KWh
2006	0.638 KgCO ₂ e/KWh
2007	0.637 KgCO ₂ e/KWh

Source: Bureau of Energy, Ministry of Economic Affairs

Taipower's GHG control strategies and action plans

Control strategy	Action plan	Measures	Note
Supply-side management	<ol style="list-style-type: none"> 1. Adopt the best available technologies for new generating units. 2. Improve the average efficiency of existing thermal power generating units. 3. Increase the share of natural gas power. 4. Increase the share of renewable energy. 	<ol style="list-style-type: none"> 1. Adopt supercritical coal burning generating units with efficiency of 42.3%. 2. Gradually improve efficiency of the existing units. 3. Natural gas power generation ratio reach to 27.5% in 2018. 4. Continue to expand renewable energy. Installed capacity reach to 5,130 MW in 2010. 	<ol style="list-style-type: none"> 1. New units for Shenao, Linkuo, Changgong, Talin plants. 2. Improvement plan for Hsinta #1, 2 units and Taichung (#1-8 units). 3. Based on power development program. 4. Based on power development program.
Demand-side management	<ol style="list-style-type: none"> 5. Promote energy conservation to reduce power load. 	<ol style="list-style-type: none"> 5. Continue to promote internal energy conservation and participate in external promotional activities. 	<ol style="list-style-type: none"> 5. Promoted energy conservation to 323,986 people, and visited 5,217 consumers that use electricity amounts over 100KW in 2007; cooperated with Energy Bureau's comprehensive energy conservation measures; achieved saving electricity amounts of 1.835 billion KWh in 2006-2007.
Improve power transmission and distribution system	<ol style="list-style-type: none"> 6. Improve transmission and distribution efficiency and reduce line loss. 7. Step up SF₆ control to cut down its dissipation. 	<ol style="list-style-type: none"> 6. Maintain transmission loss to below 5%. 7. Establish SF₆ management system, improve recycle and reuse. 	<ol style="list-style-type: none"> 6. Maintained transmission loss to below 5% in last three years (4.75% in 2007). Continue to improve system supply capacity and reliability to achieve transmission efficiency. 7. Establish SF₆ management system before the end of 2008.
Management, supervision and verification	<ol style="list-style-type: none"> 8. Speed up acquisition of know-how for establishing the GHG management system. 9. Create environmental accounting system. 	<ol style="list-style-type: none"> 8. Continue to promote external certification for relevant units' ISO 14064-1 GHG management system. 9. The establishment of environmental accounting system and the publication of sustainability report had finished in 2007. 	<ol style="list-style-type: none"> 8. 16 units (including thermal and nuclear plants, Takuan and Mingtan pump and storage plants and Kinmen business branch) received certifications in 2007. 9. Environmental accounting system has established and sustainability report has continued to update.
Research and development	<ol style="list-style-type: none"> 10. Develop technologies for GHG reduction and renewable energy. 	<ol style="list-style-type: none"> 10. Actively promote research and development of relevant technologies (renewable energy, new energy, CO₂ recovery and reuse, etc.). 	<ol style="list-style-type: none"> 10. Reserve CCS facility space for new coal-fired power plant.
Increasing plantation	<ol style="list-style-type: none"> 11. Continue the planting and greenery work. 	<ol style="list-style-type: none"> 11. Continue planting in existing sites. Provide funding for planting efforts in new development projects. 	<ol style="list-style-type: none"> 11. Completed 261 hectares of plantation in 2007. Taipower cooperates with local governments to plant trees over 150 hectares.
Domestic/International cooperation	<ol style="list-style-type: none"> 12. Sign cooperation MOU with government agencies. 13. Participate in domestic/international reduction programs. 	<ol style="list-style-type: none"> 12. Sign cooperation agreements with competent authorities. 13. Participating in Bureau of Energy's Voluntary Emission Reduction project since 2006. 	<ol style="list-style-type: none"> 12. In 2007, Taipower cooperated with Bureau of Energy's "All Pitch in Oil/Gas Carbon Reduction Campaign to promote 10 million tons reduction of CO₂ during 2005-2015. 13. In 2007, the Tunghsiao, Hsinta, and Taichung plants received validation of ISO 14064-2 GHG voluntary reduction, estimated to accumulate 0.855 million tons CO₂ reduction in 7 years.

GHG Inventory And Reduction

Since the Kyoto Protocol have come into effect, the reduction of future GHG emissions will certainly affect our overall GHG strategy. Moreover, because GHG reduction is already a must for all major corporations, obtaining the knowledge of our own GHG emissions through surveys will help us in establishing future emission reduction goals.

In 2004, Taipower formed the GHG Survey Group to start conducting the internal GHG survey process. Following the establishment of the GHG Information Management System in 2005, all department units were requested to report GHG data for relevant activities to be used as inputs to the management system at the beginning of each year, so that they can be integrated and analyzed. After the reporting of such data, company employees with qualifications in GHG validation will then go to each reporting unit to conduct validation audit in order to confirm the validity of the reported information.

Taipower's main GHG emission sources are the thermal power generating processes, coal storage, transportation vehicles and other fuel-consuming equipments, insulation

fluids used in switchgears and refrigeration and air conditioning equipment. Based on the 2007 GHG survey result, Taipower emitted 83.956 million tons carbon dioxide equivalent of GHGs, of which 99.3% are from the thermal power generation process.

2007 GHG emissions from Taipower thermal power plants

Type of power generation	Emissions (kilo-tons CO ₂ e)	Ratio (%)	Emission intensity (Kg CO ₂ e/KWh)
Oil-fired	8,743	10.5	0.771
Gas-fired	12,398	14.9	0.431
Coal-fired	62,238	74.6	0.932

In order to improve the transparency and credibility of reported GHG data, third party certification organizations were commissioned by Taipower starting 2007 to conduct validation audit of each unit's reported GHG emissions, and we will continue to do so in the future.

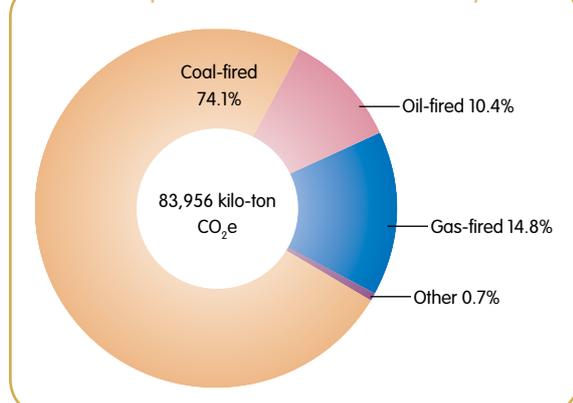
Taipower business units with ISO 14064-1 certification

Thermal power plants	Shenao, Hsienho, Linkou, Taton, Tunghsiao, Hsinta, Nanpu, Talin, Chienshan
Nuclear power plants	1 st Nuclear Plant, 2 nd Nuclear Plant, 3 rd Nuclear Plant
Hydro power plants	Takuan, Mingtan
Business branches	Kinmen
Total	16 units

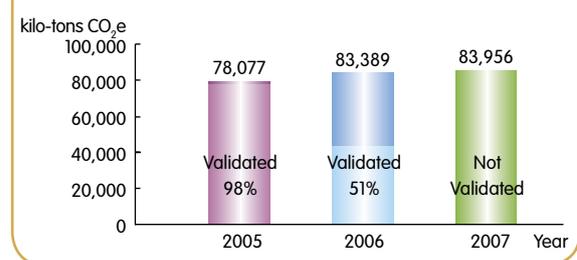
2007 Taipower GHG emissions

GHG	Emission (kilo-tons)
CO ₂	83,267
CH ₄	189
N ₂ O	318
SF ₆	177
HFCs	5
PFCs	-
Total	83,956

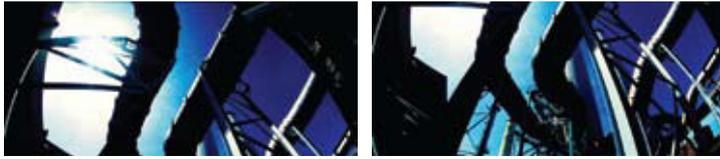
2007 Taipower GHG emissions (by fuel)



Validation status of Taipower GHG emissions



Starting 2006, Taipower has been participating in Bureau of Energy's Voluntary GHG Reduction for Energy Industry Project, and has achieved significant GHG reduction. For example, the Tunghsiao, Taichung and Hsintao power plants all had their emissions validated by independent certification organization in accordance with the requirements of ISO 14064-2, and are expected to be able to reduce 855 kilo-tons of CO₂ emission in 7 years of operations.



Taipower's participation in voluntary GHG reduction for energy industry project

Participating Unit	Participating Year	Validated Year	Validation Organization	Validated emissions (tons-CO ₂ e)
Tunghsiao Plant	2006	2007	DNV	30,209
Taichung Plant	2006	2007	BSI	-
Hsinta Plant	2006	2007	BSI	-
Talin Plant	2007	2008		-
Hsiehho Plant	2007	2008		-
Department of Generation (Wind power and Gas-fired power project)	2007	2008		



GreenHouse Gas Verification Statement for Tunghsiao Power Plant's participation in Voluntary GHG Reduction.

Taipower's Perspectives On GHG Reduction

In addition to establishing GHG reduction strategy, we plead the government and the public to also consider the following points of view:

- Review energy policy: Many governments are already pondering reopening of nuclear power projects to cope with global warming. In order to follow the government's Nuclear-Free Homeland policy, we have already reduced the share of nuclear power generation gradually in recent years, and this move has resulted in our inability to effectively reduce GHG emissions and emission intensity.
- Power generation from renewable energy sources is insufficient and unstable: Due to the geographical and weather limitations, renewable energy is unable to serve as stable power supply, and the limited supply make renewable energy only suitable for use as supplementary energy sources in Taiwan.
- Increased use of natural gas will increase electricity costs: Globally there is only limited reserve of natural gas, and the gas import price has been on the rise, which makes it unsuitable to reduce CO₂ emissions through increased use of natural gas-fired power generation.
- Coal-fired power generation is unavoidable in order to meet economic development need: Coal-fired power plants will certainly emit more carbon dioxide. But with limited indigenous energy resource and the need to diversify

Taiwan's energy supply, maintaining a balanced share of coal-fired power generation will help to meet the power demand of future economic development.

- Electricity rate should reflect cost: In order to achieve sustainable development of the power sector and our operations, and to utilize the resource effectively, the energy costs need to be rationalized. If the electricity rate can not be used as the tool to limit growth in electricity demand, the domestic energy structure will be seriously distorted and energy utilization efficiency greatly reduced.
- Regulate the power sector emissions through CO₂ emission intensity: The power supply needs to meet the practical power demand. As Taiwan's economy and electricity demand will continue to grow, it is not reasonable to regulate the power sector's total carbon dioxide emissions. On the supply side, the power sector should try to reduce the emission intensity, while on the demand side, electricity consumption should be reduced in order to achieve the goal for absolute reduction in GHG emissions.

Conclusion

The future will definitely be the era for low-carbon economy. With the need for GHG reduction, Taipower will uphold the spirit of being an environmentally conscious corporation while taking into account the domestic eco-

conomic development need and living quality of the Taiwanese people, and make the most appropriate decisions and efforts in order to preserve the environment for our future generations. We also implore the government to consider the industrial structure, diversification of ener-

gy sources and development of international trend, and regulate the emissions of GHG and energy utilization efficiency. Finally, Taipower appeal the citizens to take real actions on energy conservation efforts in order to create a congenial society.

CO₂ Capture And Storage

Based on the UNFCCC recommendations, the present CO₂ emission crisis may be resolved through three approaches.

- Reduce CO₂ emissions through improvements in energy efficiency and increased energy conservation efforts.
- Develop low-carbon or no-carbon energy to replace existing energy sources.
- Capture and store emitted CO₂ in order to reserve enough time for the human beings in searching for the final solution to CO₂ crisis.

The design of our existing thermal power plants allowed them to be retrofitted with post-combustion CO₂ capturing facility. That is, in the future these plants may be capable of separating the low concentration CO₂ from the flue gas using suitable separation technology and then storing the captured CO₂ in suitable underground sites.

Besides conducting research on low-cost CO₂ separation technologies, Taipower is also closely watching the international development so that when the CO₂ separation technologies are mature and suitable domestic storage sites can be located, such technologies can be introduced to Taiwan.

Other GHG Mitigation Results

Current generation power transforming and switching equipment needs to meet the requirements of small footprint, operator safety, maintenance ease, low noise and neat shape, in addition to providing the basic needs of safety and reliability. In order to address environmental concerns on insulation fluids, Taipower have widely adopted the SF₆ gas-insulated switchgear (GIS) equipment. However, there is a need for refilling of some SF₆ when leakage occurs or during equipment maintenance. As SF₆ is a highly potent GHG, Taipower has adopted the following measure to address this issue:

- Inventory of total SF₆ usage and refilling amount
 - (1) A total of 8,175 SF₆ GIS are in use by Taipower.
 - (2) 828,433.0 kg of SF₆ are currently being use.
 - (3) During July-December 2007, 27,281.7 kg of SF₆ have been added to existing equipments or for equipment expansion.
 - (4) During July-December 2007, 677.6 kg of SF₆ have been added to existing equipments during maintenance to counter leakage.
- Means to reduce SF₆ leakage

- (1) Conduct SF₆ testing with leakage detection meter periodically.
- (2) Prior to conducting maintenance service on GIS equipment, pump SF₆ into storage tank with recovery vehicle first. Before opening the switchgear cover for maintenance, make sure no leakage of SF₆ will occur.
- (3) If SF₆ leakage is found to have exceeded designated amount during inspection, the electricity transmission to the equipment should be cut immediately for repair.

- Recycle and reuse
Prior to conducting maintenance service on GIS equipment, the SF₆ recovery vehicle should be used to pump SF₆ from the GIS into storage tank and reduce the internal GIS pressure to vacuum. After the completion of maintenance, SF₆ is pumped back into the GIS again.
- SF₆ detection
During inspection or after maintenance service, if the maintenance provider discovers that leakage of SF₆ exceeds regulation, SF₆ leak detection meter should be used immediately to detect if SF₆ is leaking.

Nuclear Power

Taipower currently has three nuclear power plants (with 6 generating units in total) in operation. The first and the second nuclear power plants are located in the northern coastal areas of Taiwan, while the third plant is located near the southern tip of Taiwan.

In 2007, the six nuclear power units generated 38.961 billion KWh of electricity, which is 19.30% of Taipower's total generated and purchased electricity. Due to the lower cost of nuclear fuel, these nuclear power units have been used as base-load units by Taipower. In recent years, Taipower has also been actively enhancing nuclear safety mana-

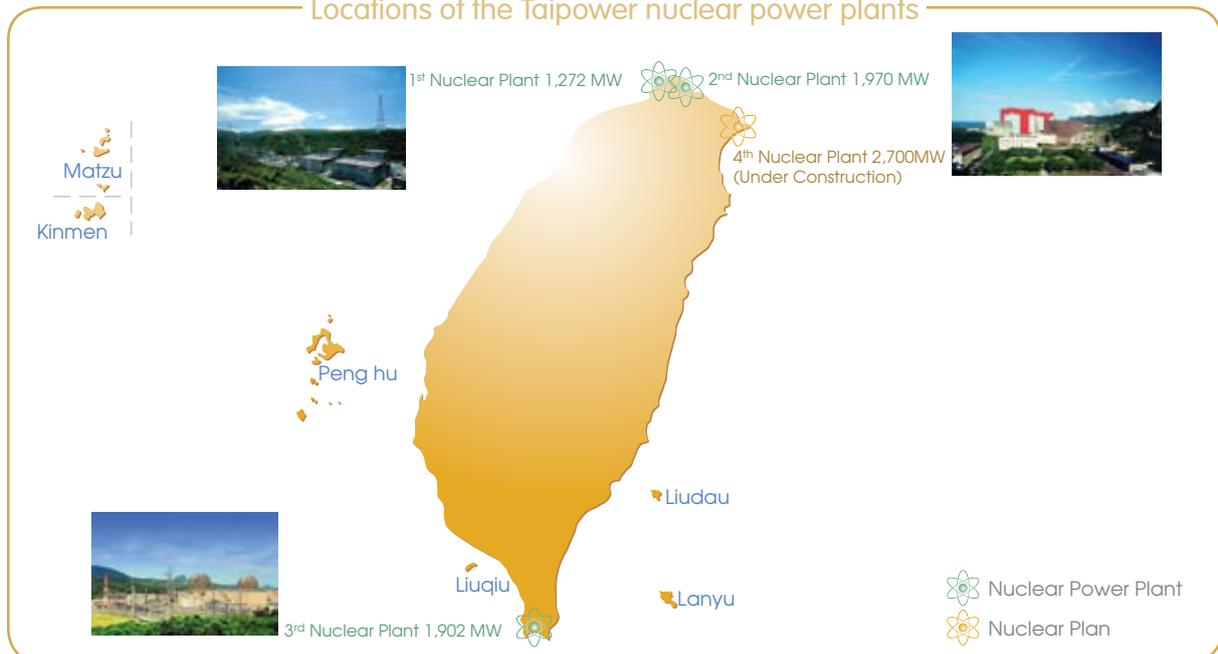
gement and implementing advanced nuclear operation technology, so that these nuclear units have performed outstandingly.

Since the commercial operation of the first unit of the First Nuclear Power Plant on December 10, 1978, the 6 nuclear power units have provided a total of 856.6 billion KWh electricity (or 892.2 billion KWh in gross electricity generation) till the end of 2007, which is close to 30% of the total electricity supply for Taiwan in the last 30 years, and have made great contribution to the recent economic development in Taiwan.

Overview of Taipower's operating nuclear power plants

Site	1 st Nuclear plant	2 nd Nuclear plant	3 rd Nuclear plant	Total
Major equipment manufacturer	Taipei County, Shihmen Township Boiling water reactor: General Electric Generator: Westing House	Taipei County, Wanli Township Boiling water reactor: General Electric Generator: Westing House	Pingtung County, Hengchun Township Pressurized water reactor: Westing House Generator: General Electric	
Installed capacity	636,000 KWh x 2	985,000 KWh x 2	951,000 KWh x 2	5,144,000 KWh
Construction commencement	#1 1972.02.01 #2 1973.08.13	#1 1975.08.01 #2 1975.10.22	#1 1978.05.21 #2 1978.11.21	
Average annual electricity generation (1999-2007)(billion KWh/year)	9.399	14.112	13.933	37.444
Annual fuel consumption (uranium, tons)	26	40	34	100
Initial Tie-in Date	#1 1977.11.16 #2 1978.12.19	#1 1981.05.21 #2 1982.06.29	#1 1984.05.09 #2 1985.02.25	
Commercial operation	#1 1978.12.10 #2 1979.07.15	#1 1981.12.28 #2 1983.03.16	#1 1984.07.27 #2 1985.05.18	
Accumulated electricity generation (Initial Tie-in Date-2007.12.31) (billion KWh)	251.928/ 240.393	340.912/ 329.738	299.373/ 286.460	892.213/ 856.591

Locations of the Taipower nuclear power plants



☛ Increase Share Of Natural Gas-Fired Electricity Generation

After the taking effect of Kyoto Protocol, reducing GHG emissions from thermal power plants have become a critical issue that needs to be addressed by the power sector. One of the most important conclusions from Taiwan's 2005 National Energy Conference is to expand the natural gas-fired electricity generation, and Taipower has been the major entity charged with this mission. In the 2007 Taipower Long Range Power Development Program, Taipower

planned to maintain the annual consumption of 6 million tons of nature gas during the 2010-2015 period, then the new natural gas-fired electricity generating units will gradually be added starting 2016 to achieve the government mandated increased use of natural gas by the power sector. Based on this plan, the ratio of natural gas fired electricity generation to total electricity generation may be increased from 21.4% in 2007 to 27.5% in 2018.

Development Of Renewable Energy

The arrival of high oil price era stimulates the rush toward development of green or renewable energy. Due

to its poor indigenous energy reserve, Taiwan relies on imported energy for over 99% of the energy demand.

Overview of Taipower's renewable energy development

	Current status	Future outlook
Small hydro	<ul style="list-style-type: none"> Replacement of Kao-Ping hydropower plant Chumen branch. Replacement of Mingtan hydropower plant Choshui branch. Establishment of Bihai hydro powerplant at the mid-stream of Hopingnan river. Rehabilitation of Tachiachi hydropower plant Kukuan branch. (Commercial operation in 2008) Wanda hydropower plant Extension (1 unit) and Sunglin branch (2 unit). 	<ul style="list-style-type: none"> Rehabilitation of Tachiachi hydropower plant Chingshan branch. Promote Shibao hydro power project. Replacement of Mingtan hydropower plant Choshui branch.
Wind power	<ul style="list-style-type: none"> Installed 8 generating units at Chungtuan, Penghu, during 2001~2005, total installed capacity 4.8 MW. Implemented the First-phase Wind Power Project at Shihermen, Hengchun, Datan, Guanyuan, Taichung, Hsiangshan, and Taichung Port in 2003; 60 units with a total installed capacity of 98.96 MW. Implemented the Second-phase Wind Power Project in at Changhua Industrial District, Mailiao, Linkou, and Sihhu 2005; 58 units with a total installed capacity of 116 MW. Implemented the Third-phase Wind Power Project in 2007; 28 units with a total installed capacity of 56 MW. Taipower planned to install 8 generating units at Peng-hu and Kinmen at Changhua Industrial District (III), Wanggong, Mailiao (II), and Datan (II) in 2006 and 2007; the total capacity of instrument is 9.1MW. 82 units in operation in 2007 with a total installed capacity of 131.76 MW. 	<ul style="list-style-type: none"> After completion of the Third-phase Project, there will be a total of 162 wind turbine with a total installed capacity of 285MW in operation by the end of 2011. At present Taipower is carrying out the feasibility study of the Fourth-phase Wind Power Project and Changhua Offshore Wind Power Project.
Solar photovoltaic	<ul style="list-style-type: none"> Taipower starts gathering sunshine and meteorological data at Hengchuan and Penghu in 1993 and 1999 respectively to prepare for feasibility study of plant construction at a later date. Taipower has completed 8 Demonstration Solar Power systems by the end of 2007. 	<ul style="list-style-type: none"> Taipower's goal is to have solar photovoltaic installed capacity of 10 MWh by 2011, and annual electricity generation of 12 GWh.
Geothermal	<ul style="list-style-type: none"> There are close to 100 hot spring areas in Taiwan showing the sign of geothermal heat potential, but only 26 places with theoretical reserve of 1,000MW have development potential. 	<ul style="list-style-type: none"> In support of the development plan of Yilan Government, Taipower provided geothermal generating units free of charge and rendered assistance to its Ching-Shui Geothermal Power Project.
Biomass	<ul style="list-style-type: none"> Taiwan has two kinds of biofuel, i.e. refuse incineration and biogas. The total installed capacity of generating units at Neihu Incineration Plant and other incineration plants is 547.6 MW. Kaohsiung Lida Livestock Co. has established an excretion treatment system for 200 hogs and uses the biogas generated for burning and power generation. The biogas power generation systems of landfills in Taipei (Shangzhu-ku, Fudekang), Taichung (Wen Shan), and Kaohsiung (Shi Ching Fu) with total installed capacity of 21.8 MW have tied in to the Taipower system. 	<ul style="list-style-type: none"> Taipower has committed to purchase more bio-fuel power plants.
Marine energy	<ul style="list-style-type: none"> The potential electrical capacity ocean power produced with tidal, current, waves and temperature difference power generation techniques is 44,000 MW. About 200 MW can be utilized. In 2007 Taipower started the feasibility and preliminary design of temperature difference power generation plant. 	<ul style="list-style-type: none"> If the temperature difference power generation is feasible, Taipower is going to cooperate with the Water Resource Agency with the Deep Seawater Low Temperature Utilization, Research and Development Project in 2010.

Thus the key to Taiwan's success in future GHG reductions will be in developing and increasing domestic renewable energy supply and decreasing reliance on imported energy.

In accordance with the planning of Bureau of Energy, in 2025 14.9% of the total installed capacity in Taiwan will be from renewable energy. To achieve this goal, an additional 8,450 MW of install capacity in renewable energy will need to be added.

As a government-enterprise, Taipower has been

following the government's Renewable Energy Development Policy and initiated the development and assessment of various forms of renewable energy, including small hydro, wind power, solar photovoltaic, ocean thermal gradient and wave energy in recent years to assess the feasibility of further development. Taipower's installed capacity of renewable energy(including conventional hydro power) at the end of 2007 amounted to 2,103 MW, accounting for 5.5% of system capacity; its net peaking capability totaled 1,230MW, accounting for 3.2% of net peaking capability of the system.

Small Hydro Power Plants

Hydro power projects have the advantages of mitigating floods and providing irrigation and drinking water, however, they can also create certain environmental and social impacts. Therefore, the new trend for hydro power projects in developed countries is the more environmentally friendly un-dammed small to medium scaled hydro power plants. In the Renewable Energy Development Bill currently under consideration

by the Legislative Yuan, the conventional hydro power project has been listed as one of the renewable energy forms.

Taiwan has well over 100 years of experience in hydro power generation. However, due to the topographical, geologic, and hydrological limitations, there are very few good sites for hydro power generation and most of them are already developed. In the future, Taipower will use the small to medium hydro power form for its new hydro power development projects.

For the existing hydro power plants, only the Takuan II and Mingtan plants are of the pumped storage type. Together both plants have a total installed capacity of 2,600 MW which is 6.8% of the total system capacity. In addition, there are 39 other conventional hydro power plants with a total installed capacity of 1,921 MW, which is 5.0% of system capacity (as of the end of 2007).



Wind Power

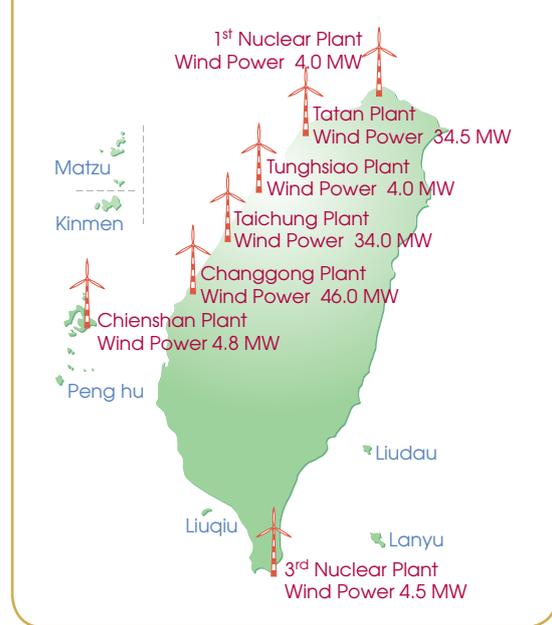
As a Pacific island country, Taiwan is under the influence of the northeast monsoon for about 6 months a year, with an average wind speed of over 4 m/sec in areas near the coast, off the shore or in remote islands, which is suitable for wind power development. It is estimated that over 2,500 MW in wind power generating capacity may be developed in Taiwan, which certainly makes wind power the first choice for renewable energy projects in Taiwan.

In recent years, as the costs for wind power generation have come down significantly, Taipower developed the Ten-Year Wind Power Development Program in 2002. The goal of the program is to install 200 wind power generating units in 10 years and increased the total wind power installed capacity to 300 MW.

By the end of 2007, there are a total of 135 wind power units in operation, including 6 units for private electricity supply (4 Formosa Plastics units and 2 TenLong units) and 129 commercial units (82 for Taipower and 47 for Infra Vest corporation). The commercial units have generated a total of 811 GWh electricity by the end of 2007.

With the high-rising consumer environmental awareness and high oil price, in addition to the pressure from the Kyoto Protocol, the reduction of CO₂ emissions and adoption of clean energy is a new trend for global enterprises. Despite the topographical and social limitations

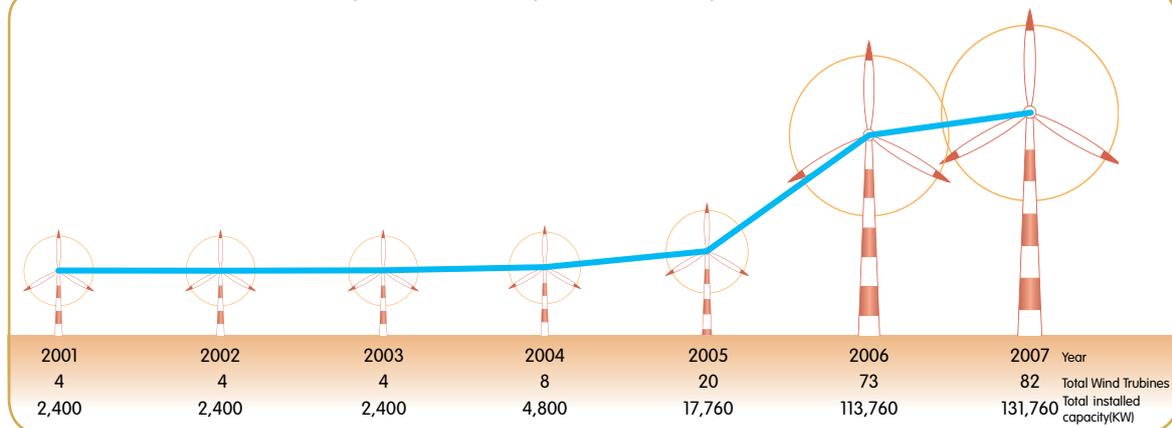
Locations and electricity generation for wind power generating units in taiwan



to the development of wind power, Taipower and the independent power producers will strive to achieve the government's renewable energy development goal.



Taipower's wind power development trend



Solar Photovoltaic Power

Even though Taiwan has a sub-tropical climate, the weather conditions, insufficient sunshine and frequent typhoons, in addition to the high cost of photovoltaic investment have all severely limited the development of solar photovoltaic power generation in Taiwan.

However, in recent years the global photovoltaic industry has been growing at an annual rate of about 30% due to the strong promotion of solar photovoltaic power in developed countries. As Taiwan has a well developed semiconductor and electronics industry, it can be expected that photovoltaic power industry will be of great growth potential as a form of renewable energy in Taiwan.

In line with this international trend, Taipower has in-

Fall in love with the sunshine

Located in Hengchun, Pingtung County, the Taipower Silicon Garden is Taiwan's first solar photovoltaic power demonstration structure. The structure is formed by 196 Polycrystalline silicon panels and 200 monocrystalline silicon panels solar modules in the shape symbolizing the silicon wafer of the monocrystalline industry. This structure has an installed peak capacity of 50 kWp.



stalled 202 kWp peak photovoltaic power generating capacity in Taiwan. These units are located at General Research Center Shulin Branch, Taipei City Operation Center, Talin Power Plant, Nanto Branch, Kaohsiung Training Center, Kinmen Branch, Southern Demonstrates Hall, and Taichung Power Plant.

Taipower also plans to invest 3.57 billion NT dollars in additional funding to complete the Solar Photovoltaic Power Generation Program (Phase I), and is expected to install 10,000 kWp capacity in 2011, capable of generating 12 million kWp electricity and reducing 8,375-12,325 tons of carbon dioxide emissions per annum.

While there is great potential for solar photovoltaic power generation, the difference in local sunshine hours and solar intensity will result in different electricity generation even for the same solar panel areas. On average, the normalized cost (in unit of NT dollars/KWh) for solar photovoltaic power generation is from 17 to 25 NT dollars for units located in Taipei, Nantou and Kaohsiung respectively.

Establishment Of Solar Photovoltaic Power Plant

Taipower plans to invest over 1 billion NT dollars in constructing a solar photovoltaic power plant at a 131 hectare salt flat site near the Hsinta Power Plant in southern Taiwan. Once completed, this plant will generate up to 4,260 kWp electricity per hour, which will make it the world's second largest solar photovoltaic power plant (only next to a plant in Japan). The first phase of this project will involve 9 hectare of land which includes a site designated by local government as a historical site.

Overview of Taipower solar photovoltaic demonstration project

Location	Commercial operation starting date	Installed capacity	Type of module
General Research Center Shulin Branch	2002.01	20kWp	Monocrystalline silicon + Polycrystalline silicon
Taipei City Operation Center	2002.10	20kWp	Polycrystalline silicon
Nanto Branch	2003.11	10kWp	Monocrystalline silicon
Talin Power Plant	2003.08	10kWp	Polycrystalline silicon
Kaohsiung Training Center	2005.10	10kWp	Polycrystalline silicon
Kinmen Branch	2004.06	10kWp	Monocrystalline silicon
Southern Demonstrates	2006.09	50kWp	Monocrystalline silicon + Polycrystalline silicon
Taichung Power Plant	2008.02	72kWp	Polycrystalline silicon
Huanlien and Taifeng branches	2008.12(Planned)	31.5kWp	Polycrystalline silicon

Taipower's purchases of renewable energy generated electricity

	Independent power producer	Energy form	Installed capacity(MW)	Total(MW)
With purchase contract	Infra Vest/ Chunan Wind Turbines	Wind	7.80(4)	269.93
	Chianan/ Hikou Hydro Power	Small hydro*	11.50	
	Chianan/Wushanto Hydro Power	Small hydro	8.75	
	Judan/ Peinan Hydro Power	Small hydro	1.98	
	Minjian Hydro Power	Small hydro	16.70	
	Infra West/ Tapeng Wind Turbines	Wind	42.00(21)	
	Reusable Energy Company	Biofuel(Grain)	4.00	
	Chungwei/Taichung Wind Turbines	Wind	34.50(15)	
	Luwe/ Lugang Wind Turbines	Wind	48.30(21)	
	Luwe/ Changbin Wind Turbines	Wind	55.20(24)	
	Tangjin co.	Small hydro	2.70	
	Chuwei/ Jhubei Wind Turbines	Wind	11.50(5)	
	Tie-in application	Kouhseng	Biofuel(RDF**)	
14 Wind power companies		Wind	784.00(993.00)	
1 biofuel		Biofuel(RDF)	45.00	
Total			1,098.93(12,99.18)**3	

*Notes: 1. Small hydro denotes projects with installed capacity less than 20 MW.
2. RDF means Refuse Derived Fuel.
3. Numbers in parentheses are due to flexible capacity application for wind power.

Adoption Of New Environmental-Friendly Technologies

Taipower's existing thermal power units are operated at an average net efficiency of about 36% (HHV Net). In order to increase the generation efficiency, Taipower plans to use more advanced power generation units which can operate at supercritical-steam* condition and generate in high efficiency.

The supercritical-steam generation units currently under planning for new coal-fired power plant by Taipower are

designed to have an efficiency of about 40% (HHV, Net), which is 3-4% higher than that of existing conventional units. This type of power units can also be characterized with operational reliability, load-following, economic effectiveness, and energy conversion efficiency.

*Note: When water is heated to a state of more than 374.15°C in temperature and over 22.1MPa in pressure, the steam generated is characterized with same density as water, which is also called supercritical point of water.

Rebuild of Shenao Thermal Power Plant expected to be complete in 2013

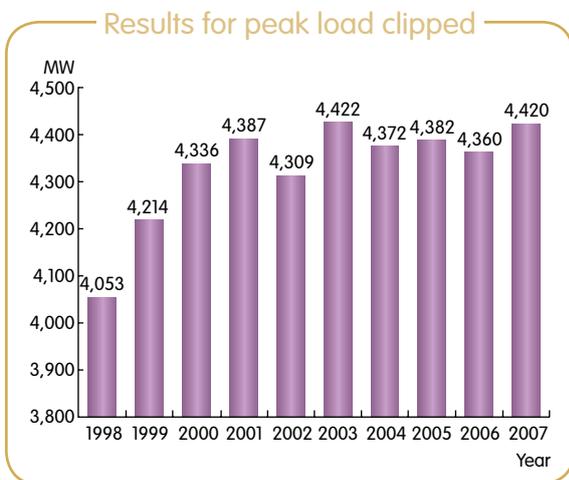
After operation of more than half a century, the 3 units of the Shenao Thermal Power Plant were decommissioned on October, 2007. The Shenao plant, installed with 3 coal-fired power units totaling 400 MW in capacity, is located at Rueifang of Taipei County. Since the commercial operation of the power plant in 1960, the three units have produced over 112 billion KWh of electricity and played a very important role in support of Taiwan's economic development.

As Shenao plant's three units were getting aged, Taipower decided to decommission these units, and to replace them with two 800 MW supercritical steam power units for an estimated cost of 100 billion NT dollars based the consideration of the need to meet the increasing long-term power demand, fill up the base load capacity, and help achieve the power supply-demand balance in the northern part of Taiwan. To meet the high environmental protection standard, the projected power units will be equipped with state-of-the-art high-efficiency air pollution control facilities, including flue gas desulfurization (FGD), selective catalytic reduction (SCR), and electrostatic precipitation(ESP).

In addition, Taipower also entrusted specialists to conduct a comprehensive planning for beautification of power plant buildings and its landscaping, the results of which are to be incorporated into the project's implementation. After the completion of the project in 2013, Shenao Power Plant is expected to be operated at high operational efficiency, thus significantly reducing air pollutant emissions and in harmony with scenic surroundings of the Northern Coastal Highway and Marine Science Museum, making the power plant a new tourist attraction.

Implementation Of Load Management

In order to balance the system load, to utilize existing generators effectively, and to alleviate the pressure to develop new power sources, Taipower has been implementing load management measures since 1979. For over 20 years, measures such as time-of-use rate, load reduction program(interruptible rate), seasonal rate, preferential rate for ice storage central air conditioning system, duty cycling control of central air conditioning and package air conditioner have all been implemented. Due to these efforts, Taipower had successfully clipped summer peak load by 4,420 MW in 2007 which benefited the balance of system load greatly.



● Time-Of-Use (TOU) Electricity Rate

In order to reflect the different costs of electricity generation during different time of the day, Taipower has been implementing the time-of-use (TOU) rate scheme since 1979. In conjunction with the government-regulated electricity rate adjustment over the years, Taipower has gradually enlarged the electricity rate difference between peak and off-peak time, encouraging the customers to make better use of off-peak electricity and thus clipping the peak load. In 2007, 72,153 customers had chosen the TOU rate in which the capacity of 966 MW of Saturday partial-peak period contracted demand and off-peak period contracted demand were signed. These effectively clipped the peak load by 3,194 MW.

● Seasonal Rate

Seasonal rate is a rate scheme that offers different seasonal electricity rates to reflect the different costs of electricity generation during different seasons. The main purpose of introducing the seasonal rate is to reduce the peak summer demand and accordingly reduce the electricity supply costs. In 2007, over 11.985 million customers applied for the seasonal rate and the average load was clipped by 287 MW.

● Load Reduction Program(Interruptible Rate)

Since 1987, Taipower has been encouraging customers to reduce peak-hour electricity demand through shifting the demand to off-peak hours (such as through shifting automatic manufacturing processes to off-peak hours), thus reducing the peak-hour demand and system peak load. In July 2007 (peak month), 1,010 customers chose to participate in this measure and applied for 2,046 MW contracted reduction load. During the peak day (July 23, 2007), the peak load was clipped by 1,226 MW.

● Ice Storage Central Air Conditioning System

Taipower also encourages customers to install ice storage central air conditioning system which can make use of off-peak electricity to store ice in the system and thus reduce the peak system demand. The electricity consumption during the off-peak hours receives 25% off the regular rate. As of 2007, 291 customers installed the ice storage central air conditioning system with a total capacity of 213 thousand horsepower.

● Duty Cycling Control Of Central Air Conditioning And Package Air Conditioner

Taipower also provides discount rate to encourage customers to apply for duty cycling control of central air conditioning and package air conditioner, so as to reduce the air conditioning electricity demand during summer months. In 2007, 97 customers, with a total capacity of 22 thousand refrigeration tons, participated in this measure.

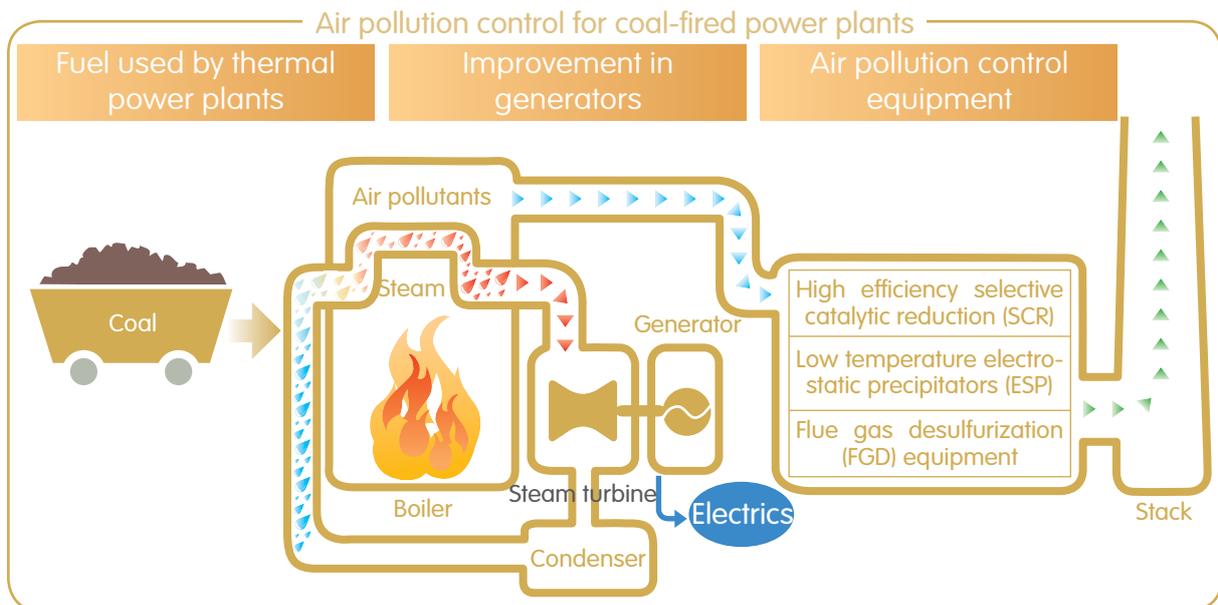
Improve Environmental Efficiency

Air Pollution Control

As the Taiwan citizens increasing demand better air quality, Taipower has adopted a series of air pollution control measures. Besides installing air quality monitoring systems around the thermal power plants, Taipower has also installed higher efficiency generators and advanced air pollution control facilities, when the space, technology and economic conditions permit, so as to minimize the emissions of air pollutants.

- Air quality monitoring systems for the power plants

Since 1988, Taipower has installed continuous flue gas monitors in the thermal power plants' flue gas stacks. The purpose for these monitoring systems is to monitor the pollutant concentrations in the flue gas, and provide information to the pollution control facilities to operate at the optimal conditions, in order to minimize the pollutants discharged from the flue gas.

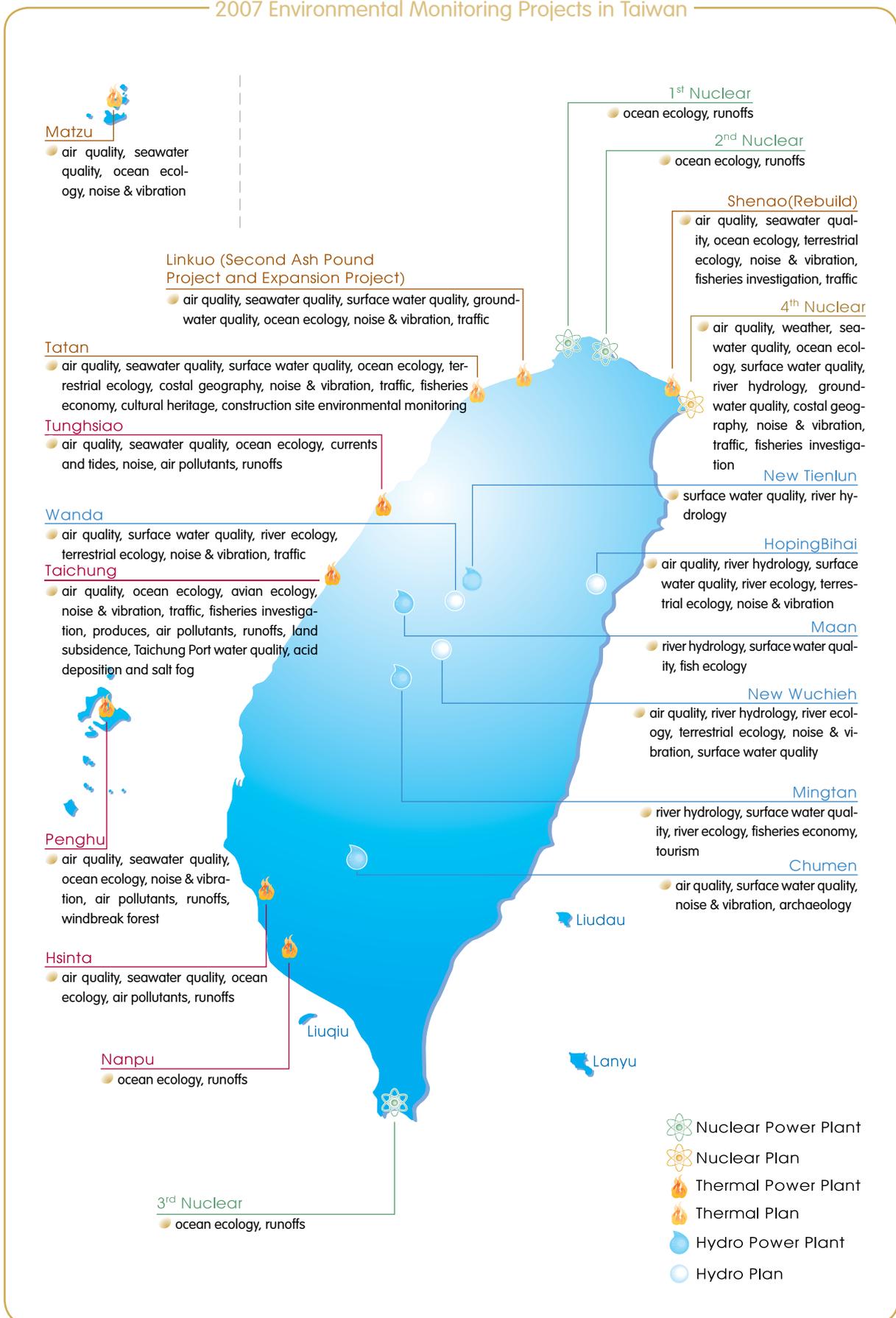


Air quality indicators surrounding thermal power plants in 2007

Power Plant	No. of monitoring stations	SO ₂ (ppb)	NO ₂ (ppb)	PM ₁₀ (µg/m ³)
Shenao	4	3.6~5.7	6.8~10.1	46.1~66.8
Hsiehho	3	4.9~6.7	9.6~14.4	35.3~62.7
Linkou	8	3.7~7.9	11.2~15.9	60.3~91.3
Tunghsiao	8	3.9~11.0	11.1~15.0	51.9~93.1
Taichung	11	4.6~7.6	12.5~21.6	50.7~81.4
Hsinta	6	4.1~7.2	16.9~20.3	75.8~80.2
Nanpu	3	7.3~8.5	27.0~28.4	71.6~72.9
Talin	6	8.1~11.9	20.4~27.6	74.3~83.8
Chienshan	3	2.7~4.9	3.2~4.9	38.0~51.8
Air quality standards		30	50	65

Note: The tabled values are annual average values from the plants' air quality monitoring stations.

2007 Environmental Monitoring Projects in Taiwan



● Reduction Of Sulfur Dioxide Emissions

In order to reduce the amount of sulfur dioxide in the flue gas of thermal power plants, Taipower has increased consumption of sulfur-free natural gas. In addition, coal-fired and oil-fired power plants have all ado-

pted low sulfur fuels. If space is available on-site, flue gas desulfurization (FGD) units are installed which can remove over 90% of sulfur dioxide from the flue gas.

Reduction in SOx emissions

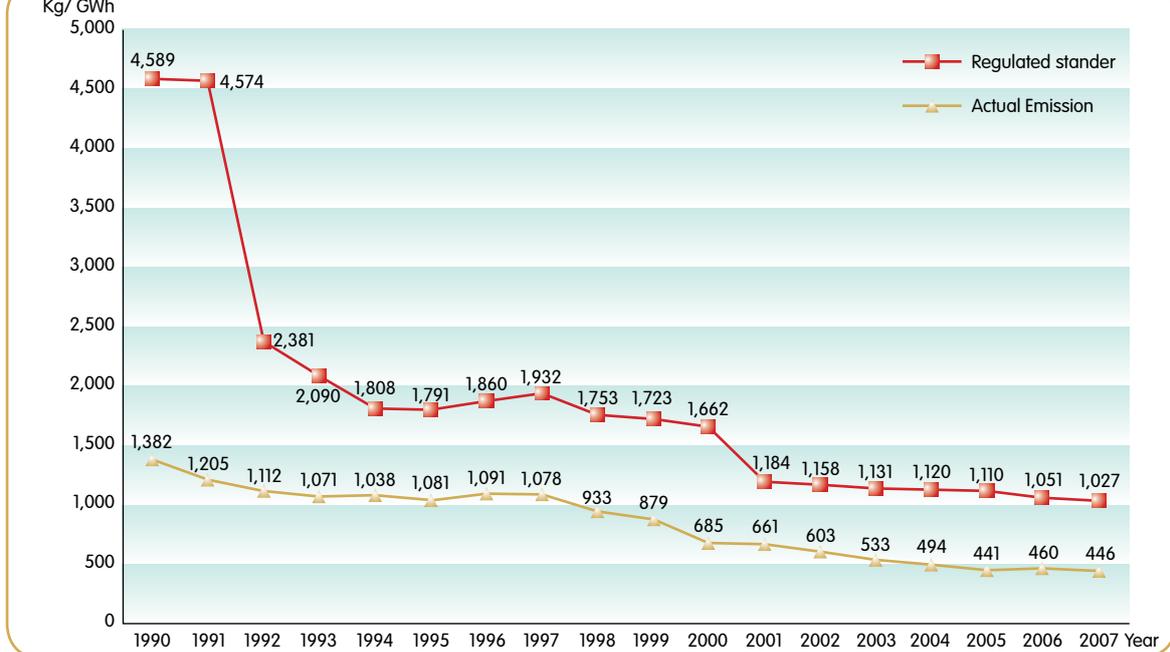


● Reduction Of Nitrogen Oxides Emissions

Taipower has already installed advanced low-NOx burners on all new and existing electricity generating units, in order to reduce the NOx emissions from the source. In addition, ad-

vanced NOx removal units are also installed on all new generating units and existing units (if space is available) which can effectively reduce considerable amount of NOx emissions.

Reductions in NOx emissions



● Reduction Of Particulate Matter

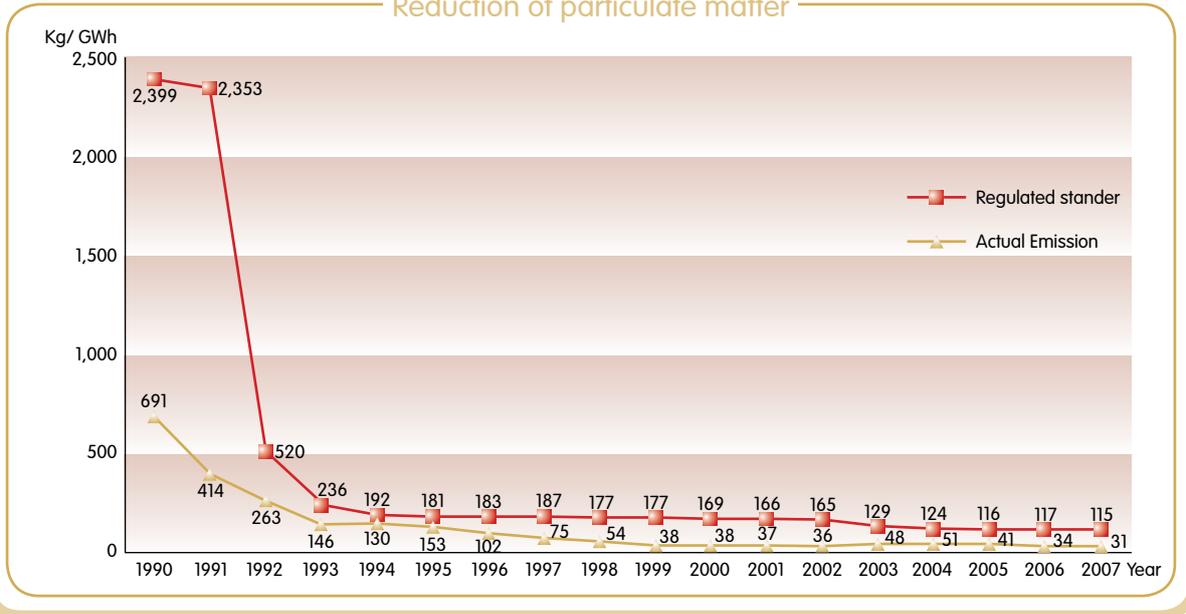
Thermal power plants generate two different kinds of particulate matter, one from the thermal combustion process and the other from the coal storage area, each requires a different treatment approach.

- Thermal power plants: Steam generating units are all equipped with high efficiency electrostatic precipitators (ESP) which are capable of removing 90-99.8% of particulate matter. In addition, oil-fired units are also equipped with oil ash incinerators to incinerate the collected oil ash. Besides, the flue gas desulfurization (FGD) equipment installed on coal-fired units to remove the sulfur dioxide is also capable of removing some particulate matter.
- Coal storage field: Taipower has spent 1 billion NT dollars to build a wind-shielding fence around the

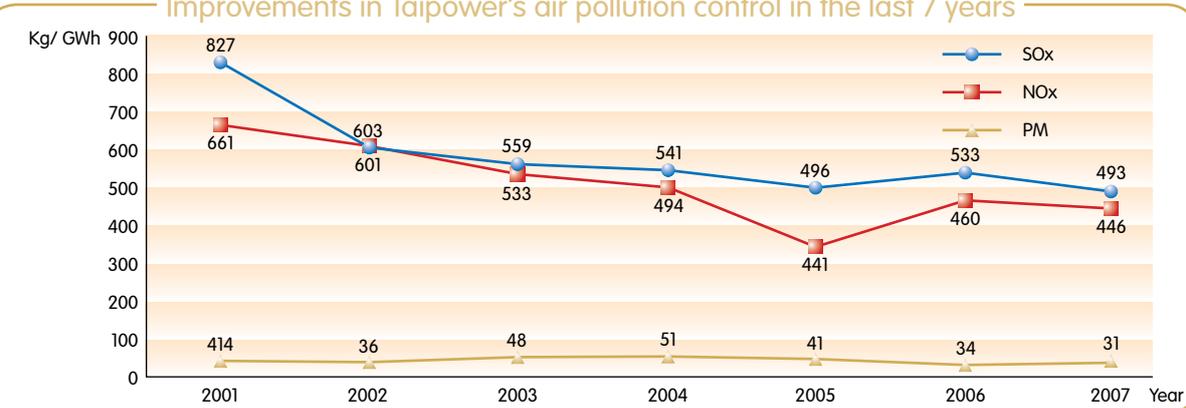
coal storage field, and installed a sprinkler system to prevent coal dust from contaminating the surrounding area. Moreover, an indoor coal storage warehouse was built in the Hsintao Power Plant to reduce the amount of coal stored outdoors. Transportation and unloading of coal is also conducted in closed environment with coal heap compacted and roads cleaned. For long term storage of coal, chemical is used to stabilize the coal surface, and trees were planted around the field to prevent spreading of coal dust.

In the future, the Shinta coal-fired power plant won't be using the outdoor coal storage field. It will use indoor storage silo and enclosed carrying belt to reduce the generation of coal dusts.

Reduction of particulate matter



Improvements in Taipower's air pollution control in the last 7 years



Rain Water Collection And Wastewater Reuse

While adhering to the concept of water conservation, Taipower has been actively pursuing the goal of zero wastewater discharge. Rain water collection (peripheral of the site and dormitory) and wastewater (industrial and domestic wastewater) reuse projects are being promoted and integral planning has been imple-

mented to reduce the use of tap water inside the power plants.

Results of wastewater reuse in 2007

Category		Amount(tons)
Industrial wastewater	Recover and reuse	1,954,898
Rain water	Recover and reuse	286,942

Waste Treatment And Resource Reuse

Taipower generates a variety of industrial waste which amounted to about 2.2 million metric tons (after deducting the waste soil) per annum. Therefore, the reduction of waste generation, proper reuse of waste and treatment to render the waste harmless, and thus maintaining the ecological balance has always been the goal for Taipower.

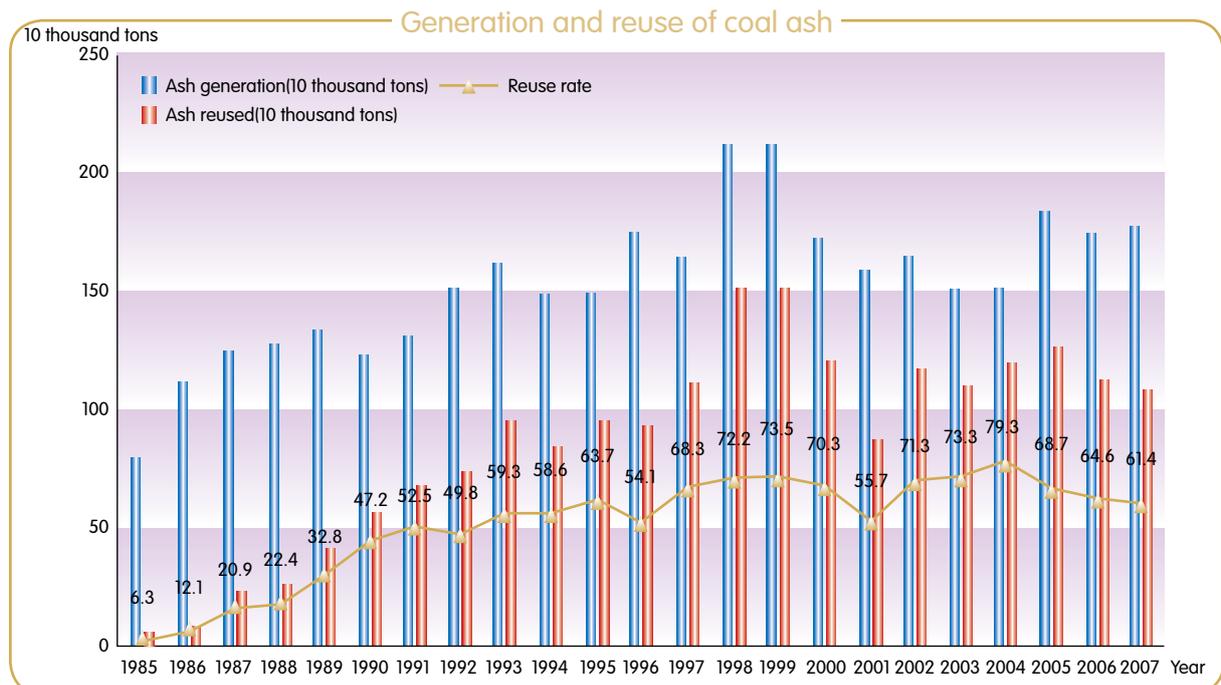
Besides applying advanced waste processing technologies, conducting detailed evaluation during the planning

stage of waste reduction facility, and implemented 4R policy after the establishment of such facility, Taipower has also set up the Waste Reduction Consultation Task Force in 1997, to promote and plan for company-wide industrial waste minimization efforts. Taipower has also emphasized the education and promotion of industrial waste minimization measures, so that every Taipower employee understands the importance of waste minimization and can practice environmental protection actions on a daily basis.

Coal Ash Reuse

The major waste generated during Taipower's thermal power generating process is the coal ash (including fly ash and bottom ash), while fly ash can usually be used as partial substitute for cement by the construction industry. Presently, most of the coal ash generated by our thermal power plants has been reused to reduce the environmen-

tal impacts caused by its generation and disposal. In addition, Taipower is also researching the reuse potential for bottom ash. The result shows that bottom ash may be used as filling material in the ditch repaving projects, and can substitute up to 90% of the aggregate used in such projects.



Other Waste

Other industrial waste such as transformer insulation fluid, waste wires and cables, metal waste and scrap materials, are being recovered and processed by waste disposal contractors contracted by Taipower through open bidding process. In accordance with the Environmental Protection Administration (EPA) regulation, bidding contractors need to be qualified Industrial Waste Processor and be willing to subject to inspection by EPA and local environmental protection bureaus.

In 2007, the following waste materials are being processed by contractors:

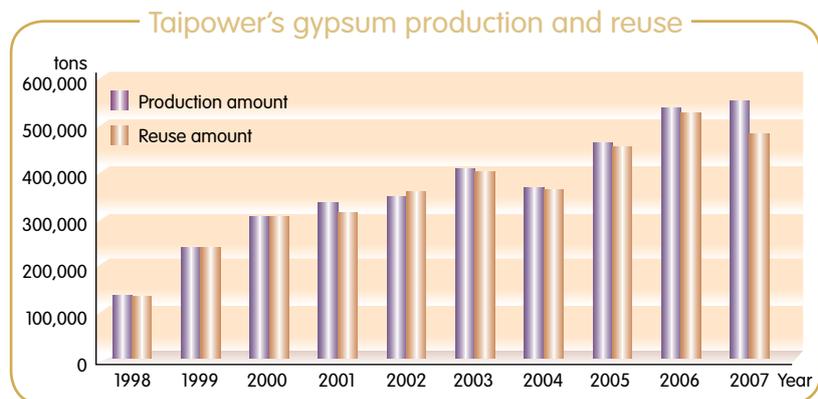
- (1) Capacitors: 1,547 units.
- (2) Wires and cables: 607,671 kg.
- (3) Electricity poles (over 9 m): 21,960 poles.
- (4) Insulation fluid: 182,165 liters.

2007 Waste recovery statistics

Item/Year	Units	2005	2006	2007	Total
Waste cable	Kg	749,277	1,377,994	1,143,838	3,271,109
Waste aluminum conductor steel reinforced	Kg	124,612	134,516	87,200	346,328
Scrap iron	Kg	12,749	26,846	111,936	151,531
Waste prestress concrete pole	Number of poles	22,025	16,350	21,960	60,335

Reuse Of Gypsum Byproduct

During the combustion process in the coal-fired power plant, the sulfur contained in the coal is converted into sulfur oxide, and then emitted with the flue gas. To comply with the requirements in national environmental standards to reduce the emission of sulfur oxides in flue gas, and to improve air quality, Taipower has installed exhaust desulfurization facilities at three major coal-fired power plants, namely Linko, Taichung and Hsinta plants, which use limestone slurry to transform sulfur oxides in flue gas into gypsum. The resulting 500 kilo-tons

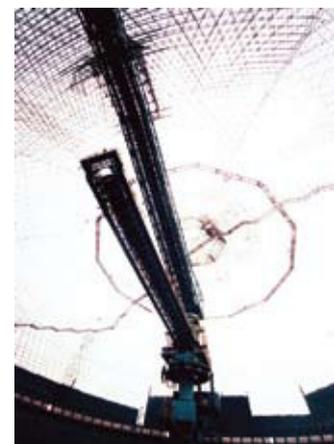


per annum of gypsum by-product produced by Taipower is then sold to local cement makers and fire resistant board makers through open bidding process.

Research On Energy Conservation Technologies

Power producers around the globe are all facing the challenges of increasing energy efficiency, decreasing energy consumption and reducing losses to meet the public's energy demand. In line with this international trend, Taipower's research unit, the Taiwan Power Research Institute started to conduct three studies on "Improvement of Loss Analysis and Performance Evaluation in Taipower Distribution System", "Three Phase Unbalance Improvement of Distribution Feeders by Applying Outage Management System" and "Design and Development of Illegal Electricity Monitoring System for Low Voltage Customers" to achieve the aforementioned goal.

Moreover, Taipower also strives to maintain the generating units at optimal operating conditions, through the strategies of improving generating unit efficiency, installing new and more efficient generating units and apply timely technological improvements.



Results Of Energy Conservation

In addition to conducting research and development on energy conservation technologies, Taipower has also established an internal energy conservation promotion team to promote and implement corporate energy conservation measures, and has achieved significant progress in terms of conservation on electricity, gasoline and water.

Results of energy conservation measures

Year	Electricity consumption in power plants, substations and offices		Gasoline consumption in offices		Water consumption in offices	
	Electricity saved (GWh)	Saving rate (%)	Gasoline saved (1000L)	Saving rate (%)	Water saved (kilo-m ³)	Saving rate (%)
2005	100.9	2.05	101	4.1	179	5.8
2006	104.1	1.54	145	5.4	436	15.0
2007	118.2	1.69	307	11.9	87	3.5

Note: Each year's reduction is compared with the previous year.

Promote Power Conservation Concept And Provide Technical Services

As the global fossil fuel reserves are depleting and humans' energy demands are increasing, it is not difficult to foresee the near future with limited energy supply and high energy costs. Thus if Taipower can spread the energy conservation concept around while providing power service to the customers, it will be a win-win situation for both Taipower and the environment. In order to increase the customers' energy conservation awareness, every year Taipower endeavors to interact with the civil societies, communities and education institutions through organizing the following activities (about 1,200 yearly).

ties such as Mother Classroom Promotion Meeting, Large Customers Forum, Power Consumption Knowledge and Basic Repair Classes. The branches are also participating in various activities held by schools, farming and fishing coops, neighborhood offices, and civil societies to promote the concepts and provide useful tips in electricity conservation.

(1) Holding annual regional Energy Conservation Exhibition since 1991.

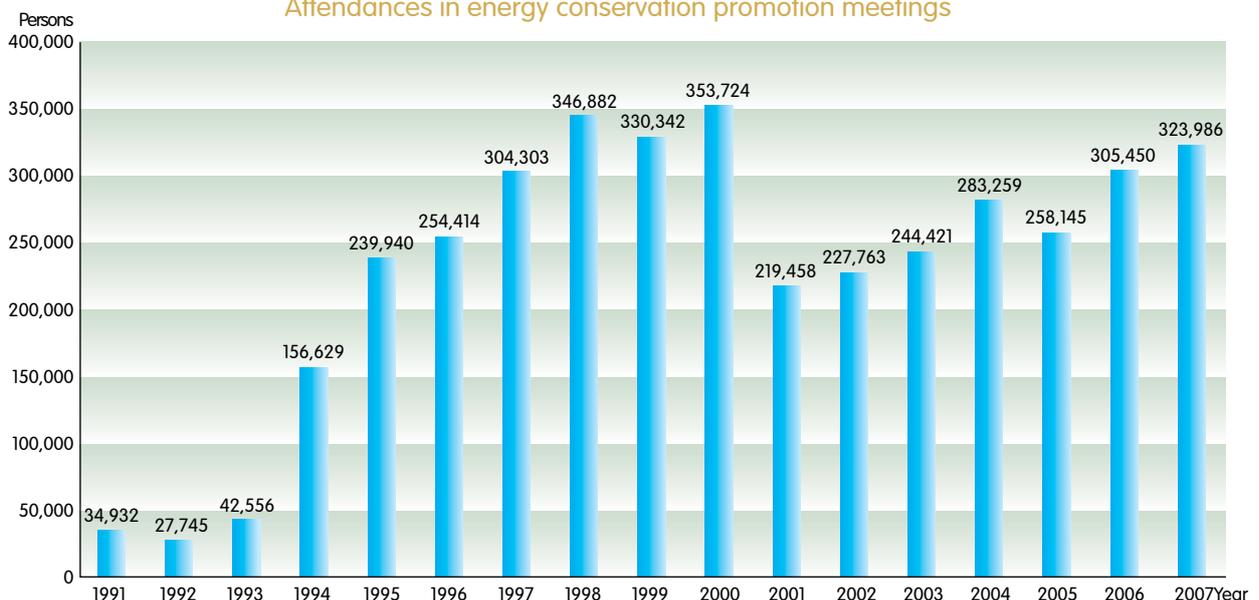
(3) Actively visiting large customers (over 100 KW) to offer free consulting service in improving energy efficiency and reducing production costs.

(2) Each business branch continuing to hold annual activities

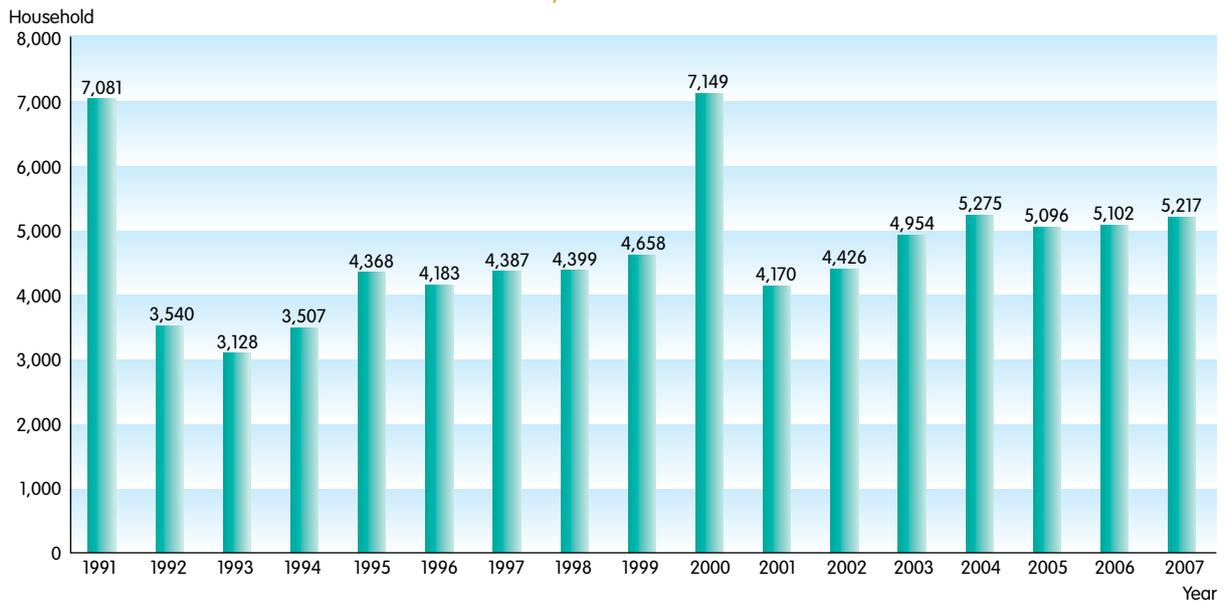
(4) Providing consulting services on energy related questions through the toll-free Energy Conservation Hotline (0800-031212, extension 2).

Achievements in promotion of electricity conservation and provision of technical services

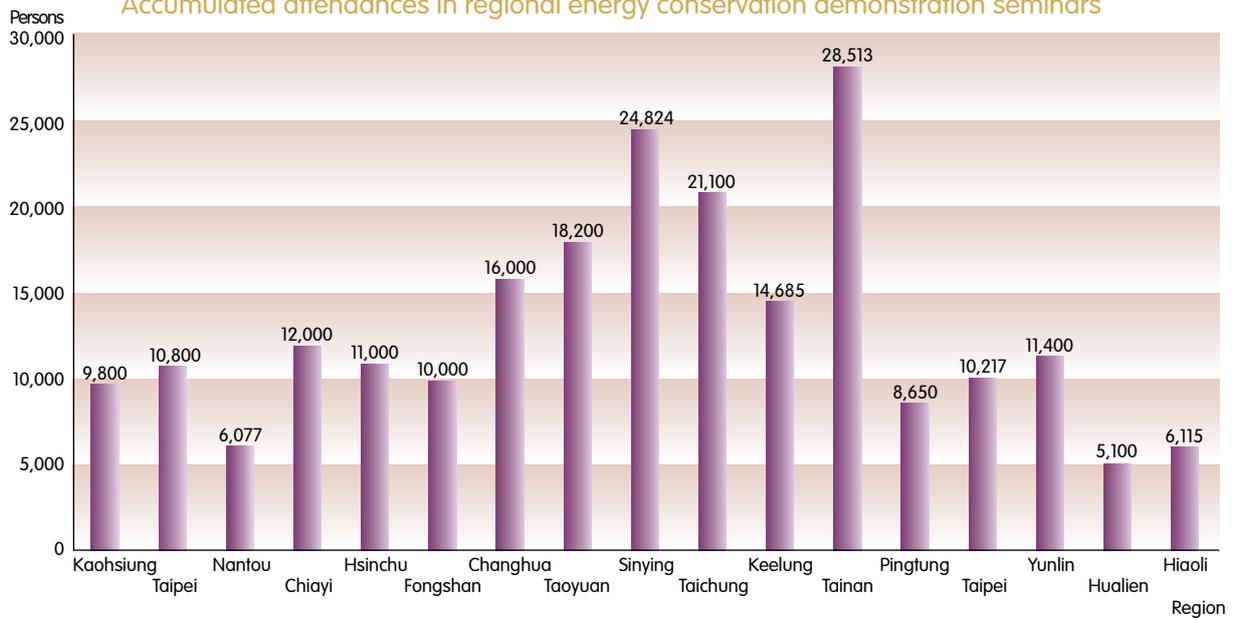
Attendances in energy conservation promotion meetings



Visits made in electricity conservation consultation visits



Accumulated attendances in regional energy conservation demonstration seminars



Enhance Health, Safety And Environmental Education

Since its establishment in 1946, Taipower has been signed charged with and has successfully achieved its mission in providing stable power supply to support Taiwan's industrial development process. However, this

hard-earned achievement is gained through the collective efforts of our hard-working employees, which is why Taipower has always emphasized and invested in protecting the health and safety of our employees.

Taipower's Safety And Health Guidelines

● Policy

- (1) Human life is the most important, and industrial safety is the highest priority.
- (2) Life is invaluable and deserve our utmost care.
- (3) The premise is to keep the equipment safe and environment safe; the priority is to implement those at safety condition.
- (4) All employees shall participate in industrial safety and health activities; the pursuit of safety and health is a never ending process.

● Goals

- (1) Prevent all occupational accidents and protect the employees' safety and health.
- (2) Achieve safe equipment, standardized operations and body, mind and social healthy.
- (3) Prevent human errors fully; fulfill self-protection, mutual-protection and monitored-protection.
- (4) Promote humanized management, establish open, comfortable, and lively safety and healthy culture.

Establish Occupational Safety And Health Management System

In order to reduce the risks of industrial accidents, Taipower is actively providing consulting service to our business units in establishing the occupational safety and health management system meeting the requirements of OHSAS 18001& TOSHMS. While adhering to the system requirements of continuous improvement, legal compliance

and policy fulfillment, Taipower also wishes to reduce the risks of industrial accidents through the procedures of hazard identification, risk assessment and risk control mandated in the system. As of the end of 2007, a total of 19 Taipower units are OHSAS 18001 certified.

Taipower's OHSAS 18001-certified units

Certified system	Unit name			
Generation	Mingtai Plant Hsiehho Plant	TaiChung Plant Hsinta Plant	Linkou Plant Takuan Plant	Tungshiao Plant
Maintenance	Department of Maintenance			
Nuclear generation	2 nd Nuclear	Radioactivity Testing Lab	1 st Nuclear	3 rd Nuclear
Power supply	Kaoping Branch	Huatung Branch	Jiannan Branch	
Business	Tainan Branch			
Transmission line and substations project	Central Region	Southern Region	Northern Region	
Total	19			

Safety And Health Management Of Contractors

Historically, Taipower has always considered removing unsafe working environment and reducing occupational accidents as our most important safety and health responsibility. In Taipower, a three-tiered safety inspection system is being implemented at the headquarters, department and unit level respectively. All levels of managers and safety inspectors will also conduct random unscheduled

on-site inspections. In terms of safety and health aspect, Taipower has treated all our employees and contractors equally, and truthfully implement the following measures in accordance with government regulations and company requirements:

- Stipulate occupational safety and health requirements

in contracts and follow-up on their implementation.

- Organize safety and health promotion meetings and invite safety and health experts and government officials to deliver relevant speeches.
- Establish Industrial Safety and Health Group to establish communications between Taipower and contractors and assist them in implementing safety and health measures.
- Promote on-site hazard prevention activity and tool box meeting (TBM) to inform workers of the site-related hazard factors and safety and health measures which should be taken.

Status Of Environmental Impact Assessment

In accordance with the Environmental Impact Assessment Act, for power generating facility which exceeds the designated scale, an Environmental Impact Assessment (EIA) report is required to pass by Environmental Protection Administration's review prior to construction permit application. Thus, for development projects such as new power generating and nuclear facilities, Taipower will draw up a comprehensive assessment plan and conduct detailed planning with respect to pollution control regulations, nature resource protection regulations, landscaping, historic site, socioeconomic impact and mitigation methods. For some environmental key issues of power development project, Taipower will enlist the service of professional institutions to conduct related studies to render the assessment results more objective and thorough. In order to ensure the development project also accommodates public needs and the EIA report truthfully reflects the impact of project on surroundings, humanity, ecology, society and economy, Taipower will usually consult extensively the views of government agencies, scholars, experts, people's representatives, interested parties, and residents within the project area in the evaluation stage.

As of year-end 2007, Taipower has 46 projects of environmental impact assessment reports that have passed

● Implement three-tier inspection system truthfully and penalize non-compliance severely; conduct unscheduled inspection on key operations or tasks with potential safety risks.

● Promote "National 233 Work Place Safety Plan" and implement accident reduction measures.

Despite our extensive efforts, 45 occupational accidents still occurred in 2007, which included 16 commuting traffic accidents, 10 on-the-job traffic accidents, and 3 electricity shock accidents, and resulted in a total of 2 deaths. The occupational accident occurrence rate is 1.72 out of a thousand.

by Environmental Protection Administration's review by and also 42 projects of environmental impact difference report have passed as well. During construction and operation stage of those projects Taipower has been follow-up which written in those EIA reports, and received good comments from the environmental authority auditing.

Recently, factors such as the review process for environmental impact assessment has been taking unusually long, energy policy and needs for power projects are being reviewed repeatedly, and the review principle for CO₂ issue is unclear and difficult for individual project to follow, have made the progress for some Taipower development projects' environmental impact assessment behind schedule. Nonetheless, Taipower will endeavor to meet the demands of all stakeholders in this environmental impact assessment process.



Advance Environmental Conservation And Biodiversity

Creators and natural environment interplay and affect each other throughout evolution. Once the environment is destroyed, the biota within the environment can be hardly to survive, and the whole ecosystem will likely be destroyed. As a result, the diversify will not be preservation.

Taipower has always been concerned about the ecolog-

ical environment, biodiversity, fishing rights, marine preservation and tree planting issues. Not only has Taipower conducted long-term environmental studies and monitoring, but also implemented a series of ecological research and environmental projects. It is hoped that power plants can co-exist with the natural environment and that our future generations can continue to enjoy a beautiful natural environment.

Environmental Protection Action For Power Plant Construction

The Environmental Impact Assessment Act stipulates that prior to the construction of electricity generating facility which exceeds the designated scale, an Environmental Impact Assessment (EIA) process is required. During this EIA process, Taipower has always undertaken detailed investigations of the air quality, river and lake water quality, ecology, and noise and vibration aspects surrounding the planned site together with experts from the academia and consulting organizations. The purpose of this process is to reduce the ecological impacts of power plant construction through well planned environmental management program.

(1) Environmental protection of hydro power plant

While developing new hydro power plant, the focus of the assessment is in detailing impacts to the environment, in order to reduce such impacts.

(2) Environmental protection of thermal power plant

While developing thermal power plant, the focus of EIA is on incorporating pollution control measures into the plant planning process. Besides introducing innovative pollution control measures, improvements should also be made to fuel, equipment and operating procedures in order to reduce environmental impacts comprehensively.

(3) Environmental protection of nuclear power plant

The EIA Act stipulates the completion of EIA process prior to any development of nuclear power plant or radioactive waste storage and processing site.

Therefore, besides incorporating impact mitigating measures into development planning of new nuclear power plant, environmental monitoring program will also be implemented during the construction phase to ensure minimal impacts to the environment during this stage.

For installation of new generating units, in addition to developing detailed assessment plan, Taipower will also develop mitigation measures to potential environmental impact factors based on requirements of relevant regulations. For key environmental issues in the development project, Taipower will enlist the service of external professional institutions to conduct related studies, so that the assessment results can be more objective and thorough.

2007 Status of environmental impact assessment review

Status	No. of assessments
Under review	10
Passed review	2



Tree Planting

Facing the increasingly serious global warming threat, carbon dioxide reduction has become every corporation's responsibility. As the largest power supplier in Taiwan, Taipower has decided to take the lead in balancing power generation and environmental protection and care more about Earth and the environment of Taiwan.

Thus, Taipower considers tree planting an important measure to reduce carbon dioxide emissions. In the past, Taipower has practiced tree planting on sites of thermal power plants and business branches with a total planting area of 261 hectare, equivalent to the size of

10 Daan Forest Park. In 2008, Taipower will continue the tree planting project and has signed tree planting and adoption agreements with the governments of Kaohsiung County and Taichung County with a goal of planting area of 80 hectares. This goal is equivalent to planting about 10,000 deciduous trees, the size of 3.2 Daan Forest Park, which will absorb about 2,500 tons of carbon dioxide per annum. However, this tree planting project is just the first step for Taipower, as Taipower will participate in more carbon reduction activities in the future to help mitigate global warming.



Building New Homes For Fish – Artificial Reefs

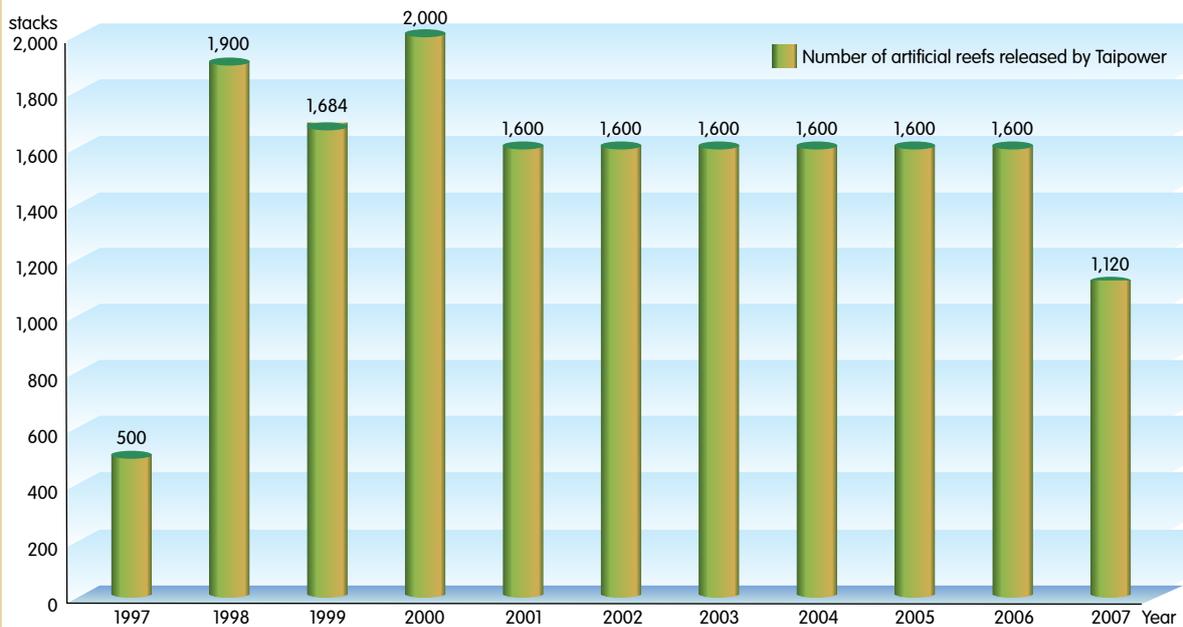
Artificial reefs function both breeding and protecting fish. First all, artificial reefs offer a habitats for fish in originally barren sandy areas. Secondly, they also provide fish with places to hunt for food and to reproduce. Thus, these reefs have played an important role in increasing the number of fish such as grouper, perch, bream, Chevron Barracuda, Spanish mackerel, thornfish, lobster, crab, abalone and octopus, which enriched the fishery resource and benefitted the fishermen.

Every year, Taipower retired many old cement electricity poles. These poles were crashed into pieces and used for road-paving or as filling material for building foundation. Taipower started to utilize used electricity poles

to build artificial reefs placed in coastal areas around power plants in recent years. Over the past eleven years, Taipower has set up 16,804 artificial fish reefs in offshore areas around our power plants. The effectiveness of modifying fishing ground, and creating resources has been positively commented by the public.



Artificial reefs released by Taipower



Year	Release location
1997	Haikou and 2 nd Fanlao, Pingtung
1998	3 rd Fanlao, Pingtung; Wujia, Taichung; Kinshang; Waipu, Hiaoli
1999	Haikou, Pingtung; Meeto, Kaohsiung; Paihsin, Miaoli; Linkou, Taipei; Toucheng, Yilan
2000	Tanhsei, Taipei; Yenlao, Hualien; Wujia, Taichung; Wangkung, Changhua; Yungan Taoyuan
2001	Yehliu, Taipei; Yungan Taoyuan; Paihsin, Miaoli; Yuenlin, Kaohsiung;
2002	Aoti, Taipei; Tanhsei, Taipei; Wujia, Taichung; Haikou, Pingtung;
2003	Aoti, Taipei; Yungan Taoyuan; Paihsin, Miaoli; Yuenlin, Kaohsiung;
2004	Aoti, Taipei; Tanhsei, Taipei; Lukang, Changhua; Haikou, Pingtung;
2005	Aoti, Taipei; Shinao, Taipei; Tanhsei, Taipei; Yungan Taoyuan; Paihsin, Miaoli;
2006	Aoti, Taipei; Tawulu, Keelung; Yungan Taoyuan; Tunghsiao, Miaoli; Wangkung, Changhua; Haikou, Pingtung;
2007	Wanghai Port, Keelung; Shinao, Taipei; Aoti, Taipei; Yehliu, Taipei;
Total	16,804stacks and 20 reefs

Fry Release - Sending Fry To The Ocean

Taiwan's coastal fishery resource has been decreasing in recent years. Being in a country surrounded by ocean, Taipower understands the importance of marine resources and the people's reliance on these resources. Since 1997, therefore, supporting the government's fishery policy of extending the cultivation and restoration of fishery resources, Taipower has been breeding and releasing the economically valuable fries.

- From 1997 to 1999, Taipower had donated Taiwan Fisheries Bureau 10 million, 5 million and 4.7 million NT dollars to operate on the release of fries.

- From 2000 to 2006, Taipower co-operated with Fishery Agency of Council of Agriculture in releasing 1 million fries in coastal areas around power plants each year.

- In 2007 the number of released fries was increased to 1.2 million.

- During the past 11 years, Taipower has released 11.115 million valuable fries in coastal areas around power plants.

Coral Bleaching

Coral reefs are the most productive and biologically diverse ecosystems in the ocean, and are often called "tropical rainforests in the seas." Within this ecosystem, the structure formed by the continuous growth of the corals offers habitats for many beings. The symbiotic relationship between corals and the unicellular algae zooxanthellae also provides food for many marine organisms. Sponges, Cnidarians, worms, crustaceans, molluscs, echinoderms and fishes are all common inhabitants of the coral reefs.

In the past several years, in addition to participating

in Kenting National Park's Hengchun Peninsula Coral Reefs Comprehensive Conservation Program, Taipower has also commissioned the Academia Sinica and the National Museum of Marine Biology & Aquarium to conduct the "Coral Reefs Ecology Monitoring Project" and installed three underwater remote monitoring systems (since 2003) at the water intake of the Third Nuclear Power Plant. These remote monitoring systems allow Taipower to monitor the living condition of the coral reefs whole day long, and project live images of the reefs at Taipower Southern Exhibit Hall and the Government Website to the public.



Carnation/Tree Coral (*Dendronephthya* sp.) / Photo by Dai Changfeng



Carnation/Tree Coral (*Dendronephthya* sp.) / Photo by Dai Changfeng



Euphyllia ancora / Photo by Guo Fuwen



Chaetodon / Photo by Dai Changfeng



Tubastraea aurea / Photo by Dai Changfeng



Indicator

Integrity Caring Innovation Service

Indicator

Financial Related Indicators

Financial performance of Taipower

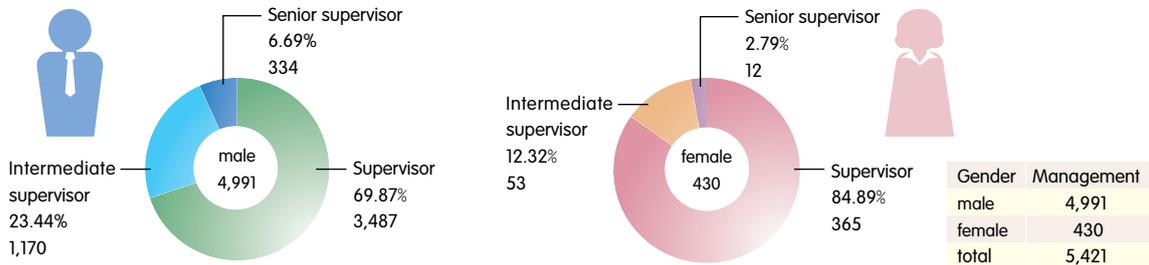
Units: billion NT dollars

Item	Year	2007	2006
Operating revenues		408.742	389.264
Operating costs		419.430	374.956
Operating expenses		10.788	10.121
Other income		6.517	8.478
Other expenses		16.115	15.480
Loss before income tax		-31.075	-2.815
Loss after income tax		-23.132	-0.338
Effect of change in accounting principles			0.138
Net loss		-23.132	-0.200



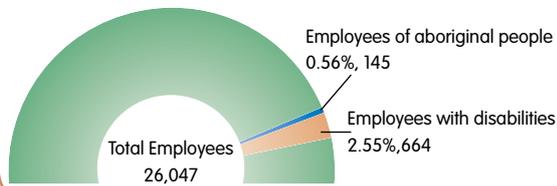
Employee Related Indicators

The ratio of male and female supervisors 2007



Note: The total number of employees is 26,047 people. The average age is 47.2 years old and average experience is 24.3 years.

Minority Employees



On-the-job and off-the-job training

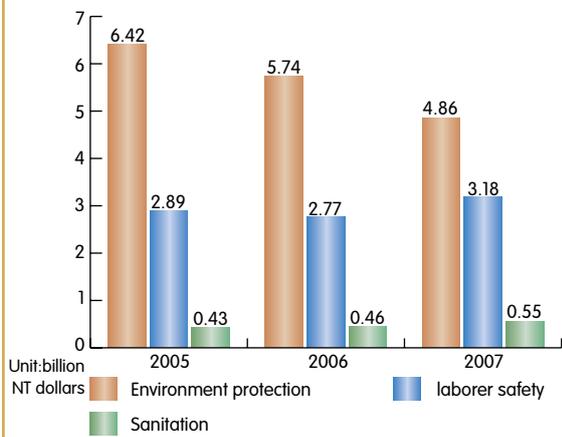
	2007
On-the-job and off-the job training	45,859

Overseas Training

	2007
Inspection in foreign countries	38
Internship in foreign countries	82
Elite project	10
Total	130

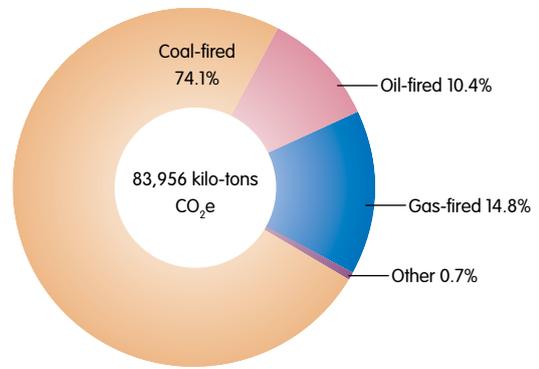
Environment Related Indicators

Total environmental expenditures in 2007



9.74 billion NT dollars in 2005, 8.97 billion NT dollars in 2006, 8.59 billion NT dollars in 2007

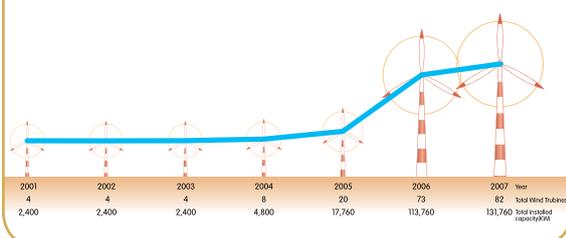
2007 Taipower GHG emissions (by fuel)



2007 Taipower GHG emissions

GHG	Emission (kilo-tons)
CO ₂	83,267
CH ₄	189
N ₂ O	318
SF ₆	177
HFCs	5
PFCs	-
Total	83,956

Taipower's wind power development trend



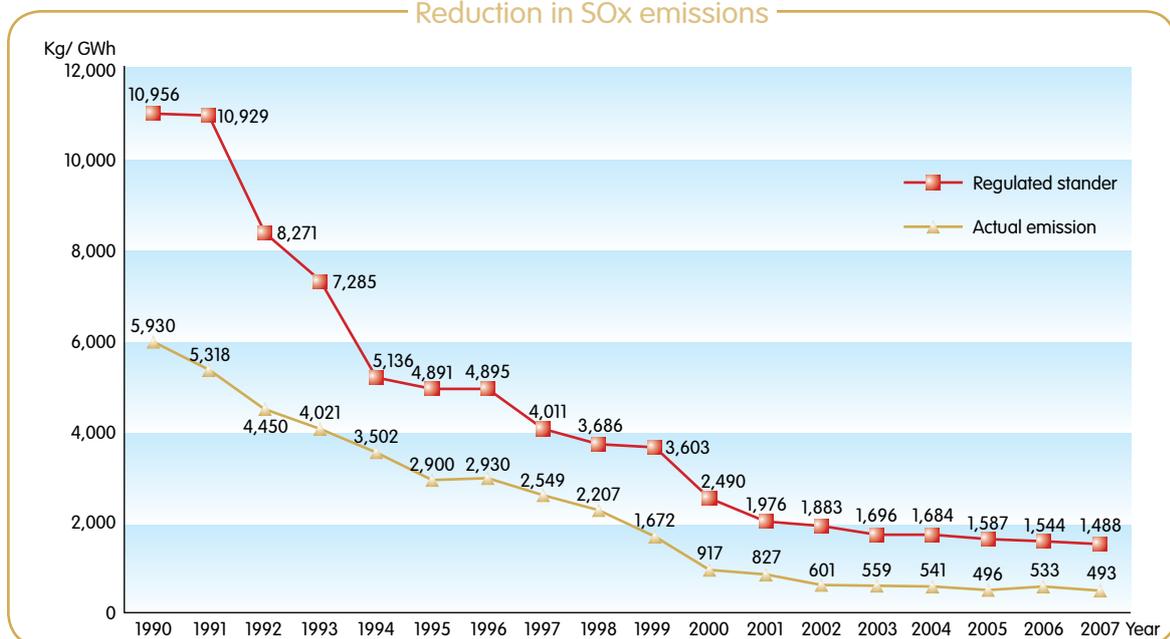
Environment Related Indicators

Air quality indicators surrounding thermal power plants in 2007

Power plant	No. of monitoring stations	SO ₂ (ppb)	NO ₂ (ppb)	PM ₁₀ (µg/m ³)
Shenao	4	3.6~5.7	6.8~10.1	46.1~66.8
Hsiehho	3	4.9~6.7	9.6~14.4	35.3~62.7
Linkou	8	3.7~7.9	11.2~15.9	60.3~91.3
Tunghsiao	8	3.9~11.0	11.1~15.0	51.9~93.1
Taichung	11	4.6~7.6	12.5~21.6	50.7~81.4
Hsinta	6	4.1~7.2	16.9~20.3	75.8~80.2
Nanpu	3	7.3~8.5	27.0~28.4	71.6~72.9
Talin	6	8.1~11.9	20.4~27.6	74.3~83.8
Chienshan	3	2.7~4.9	3.2~4.9	38.0~51.8
Air quality standards		30	50	65

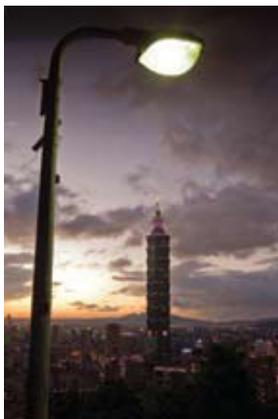
Note: The tabled values are annual average values from the plants' air quality monitoring stations.

Reduction in SOx emissions



Results of wastewater reuse in 2007

Category	Amount(ton)
Industrial wastewater	1,954,898
Rain water	286,942



2007 Waste recovery statistics

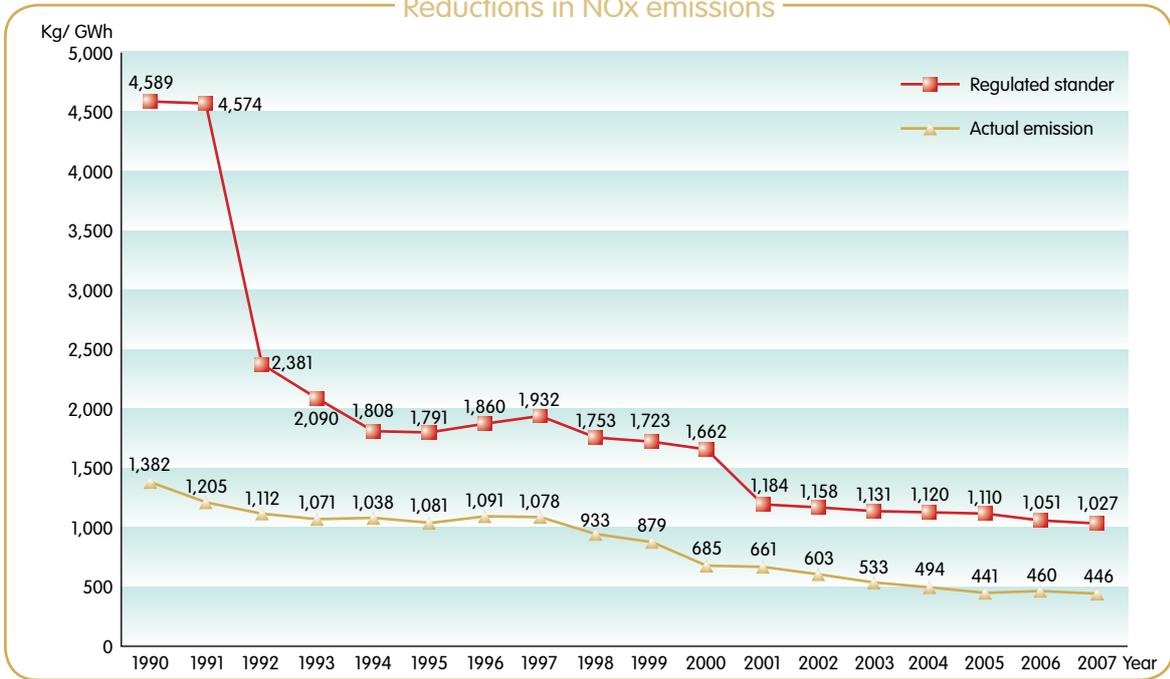
Item/Year	Units	2005	2006	2007	Total
Waste cable	Kg	749,277	1,377,994	1,143,838	3,271,109
Waste aluminum conductor steel reinforced	Kg	124,612	134,516	87,200	346,328
Scrap iron	Kg	12,749	26,846	111,936	151,531
Waste prestress concrete pole	Number of poles	22,025	16,350	21,960	60,335

Results of energy conservation measures

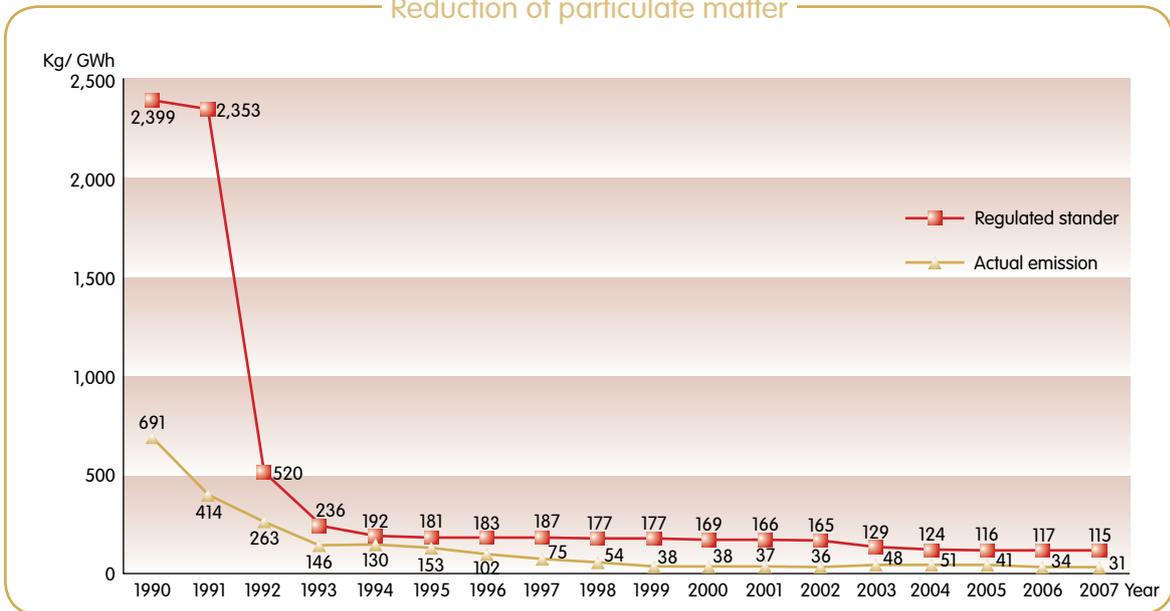
Year	Electricity consumption in power plants, substations and offices		Gasoline consumption in offices		Water consumption in offices	
	Electricity saved (GWh)	Saving rate (%)	Gasoline saved (1000L)	Saving rate (%)	Water saved (kilo-m ³)	Saving rate (%)
2005	100.9	2.05	101	4.1	179	5.8
2006	104.1	1.54	145	5.4	436	15.0
2007	118.2	1.69	307	11.9	87	3.5

Note: Each year's reduction is compared with the previous year.

Reductions in NOx emissions



Reduction of particulate matter



Conditions Of Fossil Fuel Power Plants



Talin Plant



Hsiehho Plant



Taichung Plant



Plant names	Generation unit	Electricity generated (in 10,000 KW)	Fuel type	Dust-collecting equipments	Equipment descriptions			
					SOx removal device		NOx removal device	
					Smoke desulfurization equipment	Improve combustion condition	Smoke denitration equipment	
Hsiehho	#1	2,000	Oil	EP	Low sulfur heavy crude oil	O	-	
	#2						-	
	#3						-	
	#4						-	
Linkou	#1	900	Coal	EP+ Dust collector with desulfurization apparatus	O	O	-	
	#2						-	
Tunghsiao	#1CC	1,785	Gas	-	-	O	-	
	#2CC			-				
	#3CC			-				
	#4CC			-				
	#5CC			-				
	#6CC			-				
Taichung	#1	5,780	Coal	EP	O	O	O	
	#2						-	
	#3						-	
	#4						-	
	#5						-	
	#6						-	
	#7						-	
	#8						-	
	#9						-	
	#10						-	
Hsinta	#1	4,326	Coal	EP	-	O	-	
	#2				-			
	#3				-			
	#4				-			
	#1CC		Gas	-	-	-	-	
	#2CC			-	-	-		
	#3CC			-	-	-		
	#4CC			-	-	-		
	#5CC			-	-	-		
Nanpu	#1	2,400	Coal	EP	low sulfur coal	O	-	
	#2		-					
	#3		Oil		Low sulfur heavy crude oil		-	
	#4		-					
	#5		Gas		-		-	
	#6		-					
Talin	#1CC	1,118	Gas	-	-	O	-	
	#2CC			-				
	#3CC			-				
	#4CC			-				
Chienshan	#1-4	129	Oil	Cyclone	Low sulfur diesel	-	O	
	#5-8					-		
	#9-12					-		



Nanpu Plant



Chienshan Plant



Linkuo Plant



Tunghsiao Plant



Hsinta Plant

Emission concentration(Mean)			Regulated concentration		
PM	SOx	NOx	PM	SOx	NOx
mg/Nm ³	ppm	ppm	mg/Nm ³	ppm	ppm
27	156.6	128.9	70	300	200
24.5	157.5	122.1	70	300	200
16	158.4	122.6	70	300	200
17.5	173.2	107	70	300	200
14.9	32.1	178.9	41*	200	300
16.1	30	133.7	41*	200	300
5.3	0.7	49.5	81*	50	80
6.5	0.8	66.8	81*	50	80
9.5	0.8	68.4	83*	50	80
5.5	0.7	14.3	82*	50	30
5.5	0.4	17.6	82*	50	30
3	0.8	13	82*	50	30
10.5	32.4	91.1	23.6**	100**	100**
9.8	27	84.1	23.6**	100**	100**
9.4	28.2	83.6	23.6**	100**	100**
9.7	30.7	91.4	23.6**	100**	100**
9.8	31	84.9	23.6**	100**	100**
11.4	35.9	86.3	23.6**	100**	100**
12	38.2	89.3	23.6**	100**	100**
9.1	39.2	88.7	23.6**	100**	100**
5.1	26.7	42	32	50	50
3.8	19.6	38.3	32	50	50
11	78.9	133.5	34	90**	210**
13	81.3	152.1	34	90**	210**
4	19.8	71.5	34	80**	80**
2	16.1	70.2	34	80**	80**
3	0	20.3	46**	50	40
2.5	0	22.7	46**	50	40
2.5	0	23.9	46**	50	40
10.5	0	22.6	46**	50	40
10	0	21.1	46**	50	40
12.8	119.7	129.9	43	200	300
3.5	126.3	124.1	43	200	300
11	164	137.7	44	300	200
7.8	137.1	110.8	44	300	200
0	0.3	37.9	39	50	120
0	0.5	59.7	39	50	80***
0	0	18.1	32	50	80
0	0	13.6	32	50	80
0	0	13.9	32	50	80
0	0	15.3	32	50	40
21	150	580	182*	500	1,200
25	160	217	182*	500	363
23	171	229	182*	500	363

Note: *1.Standard of central government, **2. Standard of local government. ***3. limit in environmental impact assessment.

Environmental Aspect In Operation

Electricity purchased 48.4 billion KWh

Mining and transportation of fuels



INPUT

Fuel for power generation

Coal	=	28.245	million-tons
Natural gas	=	5,802.790	million- m ³
Heavy oil	=	2,798.000	million-liter
Light oil	=	137.400	million-liter
Uranium	=	111.000	tons

Water consumption

11.292 million-tons

Energy used in offices

Electricity used	=	6.877	billion KWh
Oil used	=	2.278	million-liter
Water used	=	2.401	million- m ³



Electricity generated 153.5 billion KWh

Environmental

Nuclear power plants

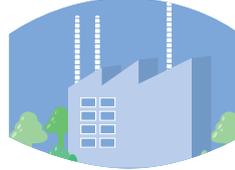
Electricity generated 39.0 billion KWh



Radioactive waste
Safety control
Water quality and
Noise and

Fossil fuel power plants

Electricity generated 106.9 billion KWh



Air pollution
● Dust-collection and sulfur equipments
● Air quality monitoring
● High performance dust precipitator
Waste reuse and
● Reuse and recycle of Coal

Water power plants

Electricity generated 3.9 billion KWh



Maintain a clean
● Environmental impact
● Fry Release
Landscaping

Reusable energy

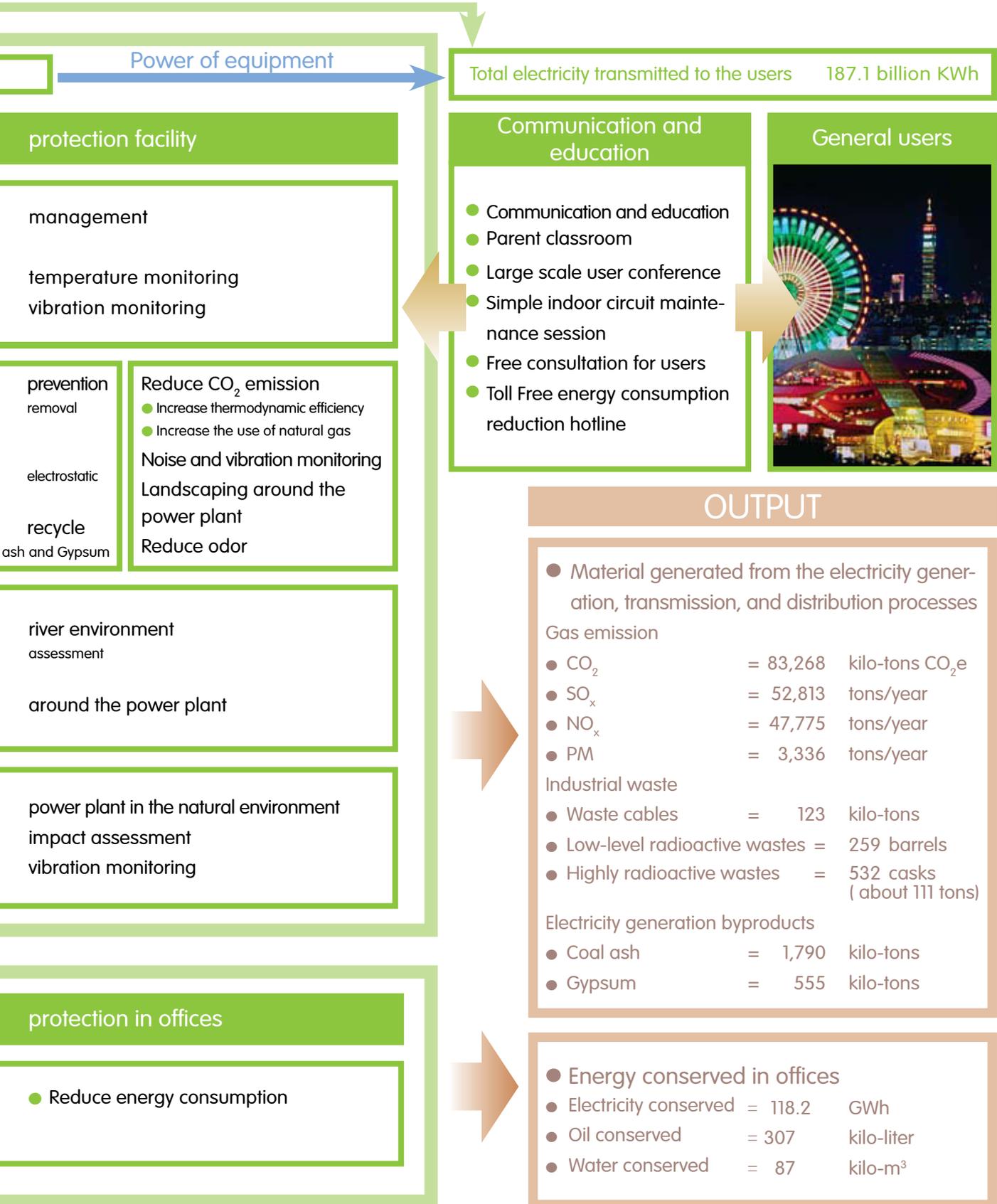
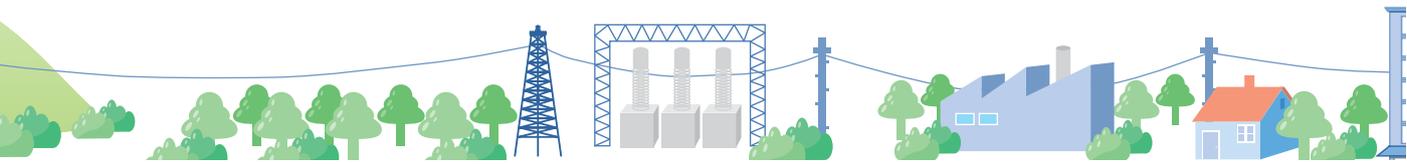
Electricity generated 3.7 billion KWh



Incorporate the
Environmental
Noise and

Environmental

- Environmental protection in offices
- Increase energy efficiency



Appendix

Integrity Caring Innovation Service

Appendix

Glossary

Item	Term	Description
1	Electric cord and pole	The cable itself and the pole supporting it.
2	Seasonal rate	Differentiate the summer rate and non-summer rate.
3	Rate schedule	The rate of electricity is depending on different times of the day. In a two sectional schedule, a day is divided into peak time and non-peak time. In a three sectional schedule, a day is divided into peak time, semi-peak time, and non-peak time.
4	Peak time	The electricity demand is higher. In two sectional schedule, the peak time is 7:30 to 22:30. Monday to Friday. (except for non-peak days) In the three sectional schedule, the peak time is 10:00 to 12:00 and 13:00 to 17:00 Monday to Friday(except for non-peak days) during the summer.
5	Semi-peak time	In the three sectional schedule, the peak time is 7:30 to 10:00, 12:00 to 13:00, and 17:00 to 22:30 Monday to Friday(except for non-peak days) during the summer, and 7:30 to 22:30 Monday to Friday if it is not summer.
6	Off-peak time	Times when the electricity demand is lower Monday to Saturday 00:00 to 07:30 and 22:30 to 24:00 and entire off-peak days.
7	Off-peak days	National holidays: New Year, Lunar New Year, Lunar New Year's Eve, Peace Day, Tomb Sweeping Day, Labor Day, Dragon Boat Festival, Moon Festival, Double Tenth.
8	Peak time demand	The electricity demand during peak time.
9	Peak time rate	The price of electricity for the usage during peak time.
10	Contracted capacity	The customer and Taipower agreement on the amount used by the customer. It can be either the installment contracted capacity or demand contracted capacity.
	Installment contracted capacity	Agreed on the total electricity demand.
	Demand contracted capacity	Agreed on the total electricity demand, Agree on the electricity demand per 15 minutes.

Item	Term	description
11	Discount rates	The electricity used in military complex, schools, agriculture and street light can use the discount rates.
12	Alternative bill payment	The user can pay their bills through financial organizations.
13	Alternative bill collection	Payment can be receive in certain locations that are approved by Taipower.
14	Capacity management	Through different rates in different time frames, Taipower tried to reduce the electricity at peak time. Therefore to reduce the demand of more power plants.
15	Amount of electricity supplied	Amount of electricity supplied = net amount of electricity generated + amount of electricity purchased - electricity used by pump storage.
16	Amount of electricity generated	It usually refers to net electricity generated. Net electricity generated = gross electricity generated - in-plant electricity consumed.
17	Peal capacity	The high amount of electricity supplied in a given period of time.
18	Installed capacity (generating unit capacity)	The installed capacity of the generating units of power plant. The installed capacity of the system is the sum of installed capacity of all power plants.
19	Trip	The phenomenon of power supply interruption due to equipment failure that leads to the activation of protection switch (e.g. circuit breaker).
20	Power system (power grid)	A network of electric power lines linking up the power plants to transmit and distribute power to users.
21	Jump operation	Automatic or manual opening of the circuit breaker due to mechanical failure, manual mistake or natural disaster.
22	Downtime	The discontinue operation of generation units, it could be planned or unplanned.
23	Scram	An action of the nuclear reactor protection system that prompts the control rod to rapidly and totally insert into the reactor core. If the generator is tied in to the power system and in supply mode at the time, it will trip and stops power supply.
24	Commercial run	A new generating unit joining the operation of power grid after completing all kinds of tests and acquiring necessary licenses.
25	Network lose	The loss of electrical energy in the transmission and distribution networks in a form of heat due to the resistance in the network.
26	Loop wire Loop wire length	Wires usually run back and forth two or three times. They run parallel on the same side of the pole. Loop wire length = number of loops X length of each wire, measured in kilometer.
27	Feeder	Electric power line coming from an electrical substation, meant to distribute power to the users.
28	Underground grid	Install the transmission and distribution network underground.
29	Electromagnetic wave	Interaction of electrical field and magnetic field. Higher the frequency, higher the energy.
30	Electromagnetic field	Field with 3~3,000 Hz of electromagnetic wave.
31	Induction	The condition of electric shock to human body upon contact with an electric energy source or due to the pass-through of electric current.
32	High-altitude operation	Works that are performed 2 meters above ground.
33	Environmental radioactivity monitoring	Measuring direct radiation and radiation in air, water, biological samples and near shore sand in consideration of the major path of radiation exposure and eco-environment to understand the distribution and accumulation of radioactive substance in the environment surrounding a nuclear facility and ensure that the environmental radiation people are exposed to is below the legal limit.
34	Radioactive waste	Wastes that are radioactive or contaminated by radioactive materials, including the spent nuclear fuel that is going to final repository.
35	Radioactive waste processing	Process that alter the concentration, volume or phases of the radioactive wastes.
36	Radioactive waste storage	Temporary storage before the final repository.
37	Radioactive waste repository	Permanent storage of radioactive wastes.
38	Highly radioactive waste	Currently, it only includes the spent nuclear fuel.
39	Reusable energy	Any replenishable energy that come from the environment.
40	Co-generation	An energy supply system that generates steam and electricity at the same time and offers the underlying benefits of enhanced energy use and economic interest and reducing environmental pollution.
41	Liberalization of electricity production	Eliminate the monopoly of electricity production by bringing in the market mechanism in order to promote better service and reduce the price.
42	Private power plants	Plants built by independent power producers.
43	Kilowatt-hour (KW)	Unit of power.

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EN10 Water recycled	68	LA14 Genderpay disparity	N.A
EN11 Land assets in sensitive areas	N.A	Social Indicator(2)	
EN12 Impacts on biodiversity	74	Disclosure on management approach	
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Note: N.A Not applicable
- undisclosed