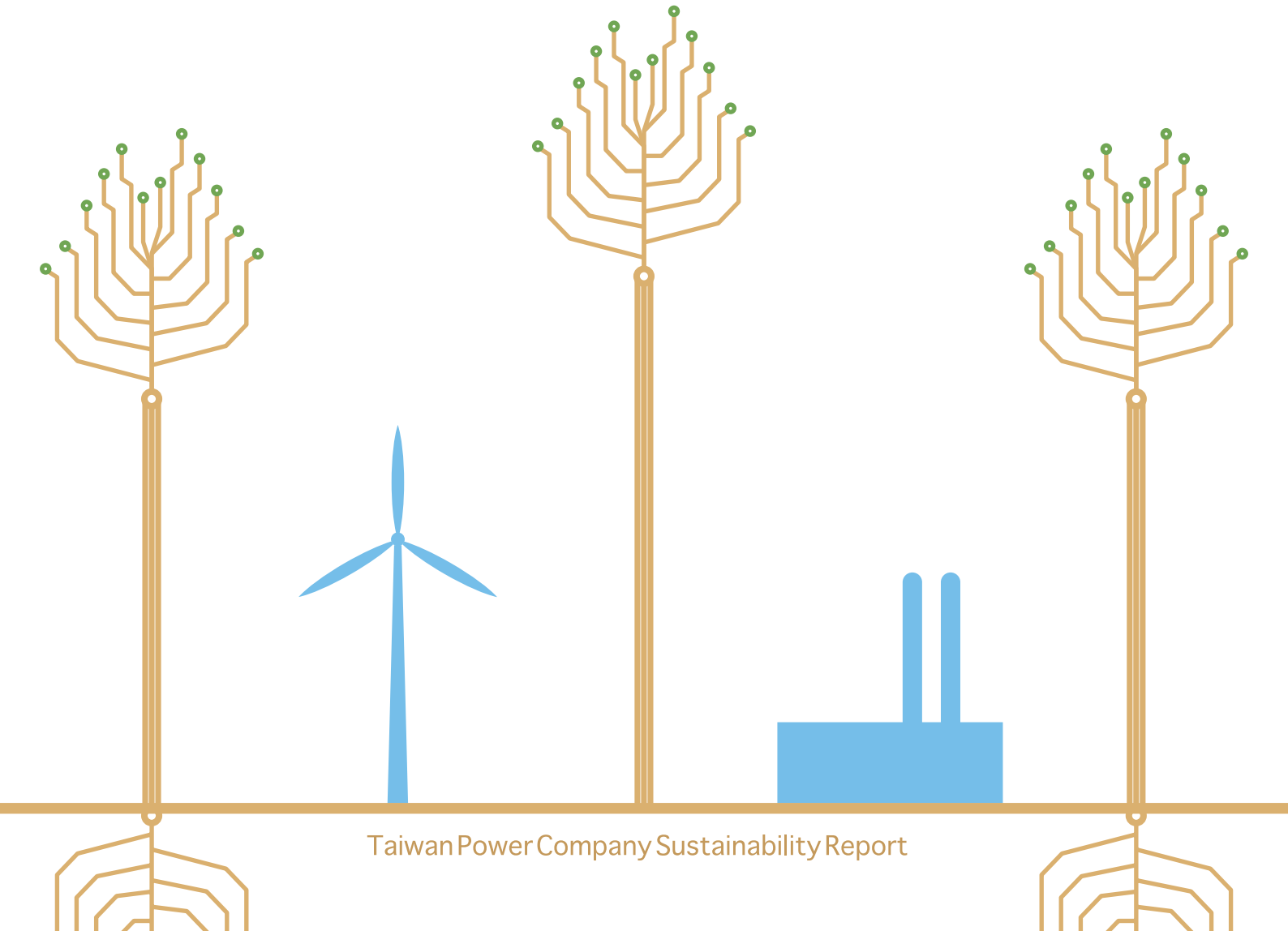
Taiwan Power Company Sustainability Report

2010



Taiwan Power Company Sustainability Report

Editorial Policy

About the Report

This is the fourth issue of the Sustainability Report published annually by the Taiwan Power Company (Taipower). This edition of the report follows the G3 of the Global Reporting Initiative (GRI) guidelines as well as the accountability principle standard (APS)-AA1000APS (2008). The information is compiled based on three principles: inclusivity, materiality, and responsiveness. The purpose of this report is to communicate Taipower's dedication to key sustainability issues and its commitments and achievements in regard to environmental protection and social responsibility.

Period Covered by the Report

January to December 2009

Scope of the Report

This report contains data and information regarding sustainability issues and achievements within the financial, environmental and social aspects of Taipower's operations. While preparing this report, Taipower has voluntarily adopted the GRI G3 Guidelines and AA1000 Standard, and self-declared that this report conforms to GRI level A requirements.

Inquiries

This report can be found in both English and Chinese versions. Both versions are downloadable at our website (http://www.taipower.com.tw/) as PDF files. Our next sustainability report is planned to be published in the third quarter of 2011.

Taipower sincerely hopes that the publication of this report may allow interested parties to further their understanding of our efforts in sustainability. If there are any suggestions or comments regarding this sustainability report, Taipower will gladly accept them through any of the following contact methods :

Taiwan Power Company

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2007 Sustainability Report
published in August 2007

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published in August 2008

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published in August 2009

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1 Introduction

Introduction

Profile of Taipower

The Taiwan Power Company (Taipower) was established in May of 1946. It is a vertically integrated power utility. Its business scope includes: power generation, power transmission, power distribution and power sales. It's the sole power sales company in Taiwan. The electricity produced by independent power producers (IPPs) and cogeneration is sold in bulk to Taipower, who in turn sells this to the customer.

As of the end of 2009, the total installed capacity of Taiwan's power system reached 40,247 MW, of which Taipower accounted for 32,061 MW and IPPs for 8,186 MW. The major energy sources comprise hydro, thermal, nuclear and renewable. The power grid includes 579 substations and transmission and distribution lines totaling 346,000 KM, providing electricity to a population of 23 million in Taiwan, and the offshore islets of Kinmen, Matsu and Penghu.

Taipower understands quite well that it will confront challenges of competition in its near future after the liberalization of the power market. A broader international vision, a combination of more efficient management technologies and management strategies that focus on social responsibility and sustainable development will all be keys for Taipower to maintain its sustainable growth and improvements.

Currently, energy conservation and carbon reduction have become important management issues for the global power industry. In order to demonstrate its concern about the global warming issue, and to comply with the government's Sustainable Energy Policy Guidelines, Taipower formulated the Greenhouse Gas (GHG) Regulation Strategy. Taipower continues to conduct the measures of greenhouse gas (GHG) reduction and inventory monitoring. In addition, Taipower will increase the ratio of renewable energy and promote green electricity to fulfill its responsibility as a corporate citizen in the international power industry.

Taipower Management Philosophy

Integrity

To provide accurate information to customers, employees and shareholders.

Innovation

To create customer value and enhance corporate competitiveness.

Caring

To work whole-heartedly and proactively for the benefit of the public.

Service

To fulfill internal and external customer demand based on the "customer first" concept.

Taiwan Power Company's corporate culture is "people-first" and "the pursuit of excellence", "Integrity" and "caring" are the management philosophy of "people-first", "Innovative" and "service" are the management philosophy of "the pursuit of excellence".

Taipower Mission

To offer diverse services to satisfy our customers' demands, 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.

Founded : May 1,1946

Coverage : Taiwan, Penghu, Kinmen, Matsu areas

Capital : NT$330 billion

Stock : 96.93% government-owned, 3.07% public-owned

Total assets : NT$1,588 billion

Employees : 26,921

Customers : 12.41 million

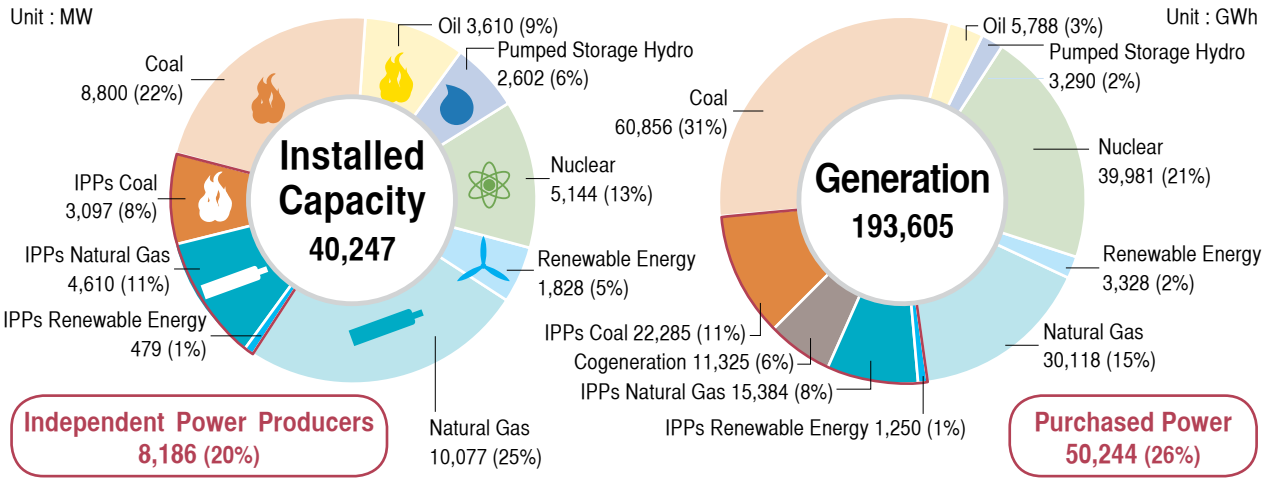
Installed capacity : 40,247 MW (Taipower + Independent Power Producers)

32,061 MW (Taipower)

Power generated and purchased : 193,605 GWh

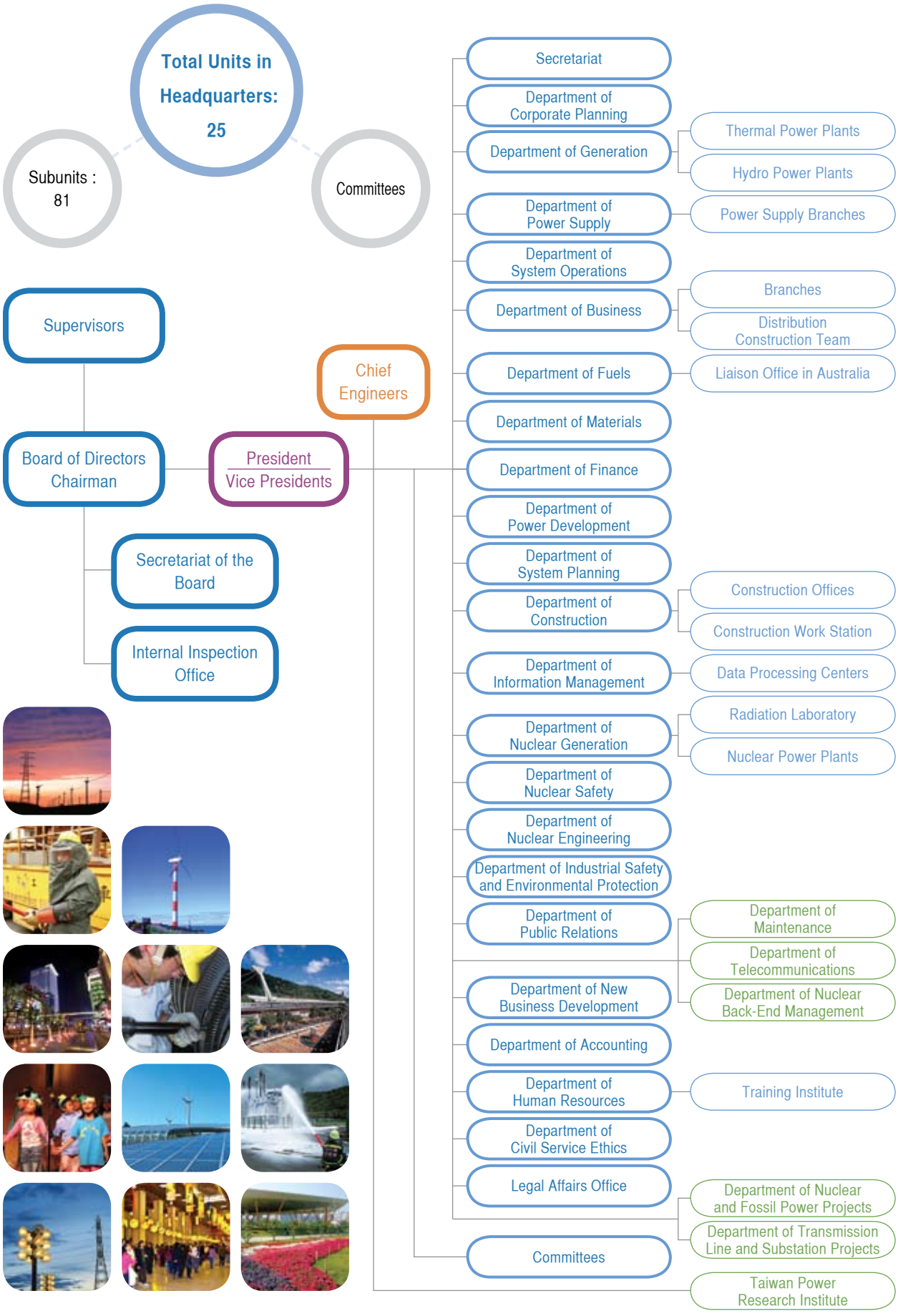
Energy sales : 179,239 GWh

Installed Capacity and Generation Mix in 2009



Power Development and Power Grid Map

Organization Chart



Letter from the Chairman

Thank you for reading the fourth issue of the Taipower Sustainability Report. As a state-owned enterprise and a public power utility, Taipower continues to uphold its management philosophy of “Integrity, Caring, Innovation and Service” in providing stable, reliable electricity to the pubic, and responding to stakeholders’ concerns about our sustainable development. This report highlights our actions and achievements in addressing sustainability issues in 2009.

The year 2009 was a year of economic recovery. The impact of the global financial crisis served to strengthen our employees’ joint determination that we should seek security while facing danger, and forced us to further improve management efforts, increase productivity, improve power supply structure, stabilize power supply, promote energy conservation and improve energy efficiency. Following the gradual recovery of the global economy, Taipower’s operating condition is also stabilizing, thanks to our initiatives.

2009 was also a year full of challenges from nature. On August 8, the flooding and mudslides caused by Typhoon Morakot created great property damage, loss of human lives and power outages to the central, southern and eastern regions of Taiwan. Facing harsh terrain and weather, Taipower employees overcame all kinds of hardships and restored 99% of the power supply in just 3 days, so that rescue missions and disaster relief efforts could continue smoothly.

In addition to conducting emergency repairs during multiple natural disasters, we also realized the potential impact that future extreme weather events could have on our operations. Therefore, in the face of the dual challenges posed by greenhouse gas reduction and limited conventional energy supplies, Taipower will continue to pursue the goals of sustainable electricity industry operation and technology improvement, and offer high-efficiency, low-pollution and low-cost power services in order to meet the energy required for society’s sustainable development while also preserving our ecological integrity.

The development of a low-carbon economy is both a challenge and a development opportunity for Taipower. In 2009, we expanded the “Tariff Schedules Discount on Energy Conservation Incentive Measures” and offered our customers discounted tariff rates when they were able to meet or reduce electricity consumption when compared with the same period of the previous year. This program was well-received and resulted in electricity savings of 3,756 GWh, equivalent to reducing 2.39 million tons of CO_2 emissions. More importantly, we were able to get our customers into the habit of conserving energy and raised their awareness of the climate change issue. In 2010, we plan to expand the "City/County Energy Saving Competition Program” and offer more tariff rate discounts to the winners of these competitions to create a community atmosphere of energy conservation and maximize gains in carbon emission reductions.

In the government’s policies and rules, the revision of “the Energy Management Law” and the passing of the “Guidelines of Renewable Energy Development” after the National Energy Conference in April 2009, as well as the government’s promulgation of its "Green Energy Industry Development Plan” and its declaration of developing a vision for renewable energy, energy technology and communication industries, all demonstrated Taiwan’s determination to move towards a low-carbon economy. In line with the trend of pursuing a low-carbon economy and Taipower’s sustainable development needs, we will continue to promote and work on the following tasks:

Improve Energy Source Mixture

Continue to develop base-load power plants, in order to reach the goal of a 51.5% base-load power ratio in 2020.

Strengthen Power Grid Structure

Move towards smart grid development through innovation to effectively integrate distributed power sources, power energy management, trading and value-added service to customers.

Develop Renewable Energy

Achieve a total wind power installed capacity of 300 MW in 2012 and install 10,000 kWp in the solar photovoltaic system.

Reduce Greenhouse Gas Emissions

Meet the carbon reduction target set in the "Energy Conservation and Carbon Reduction Plan" in order to bring carbon emissions back down to 2005 levels in 2020 and back down to 2000 levels in 2025.

Cultivate Electric Power Professionals

Set up plans to cultivate core manpower to deal with the transition period of manpower structure adjustment.

Promote Reasonable Tariff Schedules

Guide customers in the effective use of electricity through giving proper tariff schedules signals and promoting conservation of electricity to avoid cross-subsidization of various types of tariff rates.

Strengthen Energy Supply Security

Continue making foreign investments to ensure a steady supply of power generation fuels.

The 2009 Taipower Sustainability Report won a bronze prize in the "2009 Taiwan Enterprise Sustainability Report Award" held by the Taiwan Institute for Sustainable Energy. This award recognized our effort in presenting the management principles and values of Taipower and sharing our vision of integrating business decisions with sustainable development goals so that we can become a sustainable and respectable electricity provider.

Looking ahead, on the issues of low-carbon electricity promotion, green power purchasing, reasonable pricing mechanism, smart power grid promotion, etc., Taipower has and will continue to adopt a positive attitude and an open mind in fulfilling its sustainable development vision and achieving the goal of accomplishing a triple win for energy, environment and economy. Taipower not only considers itself as a power provider that grows with Taiwan's economy, but also pledges to be a model corporate citizen to lead Taiwan's development. As the Chairman of Taipower, I wish to offer my sincere gratitude for your continuing support of Taipower, and I welcome your comments and suggestions so that we can further improve our sustainability performance.

Sincerely,

Edward K M Chen

Chairman

Taipower Sustainable Development Philosophy and Organizational Development Structure

Taipower's sustainable development philosophy is to enhance energy efficiency through continuing improvement in professional knowledge and technologies, using more renewable energy, and introducing clean energy technologies to provide high-quality and reliable electricity to the public. Sustainable development of the power industry should be based on energy security, economic efficiency and environmental quality in order to satisfy the requirement of future development.

Sustainable Development Philosophy

1 Utilize limited natural resources efficiently. Support national development and societal progress with minimum power development and highly efficient management performance.

2 Balance energy security, economic efficiency, and environmental quality during power development.

3 With integrity, caring, innovation, and service in mind, fulfill our social responsibilities and create a bright future to share with our stakeholders.

Future Development Paradigm

Power Construction System
A Navigator for Low-Carbon Power Generation

- Investing annually on average over NT$200 billion to promote power construction.
- Planning the best low-carbon energy source mixture.
- Promoting green power prices.
- Establishing green power parks and promoting green buildings.
- Creating a social energy conservation atmosphere (including offering tariff schedules discount incentive measures and setting up energy conservation service teams).

Power Generation System
A High-Efficiency Power Operator

- Accelerating the replacement of old facilities in existing power plants.
- Introducing high-efficiency generation facilities and technologies.
- Strengthening operation management in hydro and thermal power plants .
- Upgrading the operation and safety performance of nuclear power plants to meet the top 1/4 of WANO members.

Power Grid System
A Smart Grid Initiator

- Becoming a domestically indispensable power transmission and distribution operator.
- Establishing a smart power grid and enhancing the power grid with the functions of self-monitoring, self-diagnosing and self-recovering.
- Providing value-added services to customers that enable them to use power more smartly and reach the goal of voluntary power conservation.

Power Sales System
A High-quality Power Provider

- Satisfying customers' multiple power demands.
- Creating various channels to establish interactive communication pathways with customers.
- Enhancing customer-relationship management to upgrade customer satisfaction.
- Reducing duration and frequency of power outages to raise power supply reliability.

Corporate Citizen
A Practitioner of Corporate Social Responsibility

- Focusing on the company's governance and establishing its corporate ethics.
- Cultivating social caring activities and co-existing and co-prospering with the local communities (including organizing voluntary service teams).
- Growing with domestic IPP and co-gen partners and building a platform for exchanging experience in operation and maintenance.

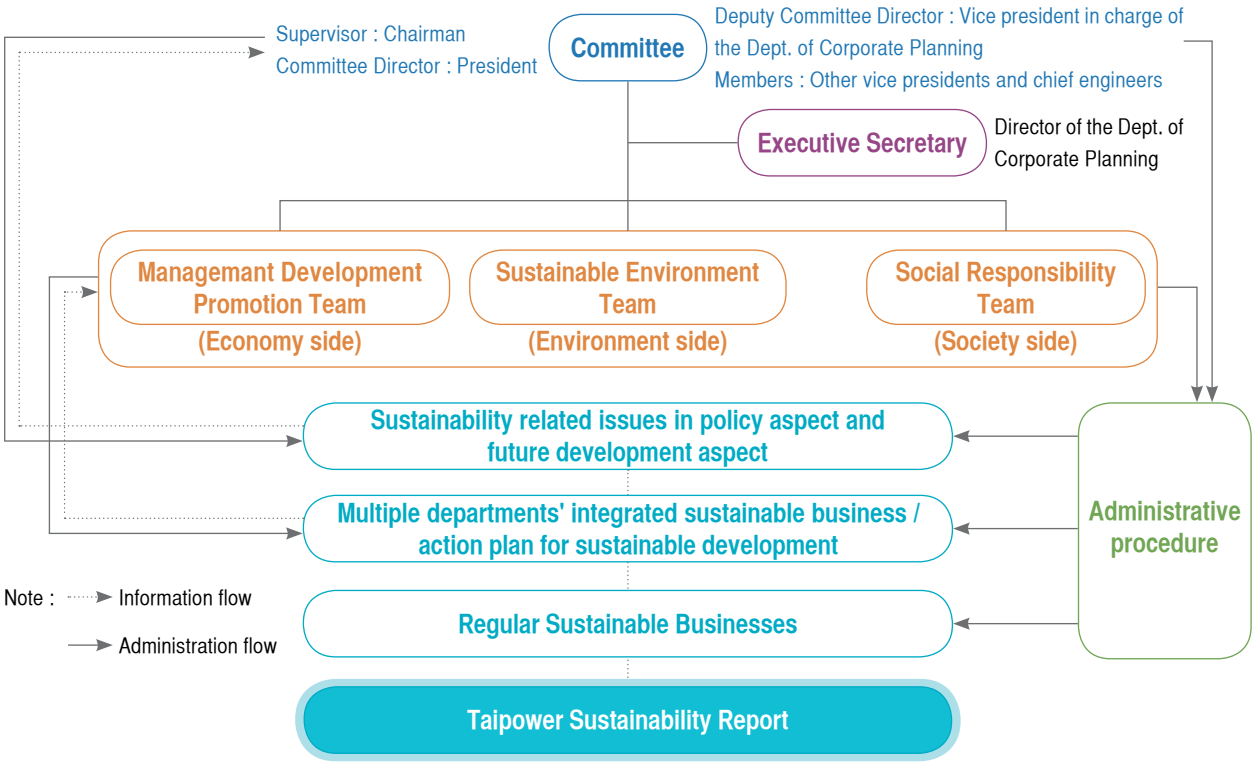
Sustainability Committee and Operational Mechanism

In order to promote business development, safeguard the ecological environment, fulfill our corporate social responsibility, and encourage sustainable development-related work, Taipower set up the Sustainable Development Committee. Its mission and organization chart are as follows :

- Long-term corporate strategic planning and integrated management improvement.
- Environmental protection and ecological maintenance strategic planning.
- Corporate social responsibility strategic planning and promotion.
- The reports on 10-year corporate strategic planning and sustainability.
- Other resolutions and follow-up management and control actions.

The Sustainable Development Committee is comprised of a Management Development Team, a Sustainable Environment Team and a Social Responsibility Team. Each team is chaired by the Vice Presidents in charge of the Corporate Planning, Industrial Safety and Environmental Protection and Public Relations departments, respectively.

Sustainable Development Committee Organization Chart



Regular businesses related to each team will be handled by each team individually based on Taipower's administrative procedures; for businesses involving more than one unit, the convener of the involved teams should convene meetings and handle the matters through administrative procedures based on resolutions made at the meetings. Important matters concerning corporate strategy and future development should be submitted to the Sustainable Development Committee for consideration.

Each team should convene a meeting at least once a year to discuss the revisions of the economic, environmental and social aspects of the Taipower Sustainable Development Action Plan, follow up on the previous year's actions, and propose key issues of sustainability in the Sustainability Report for review by the Sustainable Development Committee.

Key Issues of Sustainability

Electricity is a vital element of economic and industrial development, and an important driving force for sustainable development. Facing the global development trends of high fuel prices, high electrification and low carbon electricity, Taipower initiated the listing of key issues of sustainability in the 2009 Taipower Sustainability Report to highlight and discuss key issues of major relevance to the sustainability of Taipower.

The list of key issues of sustainability was determined by the Taipower Sustainability Committee based on the feedback and suggestions of internal and external stakeholders, taking into account their relevance and significance to Taipower's operations, through comprehensive assessment and discussion among the committee members. Commitments and goals were decided, and the corresponding strategies and action plans developed for the selected issues. As for other sustainability issues, they are presented in the social responsibility and environmental sustainability sections of this report.

2009 Taipower Sustainability Issues Matrix

Notes : The sources of information for the determination of the relevance and importance of issues include :

① relevant laws and regulations ② stakeholders (employees) ③ stakeholders (non-employees)
④ media, Internet information ⑤ international benchmarks

Improving Energy Source Mixture

The ideal ratio for base load (wind, stream hydro, nuclear and coal-fired units), medium load (pondage hydro, oil-fired, gas-fired steam turbine and combined-cycle units) and peak load (pumped storage, reservoir hydro and gas turbine units) energy sources should be 55%~65%, 15%~30% and 10%~15%, respectively. From 2007 to 2009, the base load ratios were 46.3%, 45.6% and 43.4%, respectively, which is far above the ideal figures. In the future, Taipower will continue to develop base load energy sources to reach the ideal energy source mixture.

Commitment

Provide abundant energy sources and balance regional power supply.

Goal

Increase base load capacity to 26,530 MW in 2020, accounting for 51.5% of Taipower system.

Strategy and Action Plan

- In accordance with the government's sustainable energy policy guidelines and under the principle of maintaining 16% reserve capacity, Taipower will strive to develop renewable energy, maintain a proper ratio of gas-fired units, and continue to build new coal-fired units. In addition, in compliance with the government's policy of using nuclear power as an alternate non-carbon energy source, Taipower is planning to add new nuclear units to reduce CO_2 emissions.
- Taipower will continue to implement the retrofit projects in the Shenao, Linkou, and Talin coal-fired power plants and carry out the new Changgong coal-fired project.

2009 Performance Achievements

- The coal-fired units added over the past 11 years include IPP's Mailiao and Heping, and Taipower's Taichung Units 9 & 10, with a total installed capacity of 4,220 MW. They all joined the power system before 2006.
- As there have been no new base load energy sources joined to the power system since 2006, the ratio of base load in 2009 posted the lowest figure in Taipower's history. It is therefore an urgent need for Taipower to add new base load energy sources.

Strengthening Power Grid Structure

To satisfy the high-quality power demand of modern industries, and to supply reliable power to the public, Taipower will continue to implement the Seventh Power Transmission and Substation Project and the Sixth Distribution Project to construct an overall power grid that upgrades power supply quality and reliability. In addition, in line with the continuous innovation of power technologies, Taipower will make efforts to develop a smart power grid, to effectively integrate ① distribuited power sources, ② electric energy management, ③ trading and ④ commercialized service. This will enhance the quality, safety and efficiency of the power grid to enable the customer to use energy more smartly and to reach the goal of voluntary carbon reduction.

Commitment

Satisfy customers' diversified demand, strengthen power grid structure and establish a smart grid, in order to provide the public with stable, reliable, affordable and quality electricity.

Goal

Implement the Seventh Power Transmission and Substation Project, with an investment estimated to be NT$ 238.9 billion over 6 years of constructing and expanding 130 substations, resulting in a total capacity of 23,560 MVA of transmission facilities, and 2,370 ckt-km of transmission lines.

Strategy and Action Plan

- Apply power electronic facilities to stabilize power system operation voltage.
- Promote the use of multi-phase switching and 1+3 protection relay technologies to enhance power supply reliability.
- Adopt high capacity facilities and line material to raise power transmission capacity.
- Strengthen reactive power planning to cope with the greatly increased use of underground cables.
- Adjust the trunk system structure to upgrade the north-central power supply capability.
- Continue to replace protection relay by digital relay to reduce fault clearing time.
- Establish special protection facilities system to improve power supply safety.

2009 Performance Achievements

- The Sixth Power Transmission and Substation Project : The project completed 4,206 ckt-km transmission lines, at an implementation rate of 91.69% and 63,536 MVA of transmission facilities, at an implementation rate 91.77%.
- The Sixth Distribution Project : The project completed 5,403 ckt-km distribution lines, at an implementation rate of 60.18%, and 7,211 MVA of replaced and added transformers, at an implementation rate of 42.9%.
- Advanced Meter Infrastructure (AMI) : The first procurement of smart electronic-type meters passed specification review in 2009.

Developing Renewable Energy

Due to insufficient domestic energy production, Taiwan relies on imported energy to meet 99% of its energy demand. The development of renewable energy can reduce Taiwan's dependence on imported energy, diversify energy sources, improve energy self-sufficiency and reduce CO_2 emissions. Therefore, active development of renewable energy has become a major goal for Taipower.

Commitment

Reduce dependence on imported energy, diversify energy sources, improve energy self-sufficiency and reduce CO_2 emissions.

Goal

- Wind power : install at least 200 wind power turbines or reach a total installed capacity of 300 MW before 2012.
- Solar photovoltaic system : install 10,000 kWp solar photovoltaic system before 2011.

Strategy and Action Plan

- Establish renewable energy power facilities :

  Wind power project: Develop wind power based on the 10-year development plan for wind power.

  Solar photovoltaic project: Cooperate with external parties in establishing solar photovoltaic systems in accordance with the first-phase solar photovoltaic project: Develop Yungan Salt Beach as Taiwan's largest solar photovoltaic system site.
- Research and development of renewable energy :

  Establish long-term cooperation relationships and conduct technology exchange with EPRI of the U.S. and CRIEPI of Japan.

  Jointly develop new power generation technologies, such as hydrogen production and storage, fuel cells and ocean power generation with domestic research institutions.

2009 Performance Achievements

- The government's Renewable Energy Development Guidelines became effective on July 8, 2009. As stipulated by the guidelines, the government will provide reasonable incentives to developers for building renewable energy facilities to encourage the development and adoption of renewable energy. The high cost of building such facilities will be shared by the public.
- The feasibility study for the first-phase of the Chunghwa Offshore Wind Power Project has been completed, and the application for the construction of the wind power plant will be submitted in due time.
- The feasibility study for the 80 kW hybrid OTEC (ocean thermal energy conversion) pilot plant was completed.

Coping with the Challenges of Greenhouse Gas Reduction

Being the primary power provider in the nation, Taipower shoulders great responsibility regarding the issue of greenhouse gas (GHG) reduction for the country as well as for the industry. Taipower faces numerous challenges, including regulations (for GHG reduction) and complementary measures that have yet to pass the legislature, restraints on development of coal-fired and nuclear power for base load, fulfilling power demand while meeting the restrictions of total quality control of CO_2 emissions, and balancing the relationship between the investment in GHG reduction and energy prices. In addition, the domestic CO_2 market scale is unable to satisfy the requirement of the carbon reduction quota. With limited manpower and experience, the task of GHG reduction is even more difficult. Taipower is undertaking a series of measures to deal with this matter.

Commitment

- Before GHG total quantity control :

  Implement Taiwan Power Company GHG Control Strategy.
- After GHG total quantity control :

  Continue to promote GHG reduction strategies, by "adjusting tariff schedules and reducing power demand" and utilizing domestic and foreign carbon credits to reach the carbon reduction goal set by the government.

Goal

Fulfill the carbon reduction goal as stipulated in the "national masterplan on energy conservation and GHG emission reduction." The quantity of emissions in 2020 should be reduced to the level of that in 2005, and in 2025 to the level of that in 2000.

Strategy and Action Plan

- GHG control measures :

  Engage in 8 tasks : ① implement power supply-side management, ② power demand-side management, ③ improve transmission and distribution system, ④ construct a smart power grid, ⑤ conduct R&D for new technologies, ⑥ plant trees for carbon reduction, ⑦ handle, monitor and check GHG reduction and ⑧ utilize carbon credits.
- Action Plan :

  Adopt the best available technology for new generating units, upgrade the average efficiency of the existing thermal units, establish a GHG management system and purchase carbon credit quota.

2009 Performance Achievements

- The program of R&D for CO_2 capture and storage was deployed in cooperation with international organizations.
- Thermal power plant retrofit projects were still delayed by environmental issues. However, thanks to the increasing use of LNG and renewable energy for power generation, the quantity of overall CO_2 emissions showed a downward trend.
- A 30 hectares forestation project at the Army Infantry School in Kaohsiung was completed. There were in total 36,000 trees planted. It is estimated that these trees could absorb 360 tons of CO_2 emissions per year.

Cultivating Electrical Power Professionals

Under the government's manpower streamlining policy, from 1992 to 2009, Taipower's manpower quota was reduced by 20.51% and the number of employees was streamlined by 16.19% (5,202 persons). This led to a severe manpower shortage problem. To solve the issue of aging personnel and aid in the passing on of technologies and experience, since 2005 Taipower has set up plans to annually recruit personnel to cultivate core manpower and strengthen the application of human resources to cope with the transitional period of manpower structure adjustment.

Commitment

Continue to cultivate electric power professionals and promote the passing on of core technologies to cope with the human resource transition.

Goal

Recruit new employees as planned, cultivate professional capacity and strengthen utilization of human resources.

Strategy and Action Plan

Continue to establish learning goals for new employees based on their capacities and assigned tasks; select suitable training departments and develop learning plans; provide long-term consultation based on employees' personal career planning.

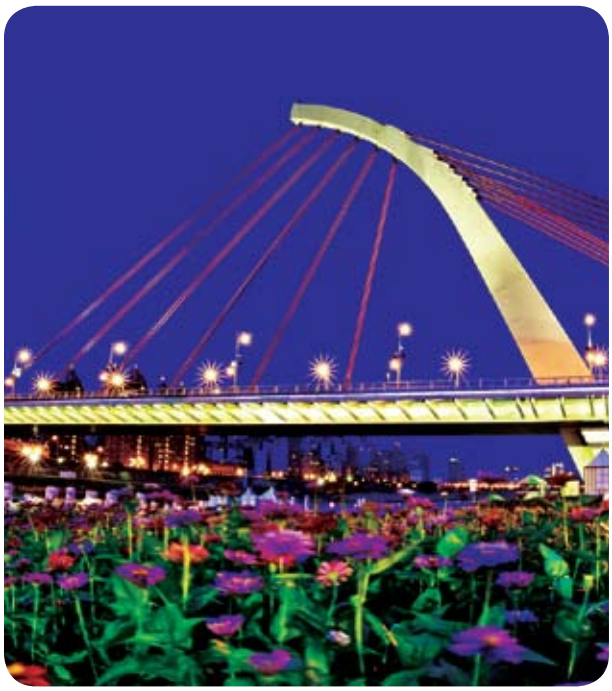
2009 Performance Achievements

- In 2009, the average age of Taipower employees was 48.3 years old; the average year of service was 25.0 years; and 67.31% of employees were older than 45 years old. This is an indication that Taipower employees are mostly in the middle- and senior-age group. In the next decade, 8,489 employees will be retiring, accounting for 31.53% of the current work force.
- In order to cultivate electric power professionals and facilitate the passing on of technologies, Taipower has recently recruited 409 new employees in 14 job categories.

Promoting Reasonable Tariff Schedules

The conclusion of the 2009 Executive Yuan's National Energy Conference was that the prices of energy shall reasonably reflect their costs, and that the costs associated with implementing non-energy policies shall be budgeted by the relevant supervising agencies. For Taipower, the factors affecting tariff schedules include prices of fuels, the ratio of energy source mixture between self-generated and purchased electricity, asset depreciation, interest, operation and maintenance costs, funds paid to the Renewable Energy Fund, and future fuel tax payments and trading cost for carbon credits. These costs may fluctuate depending on the scale of power generation facilities and the external environment.

Commitment	Continue to disclose information related to operations to enhance the public's understanding of Taipower; establish reasonable tariff schedules adjustment mechanism and promote reasonable tariff schedules.
Goal	Tariff rates should reasonably reflect the costs of power supply, encourage customers to make effective use of power through sending out correct pricing signals; Taipower should avoid cross-subsidy of electricity, so that the setting of tariff rates can be effective and fair.



Strategy and Action Plan	A review should be made of current preferential tariff rate measures. Negotiations should be conducted with relevant government agencies. If the direct supervising agency decides to continue these preferential measures, it should set a budget to compensate for the deficiency caused by preferential measures to maintain Taipower's normal operation.

Strengthening Energy Supply Security

Taipower is responsible for supplying electricity to the whole area of Taiwan. In order to maintain the security and stability of the power supply, it is necessary for Taipower to ensure long-term fuel supply security. Owing to the fact that global energy and mineral resources are limited and are difficult to develop, and that energy demand keeps growing in China and India due to their rapid economic growth, the energy supply in the Asia Pacific area is becoming more uncertain.

Commitment

Strengthen energy supply security to ensure a stable fuel supply for power generation.

Goal

Provide fuels to the power plants in the right quality and quantity and at the right time to ensure power supply security and stability.

Strategy and Action Plan

- Adopt proper procurement strategy to ensure fuel supply security and reduce fuel costs.
- Control coal supply security and continue overseas investment in coal mines.
- Establish our own coal fleet, maintain a suitable ratio of coal transported by our own fleet based on the amount needed, to ensure the security of marine coal shipments.
- Conduct natural gas purchase and dispatch through transportation contracts and construct our own natural gas receiving terminal and storage tanks after gaining adequate experience.

2009 Performance Achievements

- Procurement : Fuel coal : 24.56 million tons. Compared with the Asia-Pacific market, the amount reduced was about NT$5,249 million. Fuel oil : 1.4.million kiloliters and diesel oil : 43 thousand kiloliters, the amount reduced was NT$89 million. LNG: 4.5 million tons. Nuclear fuel and dispatch: the amount reduced was NT$2,047 million.
- Strengthen overseas coal mine investment to raise fuel coal supply security.
- Control the weight of coal ships. In addition to the existing two 88,000-ton coal ships, an order was placed to Taiwan Shipbuilding Corp. for constructing four 93,000-ton coal ships. The ships are scheduled for delivery in each quarter in 2011. It is estimated that the self-transportation rate will then reach 28%.

2 Corporate Governance and Economy

Corporate Governance

In addition to strengthening the functions of the Board of Directors and Supervisors and respecting the rights and interests of stakeholders, Taipower has established a comprehensive system to present relevant operation and financial information to the board of directors and shareholders and others. The goal is to enhance the transparency of company information. Relevant mechanisms include:

Strengthening the Functions of Directors and Supervisors

Increasing the functions and effectiveness of the board of directors and establishing an independent director system

According to the company's rules, a meeting of the board of directors (board meeting) is held every month. On the board of directors, there are 2 independent directors, 5 managing directors and 3 functional project review committees to enhance the efficiency and effectiveness of the board meetings.

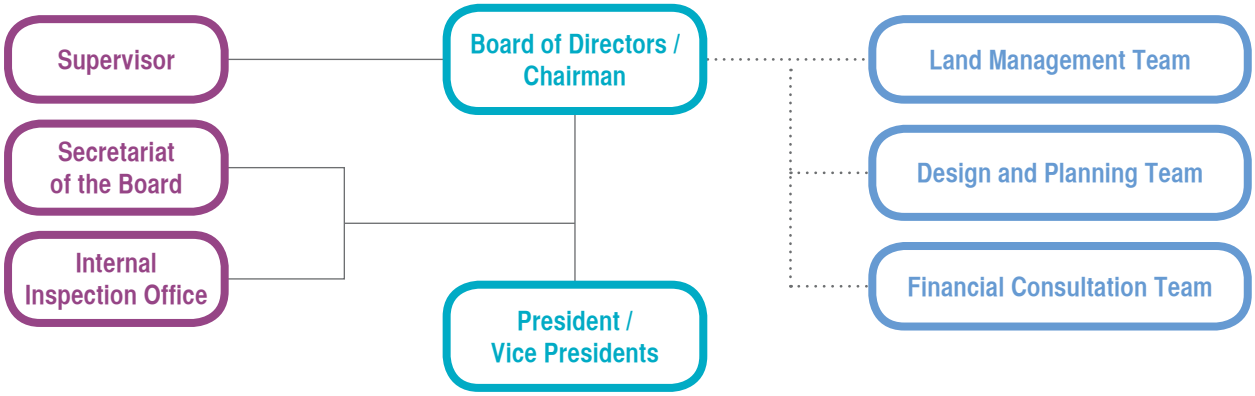
Carrying out the Functions of Supervisors

The functions of supervisors include: attending the board meetings, monitoring the operation of the company, regularly or irregularly checking the company's financial and business conditions, checking reports made by the board of directors and reporting views in shareholders' meetings.

Strengthening the Effectiveness of the Shareholders' Meeting

According to Company Law and the rules of the Ministry of Economic Affairs and Taiwan Power Company, Shareholders' Meetings are held once a year to ensure the rights of the shareholders in the participation and decision-making of all major company affairs. Minutes of the Shareholders' Meetings shall be recorded and posted on a government website and distributed to shareholders. The company shall also disclose relevant information concerning corporate governance based on company rules and relevant regulations.

Organization of the Board of Directors



Improving the Internal Control Structure

- Based on the regulations promulgated by the Financial Supervisory Commission's (FSC) Securities and Futures Bureau and the Ministry of Economic Affairs, Taipower should make timely adjustments in the design and implementation of its internal control system in response to the changes in laws and environment.
- Taipower should implement its own internal auditing operation, and submit an annual report to the FSC. This report should be published in Taipower's annual report and the company's public statement.
- The functions of internal important project auditors and roving auditors should be upgraded to provide timely improvement suggestions and to perform follow-up checks to enable each unit to strengthen internal management and raise management performance.
- Information security (IS) should be undertaken to ensure that each unit is executing IS management properly.

Strengthening the Information Disclosure System

According to the regulations issued by the FSC Securities and Futures Bureau, a public information network should be established. The financial report, internal personal and stock movement, and shareholders' meeting records should be reported monthly. The company's basic information, acquisition or disposal of assets, and corporate debt issuance should also be updated on the network as appropriate.

Risk Management

In 2008, to cope with the rapidly changing internal and external management environment, and to understand and manage the risks involved in its operations, Taipower formulated a risk management implementation plan to serve as the basis for each department to make its own internal risk assessment. In 2009, Taipower implemented its risk management plan for the following 5 items: ① power supply safety and reliability, ② manpower structure improvement and the passing on of technologies, ③ fluctuation of interest rates and exchange rates, ④ work safety and ⑤ information security.

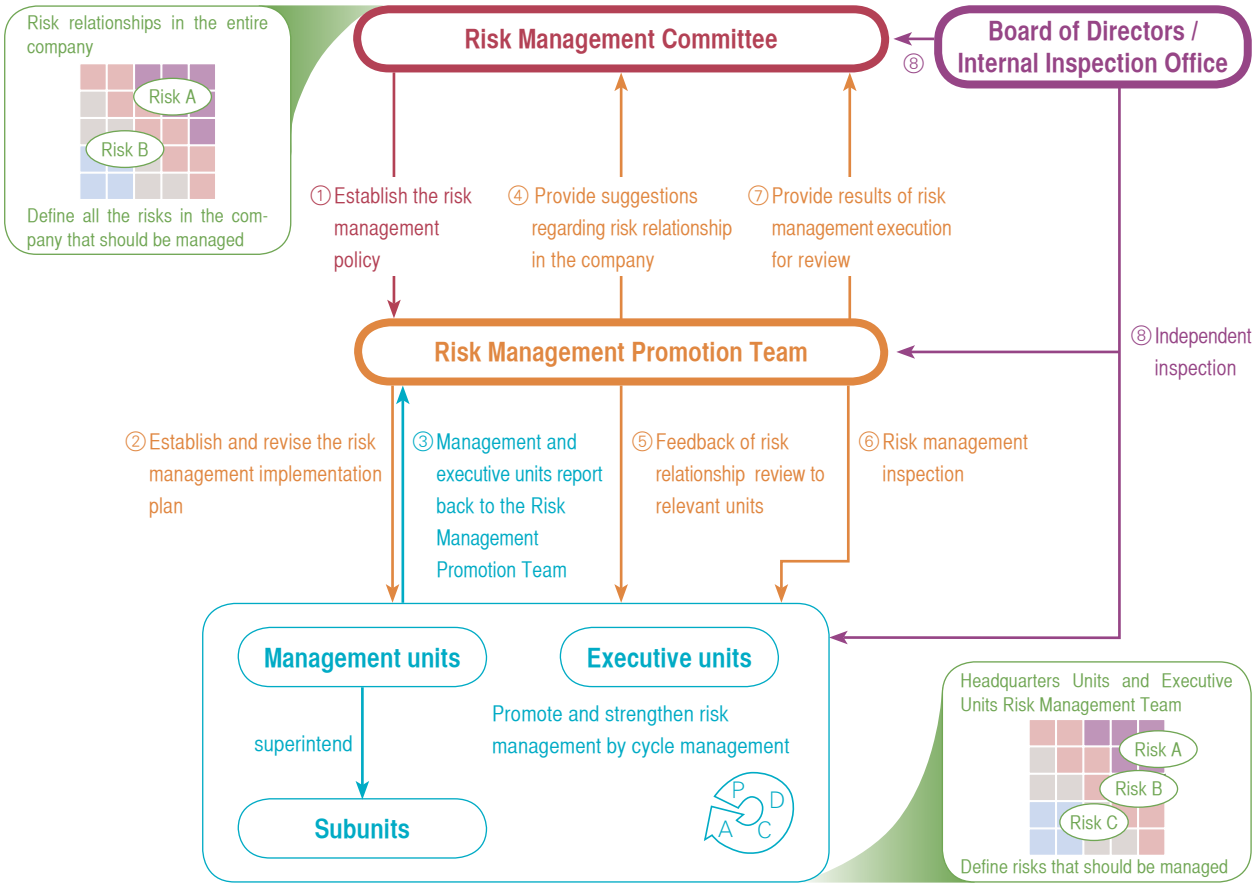
Since being evaluated, all of the above items except "manpower structure improvement and the passing on of technologies," which requires more time to present its achievements, have shown remarkable improvement and fallen under risk tolerance level. This demonstrates that Taipower's efforts in risk management have achieved satisfactory results. Relevant risk control mechanisms have also been incorporated into daily business.

In 2010, Taipower implemented risk management in 21 areas including ① the impact on power supply after the passage of the GHG reduction regulations, ② deterioration of financial structure, ③ rising fossil fuel prices, ④ delay in the implementation of construction projects, ⑤ storage and final disposal of nuclear radwaste, etc. Taipower also officially pledged to promote a comprehensive risk management system to lead the company toward new milestones in risk management.

Sources of Taipower's Operational Risks and Their Potential Impacts

Risk Category	Sources and Explanations	Impacts
Management	GHG emissions, compensation for overhead power lines, deteriorating financial structure, delay in power development and planning, improvement in manpower structure and the passing on of technologies.	• Costs & expenses • Power supply • Financial operations • Revenue and profits • Management performance • Organizational development • Reputation and trust • Legal responsibility • Safety & health • Property loss • Customer satisfaction • Communities or residents • Environment
Corporate ethics	Ethics and integrity of internal employees, such as corruption and malfeasance.	
Market activities	Impacts from international and domestic financial environment, such as fluctuations of interest rates or exchange rates, increase of fossil fuel prices, and changes in power demand, etc.	
Internal process	Problems in each unit's operation process including power supply stability and safety (such as shut down of major power plants, interruption of north-south EHV transmission trunks, power outages in science parks, etc.), delay of construction projects, nuclear radwaste storage and final disposal, work safety incidents, and environmental incidents, etc.	
Information management	Threats to the security of information resources, such as information security.	
Labor-management relationship	Internal employees' communication problems such as labor-management disputes.	
Natural disasters	Impacts from climate change, ecology and diseases, such as natural disasters, contagious diseases, etc.	

Risk Management Operational Flowchart



Development of Electric Power Technology

Facing the pressures of GHG emission reduction and dwindling conventional sources, countries around the world are racing to develop clean energy and carbon reduction technologies. It is their common hope to provide energy for the sustainability of human civilization under the premise of conserving ecology and innovating electric power technologies. Thus, for technology development, Taipower puts emphasis on three aspects: high efficiency, low pollution and low cost - conventional energy clean technology, power grid improvement technology, and non-carbon energy technology :

Conventional Energy Clean Technology

Research Focus	R&D Status
Supercritical and new combined-cycle power generation technology	• Plan to introduce higher efficiency of supercritical coal-fired units and combined-cycle gas-fired units. • Develop our own technology such as evaluation of material life, non-destructive testing, regenerating welding, etc.
Clean coal power generation technology	• Participate in international cooperation projects organized by US EPRI to follow the developing trends and introduce technology at the right time. • Dispatch researchers to the U.S. to learn advanced technology and develop our own gasification simulation technology.
CO_2 capture and storage technology	• Plan to develop our own chemical and biological CO_2 separation technology. • Establish our own assessment capacity for potential CO_2 storage areas. • Participate in MOEA's CCS R&D Alliance and cooperate with relevant organizations to promote domestic CCS technology.

Power Grid Enhancement Technology

Research Focus	R&D Status
Smart grid	• Plan a 20-year (2007-2027) succession of smart grid development milestones to create a high-quality, high-efficiency, customer-oriented, and integrated energy power grid. • Plan to introduce various new power transmission/ distribution technologies and facilities during the implementation of the 7th Power Transmission and Substation Project.
Advanced metering infrastructure	• Plan to complete installation of automatic metering devices for high-voltage customers before 2012 (about 23,000 customers, about 58% of total power consumption). • Decide upon installation method and scope for cost-effective assessment for low-voltage customers.

Non-Carbon Energy Technology

Research Focus	R&D Status
Nuclear power generation	• Completed MUR (measurement uncertainty recapture) Projects in 3 nuclear power plants. • Continue to enhance nuclear safety and improve reliability of facilities.
Solar photovoltaic power generation	• Completed a feasibility study for the First Phase of Solar Photovoltaic Project. • Plan to introduce a concentrated solar photovoltaic system which has high conversion efficiency and is suitable for large-scale power generation.
Wind power generation	• Completed feasibility study for the First Phase of Changhwa Offshore Wind Power Project in 2009. • Develop our own wind power energy forecast and management technology.
New energy power generation	• Establish residential and community fuel cell application technology. • Conduct manufacturing process R&D for key components of hydrogen energy and fuel cells.

Cultivation of Talent

Taipower regards its employees as the most important asset of the company and emphasizes cultivation of talent. In addition to having complete welfare and pay systems and following the government's labor regulations, Taipower continuously provides training courses to satisfy employees'needs of self-promotion and increase the competitiveness of the company in the power market.

Recruiting and Training New Employees

As of the end of 2009, Taipower had a total of 26,921 employees. In order to avoid a manpower gap and to pass on technologies and experience, Taipower hired 409 new employees in 14 categories in 2009. Each unit set up their learning goals for to-be-assigned jobs and selected proper sectors for probation. In addition, according to their career planning, the company provided them with long-term training and assistance. Under this system of talent cultivation, the employees who partake in multiple training programs will grow with the company's business.

Establishing Knowledge Communities

Since the implementation of knowledge management in 2003, Taipower has established 3 knowledge platforms: Taipower blogs, quick place, and Taipower think tank. Content on these platforms includes: personal work logs, 109 quick places, 237 knowledge communities, 7,587 knowledge experts and 14,517 knowledge documents.

In 2009, in order to expand knowledge communities, interactive forums were established on the Taipower Think Tank to collect information from message boards and meetings. This information was then organized and classified and placed in the database to become a part of company knowledge. In addition, a monthly hot discussion topic was planned, such as low-carbon homeland and energy education. The Knowledge Management Newsletter is sent out through e-mail in a timely manner to encourage the employees to read and join in the discussion.

Continuing On-the-Job Training

To strengthen employees' competitiveness, promote manpower resource development and enhance management performance, Taipower undertook the following local and overseas training programs in 2009: 53,307 employees participated in on-the-job and off-the-job training; 29 went for overseas research, 90 for overseas study, and 12 studied for master's and doctorate degrees.

To cope with the impact of the future privatization of Taipower and liberalization of the power industry, retraining programs were held to cultivate employees' secondary professional specialties. In 2009, there were 312 participants. Taipower helped 1,909 employees to obtain various professional licenses.

Establishing Taipower E-Learning School

Riding the wave of the knowledge economy, Taipower plans to continue promoting the lifelong learning concept and integrating resources, such as various practical training and Taipower internal E-Learning School (ELS), to form a learning-type organization to strengthen employee competitiveness. In 2009, Taipower ELS offered 464 on-line courses and opened outside learning websites to provide employees an environment of unlimited time and space in which to conduct voluntary on-line learning. In 2009, the average number of hours spent reading per employee on ELS was 7.3 hours. The average number of on-line reading hours per employee was 52.26 hours. These two figures were higher than the target hours.

Strengthening Corporate Ethics and Work Discipline

Corporate ethics and corporate image are closely related. A company won't become prestigious without discipline. As a state-owned pubic utility, Taipower should strive for society's support for its power construction and win the trust of its customers for its management activities. Therefore, having a good corporate image is significant for the company's sustainable management.

Setting Examples by Executives to Shape a High Quality Culture

Executives should set examples of integrity and self-discipline to bring about a good climate for their units. An ideal corporate culture will thus take shape in the company. By awarding integrity, the employees' loyalty, responsibility, pride, etc. will be enhanced.

Operating in Accordance with the Law and Adhering to Moral Integrity

The company should strengthen the law and ethical advocacy, establish a law-abiding spirit among its staff, and uphold business administration according to the principles of law.

Enhancing Work Discipline and Upgrading the Company's Corporate Image

Working discipline and the record of rewards and punishments should be taken into cosideration when conducting employees' work evaluation, promotion, training and rotation. This can cultivate good working discipline and enhance the company's corporate image.

Strengthening Corporate Governance to Gain Public Trust

Taipower has been actively strengthening the company's governance by disclosing company information, strengthening the functions of the board of directors, thoroughly promoting the functions of supervisors, and respecting the rights and interests of stakeholders.

2009 Management Performance Achievements

In 2009, international fuel prices declined moderately, but remained higher than the corresponding fuel costs, when tariff schednles were adjusted on Oct. 1, 2008. Complying with the government's policy, Taipower carried out various power consumption preferential measures such as expanding the practice of tariff schedules discount incentive measures and reducing summer months tariff schedules by one moth, etc. These caused a loss of NT$12,200 million in Taipower's energy sales. Although Taipower reinforced the measure of "expanding income sources and reducing expenditure", in 2009 the deficit before income tax (pre-tax) was NT$1,480 million, much lower than the previous year. The 2009 key performance indicators and 2007-2009 operation performance achievements are listed below:

Financial Performance

Unit: NT$ million

Item \ Year	2007	2008	2009
Operating revenues	408,742	437,031	473,959
Operating costs	417,840	512,918	453,062
Operating expenses	10,788	10,287	10,788
Other income	4,913	6,166	6,814
Other expenses	16,102	20,888	18,404
Income before income tax (Pre-tax income)	-31,075	-100,896	-1,481
Income after income tax(After-tax income)	-23,132	-75,220	-13,411

Key Performance Indicators

Taipower devised its key performance indicators (KPI) according to the company's vision, management strategies, current major business directions, important points of government's policies and evaluation, and other world-class prestigious companies' performance indicators. The four-perspective spirit of the Balanced Scorecard was adopted in formulating KPIs.

Key Performance Indicators in 2009

Item \ Year	2008 Actual	2009 Target	2009 Actual	Accomplishment
1. Pre-tax Income(in million NT$)	-100,896	≧-35,782	-1,481	☺
2. Operating & Maintenance (O&M) Cost Control				
(1) Power generation O&M cost control (NT$ cent/KWh)	22.99	≦24.95	22.17	☺
(2) Power supply O&M cost control (NT $ cent/KWh)	15.48	≦16.58	15.75	☺
3. Fuel Purchase Performance				
(1) Coal purchase performance (%)	8.95	≦-5.96	-9.84	☺
(2) Uranium fuel material purchase performance (%)	-13.13	≦-11.62	-12.12	☺
4. Power Purchase Expenditure Control				
(1) coal-fired power plants (NT$/KWh)	1.67	≦2.52	2.53	☹
(2) gas-fired power plants (NT$/KWh)	3.85	≦3.36	3.31	☺
(3) co-gen large units (NT$/KWh)	1.81	≦2.38	2.55	☹
5. Line Loss (%)	4.58	≦4.74	4.86	☹
6. Customer Satisfaction Scores	86.3	≧85.9	86.0	☺
7. Power Supply Reliability				
(1) SAIDI (min./cus.·year)	20.810	≦21.65	19.246	☺
(2) SAIFI (freq./cus.·year)	0.354	≦0.33	0.238	☺
8. Industrial Safety Performance				
Total injury index	8.74	≦8.62	6.17	☺
9. Nuclear Safety Performance				
Number of nuclear system trips (freq./unit)	2	≦1	1	☺
10.Environmental Performance				
(1) PM emissions (kg/GWh)	21	≦33	17	☺
(2) SO_X emissions (kg/GWh)	292	≦355	237	☺
(3) NO_X emissions (kg/GWh)	279	≦340	253	☺
(4) Greenhouse gas control (g/KWh)	537	≦563	513	☺
(5) Tree planting (m^2)	173,300	≧180,000	356,000	☺
11.Renewable Energy Development				
(1) Wind turbines installed (MW)	48	≧12	20	☺
(2) Wind turbine permit acquired (MW)	40	≧5	5	☺
12.Energy Conservation				
(1) Reduce units heat rate, increase efficiency (Kcal/KWh)	2,310	≦2,289	2,292	☹
(2) Self-used electricity reduction (GWh)	13,197	≧9,442	13,562	☺
13.Capital Expenditure Implementation Rate (%)	92.25	≧95	96.45	☺
14.Innovation				
(1) No. of employee proposals	6,004	≧4,658	5,870	☺
(2) Average training hours of employees per year (hr./employee)	48.96	≧40	52.26	☺
15.Research and Development				
(1) Increase income (1,000 NT$)	150,450	≧36,500	39,300	☺
(2) Decrease cost (1,000 NT$)	1,122,927	≧1,316,840	1,348,770	☺

Note: ☺ represents objectives achieved; ☹ represents objectives not achieved.

Management Performance over the Past 3 Years

In recent years, the impact of the global financial crisis, the effectiveness of the government's policy of "energy conservation and carbon reduction" and Taipower's energy saving measures through "expanding the tariff schedules discount incentives" has led to a decline in power sales over the past two years. Nevertheless, through the concerted efforts of its employees, Taipower still demonstrated various remarkable achievements in its management performance.

Production and Sales

Item \ Year	2007	2008	2009	Notes
Total Production (GWh)	201,856	200,241	193,605	A decrease of 6,636 GWh (-3.3%) over the previous year; of which Taipower generation was reduced by 7.2%, while purchased power was increased by 9.9%.
(1) Generated by Taipower (GWh)	153,475	154,544	143,361	
(2) Purchased (GWh)	48,381	45,697	50,244	
Energy Sales (GWh)	187,075	186,931	179,239	A growth of - 4.1% from the year 2008.
Peak load (MW)	3,279	3,132	3,101	A growth of -1.0% from the year 2008.
Customers (thousand)	11,985	12,226	12,415	The number of customers increased by 189 thousand.

Employees' Productivity

Item \ Year	2007	2008	2009	Notes
Number of employees	26,047	26,584	26,921	In order to solve the problems of an aging workforce and the talent gap, recruitment of new employees was continued. However, the total number of employees is still 5,202 less than the peak number of 32,123 in 1992.
Employee productivity				
(1) Production per employee (MWh)	7,098	7,117	6,420	A decrease of 697 MWh as compared with 2008.
(2) Sales per employee (MWh)	8,652	8,608	8,027	A decrease of 581 MWh as compared with 2008 (owing to the decrease of power sales in 2009).
(3) Revenue per employee (in thousands of NT$)	18,903	20,125	21,225	A increase of NT$1.1 million, and a growth rate of 5.5%.

Power Supply Quality

Item \ Year	2007	2008	2009	Notes
Line loss (%)	4.75	4.58	4.86	Higher than 2007 & 2008, due to consideration for economical dispatching.
Power supply reliability				
(1)SAIFI (freq./cus.·year)	0.333	0.354	0.238	The best record in recent years. A decrease of 1.702 freq./cus.·yr., greatly lower than 1.94 freq./cus.·yr. in 1992.
a. Scheduled Outage	0.095	0.080	0.066	
b. Forced Outage	0.238	0.274	0.172	
(2)SAIDI(min./cus.·year)	23.909	20.810	19.246	The best record in recent years. A decrease of 158.874 min./cus.·yr. greatly lower than 178.120 min./cus.·yr. in 1992.
a. Scheduled Outage	18.275	15.197	14.164	
b. Forced Outage	5.634	5.613	5.082	

Operation Performance

Item \ Year	2007	2008	2009	Notes
Thermal Power Plant Net Efficiency (%)	36.95	37.23	37.53	The best record in recent years.
Thermal Power Plant Incidents (freq./unit)	0.76	0.70	0.38	The best record in recent years.
Nuclear Power Plants Generation (GWh)	38,961	39,260	39,981	The highest record in Taipower's history. The depreciation of nuclear units were nearly completed, which effectively reduced total generation cost.
Nuclear Power Plants Scram (freq./unit)	0.33	0.33	0.17	The figure is the same as that of 2004 - the best record in Taipower's history.

Communication between Taipower and Stakeholders

In 2009, Taipower held three meetings to discuss the preparation of Taipower's sustainability report. Experts from the BCSD-Taiwan, National Taipei University of Technology and the National Council for Sustainable Development Network were invited to attend these meetings to present their views on three issues: ① corporate sustainable development and reports, ② views of external stakeholders, and ③ development of the power industry in this time of crisis. In addition to providing each unit with the experts' suggestions for its consideration on sustainability issues, Taipower used them as a foundation for judgment and discussion on various sustainability issues.

2009 Participation Status of Taipower's Stakeholders

Issue	Stakeholder	Communication Interface	Results
Sustainability report	• Users outside the company • Taipower management and employees	• Education & training • Discussion meetings • National Council for Sustainable Development • Establishment of an exclusive webpage	• Taipower's key sustainability issues and sustainability report(p.12)
Consumer requirements	• Customers • Consumers	• Direct communication • Customers' mailboxes • Website responses • E-mail service • Customer satisfaction survey	• Customer service quality enhancement (p.35)
Promotion the concept of energy conservation and carbon reduction for power consumption	• The public • Industries • Schools	• Mothers' classrooms, social group promotion meetings, large customer promotion seminars, power consumption knowledge classes, repair and maintenance of in-house electric equipment classes, energy conservation promotion in schools, and energy conservation seminars, etc.	• Achievements of energy conservation (p.63)
Assistance in power consumption reduction	• The public • Communities	• Low-carbon exhibition held in Taipei county • Energy conservation service team	• Establishment of the Taipower Energy Science & Technology Museum for the public (p.43) • Free energy saving consultation and diagnosis services to communities(p.35)
Social care	• Disadvantaged groups/ individuals, underprivileged students	• Relevant donations & social investment projects	• Community caring activities and community charitable construction projects (p.42)
Technical exchange within the power industries	• Power companies • Industrial groups	• Technology seminars & exhibition • AESIEAP	• Participation in 2009 Taipei International Invention & Technology Trade Show, showcased 15 technical products in three categories: power facilities material, power monitoring control, and new technologies for power generation and energy.
Relief and repair for the damage caused by Typhoon Morakot	• Affected people	• Call centers • 1911 power outage repair hotline	• Taipower's Typhoon Morakot emergency repairs & relief efforts (p.39)

3 Social Responsibility

Social Responsibility

A safe and stable power supply is the key to the development of our nation and the economy. Other than providing electricity, Taipower also works to promote industrial and social progress while taking into account the needs of stakeholders.

Serving Customers with Care

Serving customers is Taipower's management philosophy. To provide comprehensive and real-time services, Taipower has established 24 branches, 24 service centers, 279 service offices and 2 call centers nationwide.

Protecting Consumer Rights and Interests

To be in line with the spirit of the Consumer Protection Act, Taipower formulated a "power consumption service agreement" to help customers better understand the obligations and rights of both sides and to thoroughly protect customer rights.

Real-Time and Transparent Information

Each year Taipower publishes the Taipower Customer Service White Paper to show our commitment to integrity, caring, innovation and service. It can be downloaded at "http://www.taipower.com.tw/"

The Taipower Website also provides useful information for customers, such as electricity and life, electricity library, service locations, customer service information, tariff schedules, information relating to electromagnetic fields, and website counter services.

Process of Complaints

To help new customers feel satisfied and long-term customers feel impressed with the improvement of the company, Taipower worked hard in the area of customer complaints. Through a customer complaints management system, Taipower compiled and classified customers' suggestions as an important reference for future business improvement.

Handling of Customer Complaints

Year	No. of complaints
2008	2,985
2009	3,056

In 2009, 3,056 complaints were recorded, of which 2,019 were received via e-mail. Most complaints related to areas such as lines relocation (704 cases, 23.0%), bill collections (405 cases, 13.3%), and power supply quality (386 cases, 12.6%)

If customers have any questions regarding applications, bill collections, power outage incidents, rights and interests and other relevant questions, they can call the toll-free number 1911, contact branch offices' service centers or service offices and/or use Taipower's website customer suggestion box (service@.taipower.com.tw) to ask for assistance.

Information System Security

Maintaining information security (IS) is the company's responsibility and obligation. To deal with the increasingly rampant hackers' activities, and to prevent them from illegally tampering with Taipower's customers, in addition to periodically reviewing IS policies and performing on-site checks on each unit, the ISO 27001 IS System was also introduced. In 2009, 10 units passed the system's certification.

To enhance employee's awareness of the IS, Taipower promotes the concept of "information security, everybody's responsibility" through the IS electronic newsletter. Furthermore, drills on a continuous operation plan are periodically held every year to strengthen each unit's responses to IS events.

To cope with the possibility of an information year malfunction (2011 equals to ROC Mingkuo year 100), Taipower began to implement a response plan in 2007. In 2009, all of the program revision tasks were completed. The testing work will be complete in the first half of 2010 and officially begin operation in the second half of 2010 to ensure that the operation of all facilities and information system are flawless.

Confidentiality of Customer Information

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

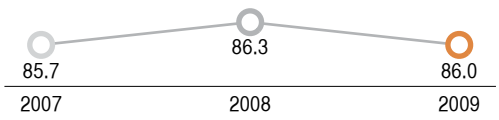
Employees	Contractors	Public
Raising awareness of information security and confidentiality through guidance and training.	Signing a Data Access Security Agreement with contractors and a Statement of Information Confidentiality with employees of contractors to ensure the company's information security.	Inputing customers' detailed personal information for their applications, inquiries and bill payments to ensure customer information security.

Customer Satisfaction

Satisfaction of customers is important to Taipower. We target three levels of customers: regular customers, medium customers (100-1,000 KW) and large customers (more than 1,000 KW) and we perform telephone survey regularly.

According to one survey, the overall customer satisfaction rate has remained over 85 scores in the past 3 years. But Taipower refuses to be content, instead striving to provide better service. In the future, Taipower will continue to review and improve various ways of providing convenient service to the customer and strengthen the communication with the customer as well.

Customer Satisfaction Scores in the Past 3 Years



Continue Research into Ways to Reduce Inconvenience

To upgrade environmental effectiveness, in 2009, in addition to promoting the improvement of existing distribution facilities and developing new-style facilities, Taipower communicated and negotiated with customers to actively improve the distribution facilities that brought inconvenience to traffic and pedestrians.

If the power cannot be reconnected on time due to problems with facility installation, Taipower should inform the customer honestly and look for ways to resolve it. Taipower is committed to providing high-quality power.

In order to reduce the inconvenience caused by power outages, Taipower strengthened maintenance inspection to reduce incidents and promoted feeder automation projects and improved distribution system to upgrade power supply quality. Efforts were made to implement maintenance and renewal of distribution lines to reduce the frequency and duration of power outages.

Upgrading Customer Service Quality

Taipower listened attentively to customers in order to fulfill their requirements and provide them with fast and convenient service. In Taiwan and the offshore islets of Penghu, Kinmen and Matsu, Taipower has 24 branches, 24 service centers, 279 service offices and 2 call centers, creating a complete service network and providing multiple services to our customers.

In order to immediately understand the customers' opinions of our services, a customer satisfaction questionnaire was posted on Taipower's Website. A "satisfaction survey form" was provided in branch's service centers. The survey results serve as a reference for improvement. Based on the "customer first" concept, Taipower cares about customers' needs all the time.

Community Energy Conservation Service Team

"With a little change in the attitude of your daily life, you can achieve remarkable energy conservation results." Taipower expects to start from individuals, families and communities to expand its energy conservation campaigns to every corner of the society to jointly achieve the national overall goal of energy conservation and carbon reduction.

To assist the public in the fight against global warming and energy shortage problems, in 2009 Taipower took the initiative to promote the "community energy conservation service team" action plan. Taipower gathered experts from different fields to officially establish the team. It went out to communities to instruct them in the techniques and methods of energy conservation. This practice also enabled the public to have correct energy conservation concepts and techniques.

There were 3 "community energy conservation service teams" created - north, central and south. They went to 360 communities to offer consultation and diagnosis for energy conservation. In addition to educating community residents about correct energy conservation techniques, they introduced them to high-efficiency power saving products and cultivated "energy conservation seeds" to continue promoting energy conservation knowledge.

In 2009, this campaign obtained great response and recognition from the community residents. Besides the direct effectiveness of tariff rate reduction, this also demonstrated Taipower's sincerity in caring for its customers.

E-Application Channels and Thoughtful Customer Service

To facilitate customer's various application processes, except for those submitted via telephone and mailing, Taipower provides multiple choices for customers. Customers can send in their applications and download forms through the Taipower Website. Currently there are 34 application items that can be handled by this Website. Furthermore, to cope with the requirements of the internet era, Taipower originated an e-mail service for high-voltage customers. Presently, over 90% of the high-voltage customers are using this service. The service content will be expanded according to customer needs.

Call Center and Multiple Bill Payment Service

Taipower has 12.41 million customers. To meet customers' demands, a call center system was installed in northern and central Taiwan. The telephone no. of the Call Center is 1911, offering 24-hour service including applications, tariff rates, power line repair and maintenance, complaints, etc. For rapid and convenient bill payment, in addition to service units, Taipower also provides multiple channels for customers to pay power bills, such as financial institutions, post offices, and convenience stores.

E-Bill Service System

To provide better service to its customers, Taipower has expanded its "e-bill" service: Customers only have to register on Taipower's Website. They can then view detailed information on power consumption and power bills for the current month and the most recent 12 months, download bill invoices, power consumption analysis diagrams , etc. Consumers can pay bills on-line through cooperating financial institutions and request e-mail delivery of monthly bills in PDF format. Due to the convenience of such online services, as of the end of 2009, 294,874 customers have chosen to use Taipower's e-bill service system.

Special Customer Service

To establish means of direct communication with its customers, Taipower continued offering special customer service. The designated Taipower employees will periodically and actively visit high voltage customers and village offices to understand their needs, provide them with technical consultation, and solve their problems. This is an attempt to win the customer's support and trust.

Year	No. of special customer visits
2008	90,927
2009	74,370

Customer Opinion Box

Taipower's e-mail inbox on the corporate website provides a channel for customers to express opinions through the Taipower website. All suggestions are collected by the responsible department, which then sends the suggestions out to related units for reply. The suggestions are compiled, analyzed, controlled and followed up. In 2008, 5,813 e-mails were processed, and the number increased to 7,166 in 2009. This e-mail system has become an important communication channel between Taipower and its customers.

Year	No. of Suggestions
2007	5,093
2008	5,813
2009	7,166

Ensuring a Stable Power Supply

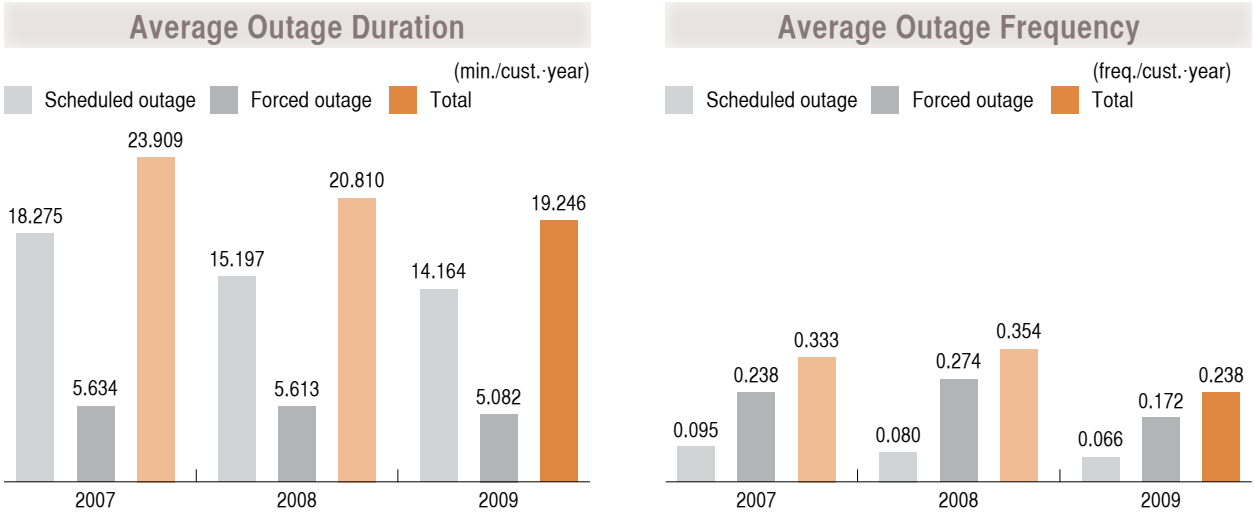
A stable power supply is necessary for the development of our nation's industry and the public's lifestyle that requires electrification. In addition to adopting international power supply reliability measurement SAIDI (system average interruption duration index) and SAIFI (system average interruption frequency index) to evaluate its power supply operation performance, Taipower promotes a total quality management system. Through activities such as employees' suggestions and project improvements, Taipower has actually enhanced its power supply quality and fulfilled its mission and met the public's expectation of a stable power quality.

Reducing Scheduled and Forced Power Outage Frequency and Duration

In order to ensure the stability of its power supply, and reduce the frequency and duration of scheduled and forced power outages, Taipower has established power supply reliability targets for its three major operation systems (generation, transmission and distribution) and conducted periodical assessments of power supply performance to ensure that the reliability of power supply meets the expected level.

Under the campaigns of implementing facility maintenance and promoting project improvements, since 2007, scheduled and forced power outage duration and frequency have been gradually decreased year after year. In 2009, the average outage duration was lower than 20 min., which is the best record in Taipower's history. This proved that Taipower's efforts to reduce power outage duration and frequency have led to its remarkable achievement in power supply stability.

Power Supply Reliability Indicators



Constructing the Power Grid

In order to upgrade the transmission and distribution efficiency in the power grid and enhance power supply quality and reliability, Taipower has planned the 7th Power Transmission and Substation Project (2010-2015) to be implemented after the completion of the 6th Power Transmission and Substation Project in 2009. It is scheduled to complete 130 new and expanded substations, a total capacity of 23,560 MVA and a total length of 2,370 ckt-km transmission lines. The 6th Power Distribution Project (2008-2011) plans to install 8,972 ckt-km distribution lines, and a transformer capacity of 10,529 MVA. Construction of the power grid will be reinforced continuously to ensure power supply safety.

Guaranteeing Power Supply in High-Tech Science Parks

High-tech science parks are essential to the economy and the competitiveness of our nation. In order to provide the high-tech industry with a stable power supply for their development, Taipower established the High-Tech Industrial Parks Power Supply Quality Management and Improvement Task Force. In addition, power outages and sudden drops in voltage in the three major science parks (Hsinchu, Central and Southern) have been listed as important items in the company's evaluation and auditing programs. Furthermore, the company conducts regular follow-ups and reviews on the subject areas in an attempt to continuously enhance power supply stability and quality to help the science parks maintain stable management and development.

Goals and Action Plans of the High-tech Industrial Parks Power Quality Management and Improvement Task Force

Goals	Action Plans	
	Maintenance aspect	Operation aspect

• Transmission system
  • power outage incident ≦ 1
  • C zone sudden voltage drop ≦ 9
• Distribution system
  • power outage incident ≦ 9
  • C zone sudden voltage drop ≦ 6
	• Enhance equipment maintenance and inspection.
	• Conduct transmission/ distribution system safety inspection.
	• Develop power outage incident response program.
	• Apply external diagnosis technology to conduct system inspection during transmission for early detection of abnormalcy.
		• Strengthen communication mechanism and emergency reporting system.
		• Adopting double check and verification system for equipment operation to prevent human error & negligence.

Cleaning Silt and Maintaining the Safety of Reservoirs

Taiwan is a populous small island with steep terrain and frequent earthquakes, thus whenever there is a typhoon or downpour, the resulting mudslides often worsen the sedimentation problems of reservoirs.

At present, there are 20 reservoirs in Taiwan under the management of Taipower. In order to reduce the influence brought by sedimentation, Taipower has been conducting reservoir silt removal, as well as inspecting and monitoring the safety of the dams. Through these measures, Taipower hopes to maintain the safety of the dams and reservoirs, reduce the risks to downstream residents, and shoulder its social responsibility for disaster prevention and reduction, and for the sustainable use of water resources.

In 2009, a total of 760,000 m^3 of silt were removed from the reservoirs, which effectively increased the capacity of the reservoirs.

Repairing the Damage – Typhoon Morakot Flood Area

Repairing and Restoring Power Supply

Typhoon Morakot hit Taiwan on August 8, 2009 with super strong winds and record rainfalls, causing widespread damage in central, southern and eastern Taiwan. Due to the mudslides triggered by the heavy rains in the mountain areas, five Taipower transmission towers collapsed, which led to 1.59 million customers suffering a power outage.

In order to quickly restore power supply, as the roads were destroyed and inaccessible, Taipower sent in helicopters to mountain disaster areas to inspect the damage to transmission lines, quickly determining the repair priorities and setting up a reconstruction plan. Disaster survey teams were also dispatched by Taipower to inspect disaster areas on foot, and reported back information for arranging the next day's repair plan.

In areas that vehicles couldn't reach, Taipower dispatched unmanned remote control aerial vehicles to install temporary power lines for power supply. Helicopters were used to transport repair equipment to designated areas for manual delivery to areas needing repairs.

Taipower rescue personnel overcame numerous difficulties and cooperated in every way to fulfill their mission. The power supply was restored to 99% within 3 days.

In addition, the repair work on the Alishan Mountain transmission lines, the Tsengwen Reservoir external transmission lines and the Mudan Reservoir were completed ahead of schedule. These helped tea farmers to avoid suffering great losses and ensured that the reservoir could conduct flood discharges at the right time. The goals of maintaining water supply to the people and protecting people lives, assets and safety were therefore reached.

Rendering Assistance in Disaster Relief

The staff of the Third Nuclear Power Plant offered a helping hand to solve the power shortage problem in Hengchun Town.

Owing to the extremely high turbidity in the water intake of the Mudan Reservoir, the fresh water supply of Hengchun Town was shut down on August 8,2009. As the Third Nuclear Power Plant has seawater desalination facilities, staff offered to provide local residents with fresh water using the plant's large fire engines. Fire engines from the Hengchun Fire Department, Taiwan Water Company and the military were also dispatched to this power plant to transport freshwater to hospitals, residences, and organizations. A total of 1,531.5 tones of freshwater were supplied by Taipower. This assistance helped solve the water shortage problem in Hengchun Town.

Offering Donations

Taipower employees donated over NT$37 million to the disaster relief effort.

Delivering Relief Materials Directly to Disaster Areas

Numerous homes and properties were destroyed by Typhoon Morakot. In the disaster areas, many residents suddenly lost their homes, belongings or even loved ones. During this period, in addition to engaging in repair work, Taipower also purchased and delivered people's daily necessities to the disaster areas, such as mineral water, canned food, cookies, toilet paper, etc., through Taipower's 7 branches (Pingtung, Taitung, Fengshan, Tainan, Chiayi, Nantou and Xinying) via either company vehicles or helicopters. More than NT$2.32 million worth of emergency supplies were donated and delivered by Taipower.

Offering Preferential Tariff Schedules to Disaster Victims

Caring for the residents who suffered damages caused by Typhoon Morakot, Taipower offered them preferential tariff schedules to help them rebuild their homeland.

Discount Rates for Disaster-Affected Residents

After Typhoon Morakot devastated central and southern Taiwan, Taipower immediately offered discount tariff rates to those who were affected by the typhoon.

Category	Preferential Measures	Period
Residential Power Consumption	• Free tariff rates up to 110 KWh per month for houses flooded over 50cm in height.	Aug.8 to Oct.7, 2009.
	• Free tariff rates for all emergency shelters until the mission is completed.	Aug.8 till the shelter mission is completed.
	• For residents of temporary housing areas, free monthly tariff rates up to 330 KWh during summer months and 110 KWh during non-summer months. • Free transmission line surcharges for temporary housing units or new houses built by affected residents while applying for power service.	Aug.8,2009 to Aug.7, 2011
	• Free tariff rates for customers with overdue accounts whose homes have been deemed non-livable after the Morakot disaster. • No overdue tariff rates charged to affected residents before the end of October 2009.	Ongoing

Preferential Tariff Rates for Affected Residents in Jiadong & Linbian Towns of Pingtung County

Typhoon Morakot caused severe flooding in the towns of Linbian and Jiadong in Pingtung County. In order to help residents of these two towns clean up their homelands and remove silt from and recover their fish farms, Taipower also offered the following preferential tariff rates:

Category	Preferential Measures
Residential Power Consumption	• Free tariff rates up to 110 kWh per month from Aug.8 to Sept.7, 2009. for houses flooded over 50 cm height. • Free tariff rates up to 240 KWh per month from Sept.8 to Oct.7 2009 .
Fish Farm Power Consumption	• Reducing tariff rates by 50% for the month of Aug. 2009. • Free basic tariff rates, if the power load is below 30% during fish farm recovery period before Feb. 2010.

Results

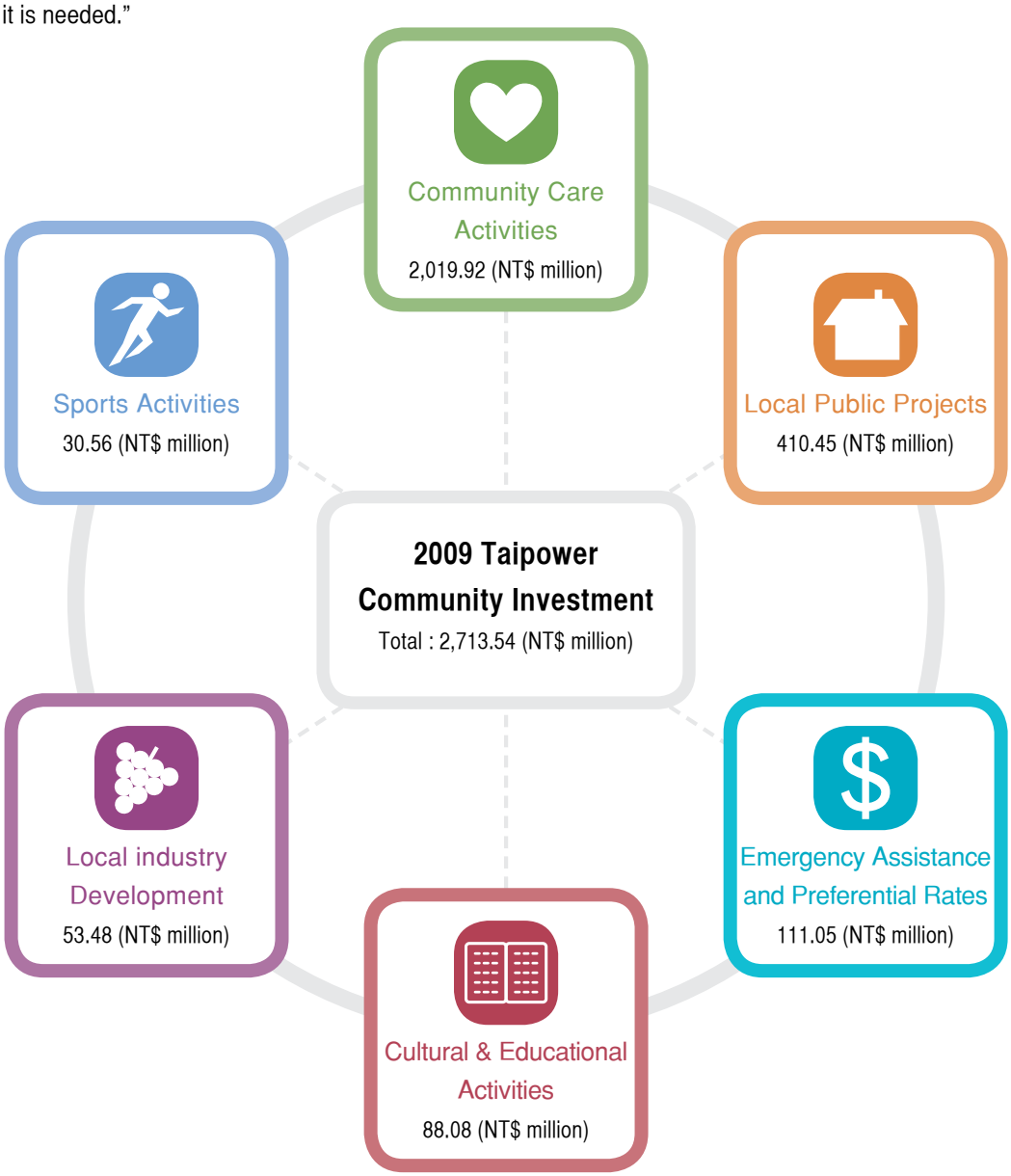
The amount of preferential tariff rate savings that Taipower offered to affected residents from Aug. 8 to Dec. 31, 2009 reached NT$94.97 million.

Caring for the Public

Taipower has always pledged itself to become a good corporate citizen. In addition to satisfying customer's demands, strengthening safety mechanisms, creating opportunities for its employees, and caring for the work safety of our contractors, Taipower also actively participates in community activities, assists disadvantaged groups and helps local charitable construction projects to fulfill its commitment to creating a win-win situation with its stakeholders.

Supporting Community Activities and Engaging in Local Charitable Construction Projects

Caring is an important element of Taipower's management philosophy. Taipower has long provided high-quality and reliable power to the country to lay a good foundation for the country's economic development. In addition, Taipower always keeps a grateful attitude and maintains its commitment to social care with the belief that "Electricity is like love and should be sent wherever it is needed."



Taipei County Low-Carbon City Fair

With the purpose of promoting the concept of a low-carbon lifestyle, the Taipei County Government hosted the 2009 Low-Carbon City Fair, Sept.16 - Oct.15, 2009. Taipower participated in the fair and presented the Taipower Energy Pavilion, featuring the theme of low-carbon energy technology.

The Taipower Energy Technology Pavilion was divided into five areas: overview of CO_2 reduction, renewable energy, nuclear power generation, carbon reduction technology, and energy conservation. The CO_2 reduction overview area introduced international GHG reduction strategies; the renewable energy and nuclear energy areas explained power generation using low-carbon technologies; the carbon reduction technology area disclosed how to reduce CO_2 emissions from thermal power plants; and finally, the energy conservation area told audiences how to conserve energy.

In addition, Taipower borrowed a 1.2 KW concentrating solar photovoltaic module and a solar tracker from the Atomic Energy Council and decorated them in the form of a sunflower, placing them at the entrance of the Pavilion. Moreover, this company borrowed a renewable energy demonstration vehicle from the National Taiwan Science Education Center and a small wind power generator from the TECO Electric & Machinery Co., Ltd. for display in Taipower's Pavilion.

The exhibition was widely acclaimed. In addition to a well-received Q&A program, Taipower held a series of activities including singing, dancing, non-plug concerts, and awarded popsicle to those who finished touring the 5 areas, etc. This exhibition was a good place for happy family gatherings and for obtaining valuable energy education. Besides attracting many visitors, this exhibition helped Taipower to improve its sincere image.

Light of Love —Year End Senior Citizens Attentive Care

Chinese New Year is the time when families get together. However, for seniors who live alone, it is the loneliest time of the year. Taitung County has the highest percentage of elderly population in Taiwan. Among them, the majority of the seniors live alone and have low income. Taipower, Taitung Christian Hospital, and the A Kernel of Wheat Foundation have gathered manpower and funds to host the "Light of Love – Year End Senior Attentive Care" activities since 2005.

In 2009, 200 seniors were invited to the Chinese New Year Eve dinners, and New Year's supplies were also sent to 100 disabled seniors through home delivery. There were 20 volunteers from Taipower who joined these activities to spread love to this remote area.

Seeds of Hope Program

Due to financial pressure, a lot of aboriginal families in the eastern regions cannot afford to have their children finish their education. Taipower, Hualien Mennonite Christian Hospital, Mennonite Christian Foundation, Taitung Christian Hospital, and A Kernel of Wheat Foundation continued to promote the Seeds of Hope Program to help low-income aboriginal college students reduce their tuition burdens.

This program provides low-income aboriginal college students from Hualien, Taitung and Pingtung counties with job opportunities in their hometowns in the summer time. It is done in an attempt to encourage them to cultivate their hometowns, while working to earn their tuition. In addition to feeling happy by helping others, they can see the needs in their hometowns. Hopefully, they will be willing to come back and develop their hometowns with their expertise. In 2009, 71 summer jobs were provided to local aboriginal college students.

Secondhand Computer Donation

Based on the concepts of “reusing resources” and “caring for public welfare”, in 2009 Taipower held a secondhand computer donation activity for the first time. Two hundred and twenty-one recycled computers were given to seven primary schools who suffered from the the flood disaster on Aug.8 by the National Alliance of Taiwan Women's Association, the Hengchun Christian Hospital, and A Kernel of Wheat Foundation. The Green Miracle 3C Recycling Network provided free computer check, repair, software installation and maintenance services. This activity not only improved learning resources for the remote and disadvantaged groups, but also passed on the environmental concept of treasuring our resources.

Firefly, Children’s Reading Plan

As educational resources in the Taitung and Hualien regions are very limited, lots of students there are in great need of assistance. Taipower and the A Kernel of Wheat Foundation jointly promoted the “Firefly, Children's Reading Plan” starting from September 2007. Eleven after-school classes were set up in these two areas, providing mobile book carts, character education class, summertime growing reading camp, little angel heroes gathering, etc. to enhance the students’ reading and learning capability.

For after-school classes, the priority was given to primary school students from underprivileged mid- and low-income, single parent families and those raised by grandparents. Mobile book carts went to the tribes in the remote mountainous areas and communities every two weeks. Children’s libraries were set up in 7 locations and books were exchanged every 6 months.

In 2009, 10 summer time growing reading camps were held with 86 participants. A little angel heroes gathering activity encouraged the students to show their talents on an avenue of stars. Students’ works and accomplishments were also presented. Eight after-school classes were held with 208 teacher and student participants.

Learning Center and Reading Room

In response to demand from the community and in line with Taipower's management philosophy of "Caring" and "Innovation", Taipower set up free learning centers and reading rooms in 2003 to equip citizens for the Information Age. This initiative has been highly praised by neighboring communities.

Currently, there are 25 reading centers and rooms located in the Taiwan and Penghu area providing more than a thousand seats for students. These centers and rooms provide a perfect learning environment with comfortable chairs and appropriate lighting and air conditioning. The centers and rooms not only provide a location for learning but also raise the spirit of the public.

Student Scholarships

Each year, Taipower holds scholarship award activities to encourage the disadvantaged students who live near power facilities areas and to care for underprivileged groups.

In 2009, the amount of scholarships awarded to 18,739 students in 25 power plants reached NT$54.55 million.

Subsidies for Local Charitable Activities

In order to strengthen the welfare of the residents living in the neighboring areas of power facilities, Taipower established the Approval Committee of Power Development Foundation (APDF), a body in charge of distributing subsides for local construction projects.

In 2009, Taipower offered a total of NT$2,563 million in subsidiary projects, making a great contribution to local public construction, education and culture activities, underprivileged group assistance, public welfare activities, etc. The major accomplishments in 2009:

- Providing emergency supplies to disaster areas hit by Typhoon Morakot.
- Sponsoring education and culture activities and awarding scholarships.
- Helping underprivileged groups : providing life support systems and preferential tariff rates to Taiwan Muscular Dystrophy Association, Taiwan Spinocerebellar Ataxia Association, Taiwan Ichthyosis Syndrome Association,Taiwan Motor Neuron, etc. for home bed-ridden patients.
- Assisting local basic public construction projects.
- Assisting the development of local industries.

Amount of Subsidies Spent by APDF

Year	Amount (NT$ million)
2007	2,786
2008	2,718
2009	2,563

Taipower Sports Teams

Since its establishment more than 60 years ago, Taipower has spared no effort to support various sports activities to enhance people's health in body and mind. Taipower has established baseball, soccer, volleyball, basketball and badminton teams and has cultivated many talented athletes for the country.

In addition to their outstanding playing techniques and performance, the team players would use their free time to participate in community charitable activities, a fact which was highly appreciated by local residents. In 2009 Taipower received a Silver Award in Sports Promotion and a Gold Award in Sports Sponsorship by the Sports Affairs Council of the Executive Yuan.

Subsidies to Remote Islets

Taipower complies with the government mandate to provide power to remote islets. And they base the tariff rates for these places on the regulations stipulated in the Remote Islands Development Statute and the Remote Island Electricity Supply Loss Subsidies Measure. In 2009 Taipower saw a loss of NT$4,400 million due to supplying power to the remote islets.

Local Industrial Development

In order to promote local prosperity and local industrial development, Taipower assists local governments in the towns and villages in holding local industrial activities that embody historical, cultural, unique and economically beneficial features. Meanwhile, professional approaches are adopted to enhance the marketing of industries and tourism resources. The unique culture and image of each town and village are then established to promote local prosperity and the development of other industries and businesses.

In 2009 Taipower helped promote industrial unique feature activities in the following villages:
Yungan: Grouper Culture Festival, Cheting: Ocean (Mullet Roe) Cultural Festival, Mituo: Milkfish Culture Festival, Gangshan: Lamb Cultural Festival, Luju: Tomato Cultural Festival, Jinshan: Sweet Potato Festival, Sanchih: Waterwheel Culture Festival, Shuangsi: Chinese Yam Cultural Festival.

"Hunger 30" Campaign

In response to the "Hunger 30" campaign hosted by World Vision Taiwan, Taipower held a series of activities entitled "Brightening Taiwan with Love, Recharging Electricity for the Most Vulnerable Families" to render assistance to 500 families deeply in need.

Due to the impact of the global financial crisis, many families in Taiwan seriously in need of outside help. Taipower sponsored in total NT$1.5 million to help the most vulnerable families.

Taipower has always emphasized using "POWER" to light up Taiwan. In light of Taipower's participation in the 30 Hour Famine movement, it's clear that this time the POWER came from Taipower employees who not only provided financial assistance to needy families, but also brightened their lives.

Caring for Employees and Contractors

Taipower's industrial safety policy is "putting people first, keeping industrial safety a priority, cherishing life, and demonstrating care". Taipower has the important mission of providing stable and abundant power to support Taiwan's industrial development. The remarkable achievements in this regard should be attributed to the efforts of Taipower's employees and contractors. Taipower deems the safety and health of these diligent people as extremely important. Taipower treats them with an equal status and implements various management measures according to government rules and the company's regulations to ensure their work safety and health management.

Ensuring Work Safety

To ensure that all Taipower's employees and contractors work in a safe and healthy environment, Taipower set up relevant management system procedures and measures, through concrete implementation and control, to fulfill its promise and responsibility of taking care of its employees and contractors.

Employees

Establishing Taiwan's Occupational Safety and Health Management System (TOSHMS)

In order to reduce the risks of work safety incidents, in addition to the OHSAS 18001system, Taipower assisted every unit to establish the Taiwan Occupational Safety and Health Management System (TOSHMS). It is expected that through hazard identification, risk assessment and risk control procedures, the ompany can effectively prevent occupational injuries. As of the end of 2009, 25 Taipower units have passed TOSHMS certification.

Promoting Labor-Management Harmony and Creating a Win-Win Situation

Taipower established the Labor Safety and Health Committee as a communication platform between the labor and the management. There are 33 members from relevant units. Taipower's president serves as the chairman of the committee. Fourteen representatives are from the Taipower Union, accounting for 42% of the total, a percentage that's higher than the legal requirement.

Labor safety policy

- Putting people first, keeping industrial safety a priority.
- Cherishing life, demonstrating care.
- The premise is the safety of environmental facilities. The first priority is to take early precautions to prevent the unexpected.
- Health and safety are everybody's responsibility. Pursuing industrial safety is a never-ending task.

Objectives of labor safety policy

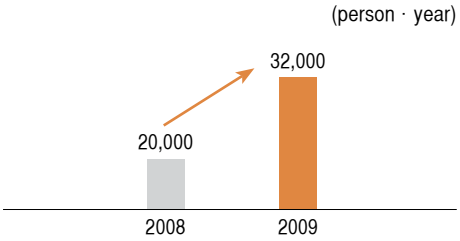
- Prevent on-the-job injuries to protect workers' safety and health.
- For safety and health, the facilities should be safe, the operation procedures should be standardized, and the healthy minds and bodies of all workers should be maintained.
- Prevent human errors, implement self-protection, mutual protection and monitoring for prevention.
- Implement human management and establish a clear, comfortable and spirited health and safety culture.

Promoting Training and Incentives

With the aim of strengthening the professional skills of new employees and heightening their awareness of occupational safety regulations, Taipower continues to hold relevant training programs. In 2009, there were more than 32,000 participants.

In addition, to encourage employees to actively participate in industrial safety affairs, those with outstanding performance were selected by a panel of judges from the Headquarters. Each was awarded with prizes and commended in the company's industrial safety magazine.

Participants in Training Programs



Enhancing Disease Prevention and Health Awareness

In 2009, a new strain of H1N1 flu broke out in Mexico and then spread quickly around the whole world. In June, the World Health Organization (WHO) announced that the whole world was threatened by this flu pandemic. Facing the threat from this new flu, the Taipower Headquarters immediately initiated an employee vaccination program in which 634 employees were vaccinated.

Moreover, Taipower continued to offer its employees regular and special physical check-ups. In 2009, a health seminar was held in the Headquarters with the goal of strengthening employees' and contractors' awareness of safety and health issues.

Contractors

Strengthening the Safety Awareness of Contractors

Everyday, there are about 12,000 to 15,000 contractors working on Taipower projects. These projects mostly require workers to work either higher up in the air or underground. Therefore, prevention of falls and electrical shocks is the major goal in Taipower's efforts to prevent accidents involving contractors. In order to ensure the effective implementation of its safety management mechanism, Taipower has set up concrete goals to reduce on-the-job injuries, and to effectively improve industrial safety management performance through greater supervision and contractors' self-management.

In order to improve contractors' work safety awareness, Taipower conducts nationwide promotion seminars every 6 months and offers consultation to two contractors every month. In addition, working with the Taipower business system, promotional meetings are held annually in northern, central and southern Taiwan, respectively. In 2009, there were in total 25 contractors with 2,454 people participating in these activities.

Strengthening the Safety Awareness of Contractors

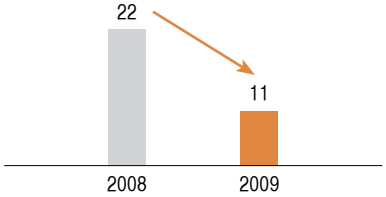
- Signing safety commitment statement to declare determination to actively implement all work safety related measures and regulations.
- Implementing as many inspections as possible and penalizing heavily, strengthening each level manager's "management by walking around" (MBWA) to urge contractors to carry out work safety measures; formulating clear rules and raising penalty fines to preven on-the-job injuries caused by unauthorized construction.
- Printing Industrial Safety Promotion Handbook to distribute to contractors to reinforce training and promotion.
- Strengthening casework for the units and contractors that have suffered major on-the-job injuries to enhance their capability for self-management on work safety.
- Emphasizing physical check-ups both before making job assignments and while on-the-job for security contractors who work night shifts and encouraging them to cultivate good habits and avoid working overtime in order to ensure work safety.

2009 Performance

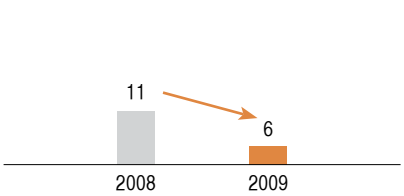
Thanks to the concerted efforts of the employees, the total injury index was 6.17 (the target figure was≦8.62), which is the lowest figure in Taipower's history.

In 2009, there were 11 contractor-related on-the-job incidents resulting in five deaths and six injuries, the lowest figure in Taipower's history. As the company understands quite well that any death or injury has a great impact on individuals, families, company, society and the whole country, Taipower conducted a thorough review of the causes of work safety incidents and drew up various improvement measures to prevent similar incidents from occurring again.

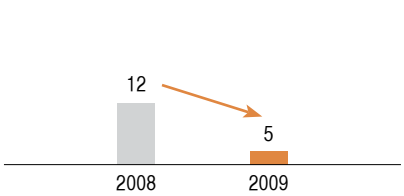
Contractor on-the-job incidents (cases)



Contractor on-the-job incidents (injuries)



Contractor on-the-job incidents (deaths)



Creating a Fair Employment Environment

Taipower's employees are the company's most important assets. As Taipower hopes to co-exist with its employees, Taipower pays serious attention to their rights and interests. In addition to providing its employees with equal opportunities and benefits, Taipower respects its employees' rights of speech and assembly.

Employee Rights and Benefits FAQ and Personnel/Regulation Inquiry System

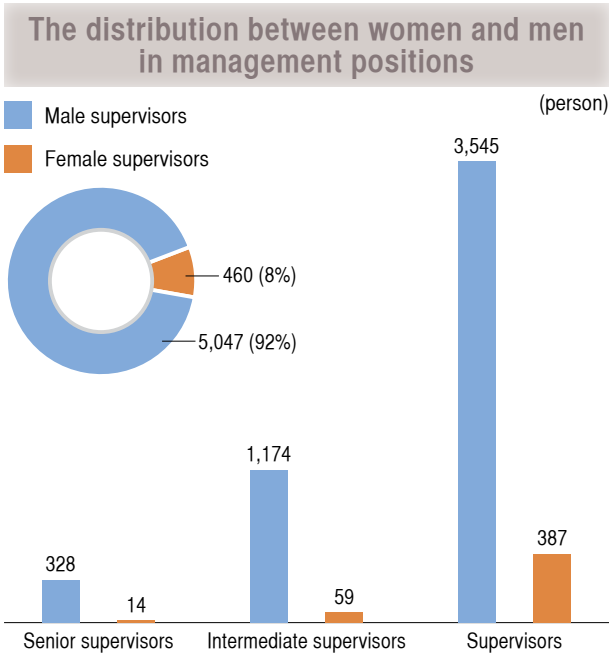
To provide employees with instant access to information regarding employee rights and benefits, Taipower posted an FAQ section on its internal network. Owing to the constant changing nature of personnel rules and regulations, Taipower has placed all personnel-related regulations on the webpage of the Human Resource Department, which offers the latest and the most comprehensive and transparent personnel information for the needs of the employees.

Employment of Disabled and Aboriginal People

To promote equal employment opportunities for minorities and the disabled, Taipower has employed 814 (3.02% of Taipower's 26,921 total employees) employees with disabilities (the legal requirement is 3%) and 156 (0.58%) employees of aboriginal descent. Both ratios are higher than the requirements set by the government and meet the regulations stipulated in the People with Disability Rights Protection Act and the Indigenous Peoples Employment Rights Protection Act.

Gender Equality

According to the Employment Services Act, an employer should not discriminate against applicants or employees based on gender. Taipower obeys the spirit of the Act in its recruitment, in its entrance test design and in its career planning for employees without any respect to gender.



Caring for and Communicating with Employees

Taipower is a large corporation with a tremendous amount of employees. In order to ensure the smooth implementation of the company's policies and measures, it is important to have employees' consent. Therefore, Taipower places great emphasis on communicating with its employees. Moreover, to care for its employees and better understand their needs, Taipower implements various employee assistance and service measures to create a win-win situation.

Regular Labor-Management Meeting

According to the Convocation Rules of the Labor-Management Conference, Taipower holds labor-management meetings regularly to conduct effective communications between labor and management. In 2009, the headquarters units and 75 subunits held 388 meetings, and 168 proposals were sent to the Headquarters for processing.

Executive-Employee Communication Meetings

In order to smoothly implement its communication mechanism, Taipower set up "guidelines of enhancing communication with employees" to urge each unit's head to enhance communication and interaction with his/her staff members. Attention was specifically focused on employees' rights and interests such as bonuses, promotions, performance evaluations, retirement pensions, etc.

To inspire good communication between the management level and the workers, Taipower gives out 3 awards each year to the departments with the best-rated labor-management relationships.

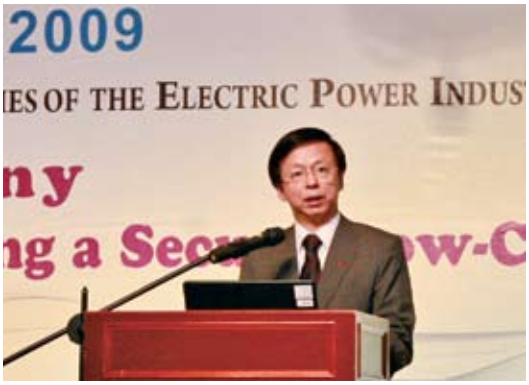
Employee Assistance Programs Mechanism

Complying with the government's policy and being in line with developed countries, Taipower converted the company's Heart to Heart Counseling Program into an employee assistance programs (EAPs) mechanism. The new mechanism allows Taipower to effectively use both inside and outside resources to provide employee assistance in the aspects of work, life, and health and also creates a harmonious, healthy working environment. Since the inception of this program, it has received wide support and recognition from the employees and managers alike, and is looked upon by government agencies, academic groups and private enterprises as a role model.

Taipower Outreach

The Association of the Electricity Supply Industry of the East Asia and the Western Pacific,AESIEAP

AESIEAP is a non-governmental organization founded by electricity providers in East Asia and the Western Pacific area in 1975. Its mission is to promote cooperation of electricity providers in the area and provide a platform for exchange of experience and technology. As of October 2009, AESIEAP membership consists of 119 members from 19 countries/ economies within the area, and its Conference of the Electric Power Supply Industry (CEPSI) has become the largest conference for electric power providers in the East Asia and Western Pacific area.



Taipower hosted AESIEAP's activities for 2009 and 2010. The AESIEAP 2009 CEO Conference with the theme of "Challenges and Opportunities of the Electric Power Industry in an Uncertain Era", was held in Kaohsiung in Oct. 14-16. There were 127 participants.

During the Conference, an Electricity Utility CEO Roundtable Forum was held to allow delegates to discuss high level technology and management issues and carve out a low-carbon energy future, while facing the sustainable development challenges of electricity technologies, energy prices, and global climate change.

In 2010, Taipower will host the 18th Conference of the Electric Power Supply Industry (CEPSI), Oct. 25-29, at Taipei International Conference Center. This conference is expected to attract major players of the electricity supply industry, and to be attended by more than 1,000 workers and CEOs from the electricity supply industry. Taipower will assist domestic electric power-related manufacturers in attending this conference to display their products and technologies in order to increase their international exposure and competitiveness.

Business Council for Sustainable Development, Taiwan,ROC, BCSD-Taiwan

BCSD-Taiwan was founded in May 1997 and is a member of the World Business Council for Sustainable Development (WBCSD). BCSD-Taiwan is one of the most influential NGOs in the international sustainable development arena. Taipower joined the BCSD-Taiwan in 2003 and has since maintained its membership up to the present.

In 2009, Taipower participated in the Second Member Meeting of the Taiwan BCSD Forum, through which, Taipower acquired an understanding of the international development trend of carbon disclosure, carbon print and corporate sustainability reports.

World Safety Organization,WSO

Taipower joined the World Safety Organization (WSO) in June of 1991. The WSO is an international organization which provides information regarding environment and workplace safety. It shares information with its members about technology, experience and equipment that's useful for preventing injuries.

By joining WSO, Taipower is able to join the WSO annual meetings and enhance its international image. Taipower can also join the various meetings of the WSO labor committee to strengthen international cooperation and exchange of experience and technologies. Through its occupational safety and health policy, as well as seminars attended by many experts, WSO is able to present its members with knowledge regarding the subject of health and safety: the latest information and equipment, international development trends and practices, and management tools and technologies. With the information provided by the WSO, Taipower is expected to further improve its performance in terms of work safety.

World Association of Nuclear Operators, WANO

To increase the performance and safety of nuclear power plants, Taipower joined the World Association of Nuclear Operators (WANO) in 1989. It is an international association dedicated to increasing the performance and safety of the nuclear power plants around the world. Its 36 members are responsible for providing their experience in nuclear power plant operations and delivering their information on nuclear power plant incidents to all members through a reporting system to prevent similar incidents from reoccurring.

The publications and the database of WANO are some of the most credible references in the nuclear power industry. By ① holding conferences, seminars, expert meetings and training programs, ② gathering experts to develop operational guidelines, ③ collecting best power plant operation examples and member power plant operation data, and ④ arranging personnel technical exchanges, WANO provides an occasion for its members to share, exchange and discuss technologies and problems.

Through WANO, Taipower can communicate with all of its members around the world and across political barriers, thereby keeping up with international standards. Participating in relevant activities and interacting with other nuclear power operators is crucial for Taipower to maintain its nuclear power operation performance and keep up with worldwide nuclear industry progress.

Institute of Nuclear Power Operations, INPO

All nuclear power providers in the United States are members of the Institute of Nuclear Power Operations. The publications and the database of INPO are some of the most credible references in the nuclear power industry.

Besides the U.S., INPO also has international members from 16 countries. Since the nuclear generating units owned by Taipower are all American-style unts, learning from American companies can help us increase the reliability, performance, and safety of our nuclear power plant operations. For this reason, Taiwan joined INPO as an international member in 1982, and established a communication channel where Taipower can directly interact with US nuclear power operators and the electric power supply industry there.

2009 Awards

The 10th National Company Standardization Prize

In order to provide stable, reliable and high-quality maintenance service, Taipower established a Total Quality Management Committee to promote its power repair and maintenance (R&M) standardization management mechanism. In addition to strengthening its own capability of R&M techniques and shortening the R&M time for power facilities, the mechanism helps to save energy resources and cost and to reinforce the competitiveness of core business. Taipower's efforts in promoting standardization were recognized with the 10th National Company Standardization Prize.

The 2nd Outstanding Public Construction Awards

The Sixth Transmission Power Project received five outstanding construction quality awards.

The 22nd National Solidarity Circle Contest

In order to implement the Talin Thermal Power Plant retrofit project, a Taipower research team studied the use of microalgae to reduce carbon emissions as a CO_2 fixation technology. This study not only successfully demonstrated the use of microalgae in fixation of CO_2, but also developed some high-value personal care products using the microalgae. It also showed that it is possible to mitigate the GHG issues using an environmentally friendly method and to create urban power plants which generate power, uphold the integrity of the ecology and also have value in serving as tourist attractions.

Thanks to the above research effort, in 2009 the Talin Thermal Power Plant was awarded a golden tower in the 22nd National Solidarity Circle Contest for its Flue Gas CO_2 Reduction Using Microalgae Project, and the project's three-dimensional photosynthesis reactor was awarded a patent by the Intellectual Property Office of the Ministry of Economic Affairs.

Corporate Sustainability Report Award

To encourage domestic corporations to keep up with global trends, to enhance the emphasis and focus on sustainable development, environmental awareness and social welfare, in 2008 the Taiwan Institute for Sustainable Energy (TISE) began promoting the Corporate Sustainability Report Award to encourage businesses to improve stakeholder engagement and understanding by issuing sustainability reports.

To follow this international trend and to meet the domestic and foreign-related organizations' requirements regarding non-financial performance information, since 2007, Taipower, in compliance with the Global Reporting Initiative(GRI) G3 Guidelines, has annually published its own Sustainability Report, to communicate Taipower's thinking, strategy, and accomplishment to the public in the three aspects of economy, society and environment. In 2009, Taipower won a bronze award in the 2009 Corporate Sustainability Report Award.

4 Environmental Sustainability

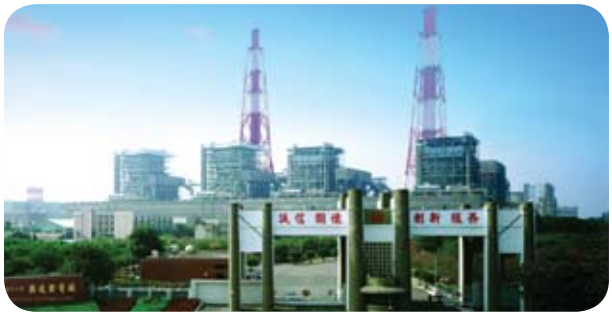
As human civilization has been gradually influenced by urbanization and the aging of the population, its dependence on electrification has also been increasing rapidly. In the future, it can be expected that the costs of energy will continue to rise due to the limited reserves of fossil fuels, the effect of global warming, the lack of cost-effective alternative energy, and the pressure for carbon reduction. The future of the power industry is full of challenges. Even if Taipower continues to develop renewable energy (including wind power and solar photovoltaic), it can only serve as auxiliary energy for now. Looking ahead, the sustainability of Taiwan's power industry must be developed under the premise of "limited energy, low-carbon power, and sustainable environment" and Taipower should strive for maintaining a low-carbon society to fulfill its social responsibility.

According to the National Energy Conservation and Carbon Reduction Plan, the quantity of GHG emissions in 2020 should be reduced to the level of that in 2005 and in 2025 to the level of that in 2000. Based on these goals, Taipower has set up and carried out the GHG Control Strategies to reduce GHG emissions. As to actual reduction quantity, Taipower is still awaiting the passage of the GHG Reduction Act to implement total GHG emission quantity control and approve Taipower emission quota. Taipower will then continue to promote GHG Control Strategies, as well as the measures of ① adjusting tariff schedules to reduce power consumption growth, ② trading domestic and overseas carbon credits, and ③ introducing mature carbon capture and storage technologies to achieve the GHG reduction goals stipulated by the government.

Emissions and the Effects of Greenhouse Gases

The GHG emissions from the power industry are mostly produced from thermal power generation. As Taipower still relies heavily on thermal power generation, we understand that the CO_2 emission issue will incur higher risks for the power industry than for other industries affected by the GHG emission control system. In order to reduce CO_2 emissions and to cope with climate change issues, many developed countries have been actively developing nuclear power as one of the options for CO_2 reduction.

Taipower will comply with the government's policy in adjusting the ratio of nuclear power to total power generation in order to reduce GHG emissions. Although nuclear power has been included as a non-carbon energy option, Taipower will still need to moderately increase its coal-fired generation, adopt high-efficiency power generation facilities, control pollutant emissions far below legal limits, and meet local environmental quality standards. Maintaining economical electricity and a stable fuel supply will be beneficial for cost reduction.



GHG Control Action Plans

Based on Taipower's estimation, the CO_2 emissions from thermal power plants will continue to rise in the next decade, but the intensity of those emissions will decrease due to Taipower's supply-side management measures outlined in the GHG Control Strategies. From 2013 to 2019, the CO_2 emissions from each KWh of power generated will be maintained within 0.5 kg, which effectively reduces Taiwan's overall CO_2 emission factor. In order to effectively manage and reduce GHG emissions, Taipower expanded its GHG Control Strategies to 8 items and planned to implement the following 20 actions plans to deal with this important issue:

Taipower's GHG Control Strategies and Action Plans

Control Strategies	Action Plans	Measures
Supply-side management	1. Adopt the best available technologies for new generating units. 2. Improve the average efficiency of existing thermal power units. 3. Increase the ratio of natural gas power. 4. Increase the ratio of renewable energy. 5. Complete the Lungmen Project. 6. Increase the ratio of nuclear power.	1. Adopt supercritical coal-fired generating units with an efficiency of 44.5% (LHV Gross). 2. Improve the average efficiency of the existing thermal power units. 3. Ratio of natural gas power generation will reach 25% in 2025. 4. Ratio of renewable energy generation will reach 8% in 2025. 5. The Lungmen Nuclear Power Plant Units 1&2 are scheduled for commercial operation on Dec.15, 2011 and Dec.15, 2012. 6. Implement replacement projects to upgrade the efficiency of important nuclear power facilities.
Demand-side managem	7. Promote energy conservation to reduce peak load.	7. Continue to promote internal energy conservation and sponsor or participate in external promotional activities.
Improve power transmission and distribution system	8. Improve transmission and distribution efficiency and reduce line loss. 9. Step up SF_6 control to cut down its dissipation.	8. Maintain transmission loss at a level below 5%. 9. Establish SF_6 management system, improve recycling and reuse.
Smart Grid	10. Effectively control the loading and distributed generation. 11. Integrate green energy. 12. Continuously upgrade the automated dispatching system.	10. Install an advanced metering infrastructure (AMI) and a customer service system. 11. Construct a high-quality power or integrated distributed generation system. 12. Develop automation of substations and feeders.
Research and development	13. Develop technologies for carbon capture and storage. 14. Develop renewable energy and CO_2 reuse technology.	13. (1) Perform evaluation of and establishment of advanced CO_2 (2) Perform feasibility study of offshore seabed CO_2 storage. 14. (1) Develop microalgae CO_2 fixation and microalgae oxidation energy applications. (2) Study on application of photocatalyst in CO_2 conversion. (3) Perform measurement on power generation characteristics for a high-efficiency light concentration/thin membrane solar photovoltaic system.
Greenification	15. Continue planting trees.	15. Continue planting in existing sites; an increase of 0.1% of funding for new development projects is designated for greenification.
Management, supervision, certification, and cooperation	16. Promote GHG management system; increase ability to build and plan training mechanism. 17. Share environmental protection information in a transparent fashion.	16. Continue the ISO 14064-1 GHG verification and training programs in all thermal power plants. 17. Establish the environmental accounting system and publish the sustainability report.
Carbon credits	18. Participate in voluntary GHG reduction programs. 19. Invest/participate in domestic/foreign carbon reduction projects. 20. Purchase domestic/foreign carbon emission quota.	18. Participate in voluntary GHG and verification programs. 19. Seek opportunities for investment or participation in carbon reduction projects. 20. Research and analyze the channels and methods for purchasing carbon emission quota.

GHG Emission Inventory Check and Voluntary Reduction

Taipower established the GHG Inventory Check Task Force in 2004 to initiate the GHG emission inventory check and verification. In 2005, the GHG Information Management System was established. Since then, each business unit of Taipower is required to enter the GHG emission data related to its operations into the management system at the beginning of each year for data compilation and analysis. Taipower personnel qualified to conduct GHG inventory checks are then sent to each unit to verify the accuracy of the reported information.

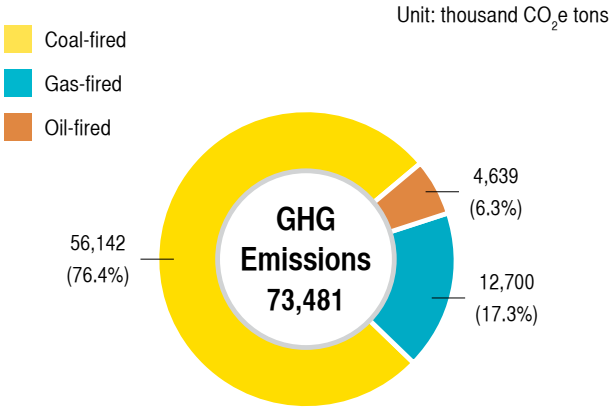
Taipower requests all of the units to list the activities and facilities that are under their control into inventory check. The direct emission and the indirect energy emission activities should all be included in the inventory check. Other indirect emissions, such as employee commuting and business trips, or transportation of raw materials and wastes, are also entered in the inventory check but do not need to be quantified at the present time.

Taipower's main GHG emission sources are thermal power generation, coal yards, transportation vehicles, insulation gas used for switchgears, frozen and air conditioning facilities. Based on the 2009 GHG inventory check results, Taipower emitted 73,995 thousand tons of CO_2e of GHG emissions, of which 99.3% came from the thermal power generation processes.

2009 Taipower GHG Emissions

GHG	Emissions (thousand CO_2e tons)
Carbon dioxide (CO_2)	73,410
Methane (CH_4)	112
Nitrous oxide (N_2O)	280
Sulfur hexafluoride (SF_6)	185
Hydrofluorocarbons (HFCs)	7
Perfluorocarbons (PFCs)	-
Total	73,995

2009 GHG Emissions from Thermal Power Plants



In order to make the GHG information transparent and credible, starting from 2007 Taipower entrusted a certification agency to verify each unit's GHG emissions according to ISO 14064-1. As of 2009, 34 units had passed the ISO 14064-1 verification. This effort will continue in the future.

Starting from 2006, Taipower has been participating in the Bureau of Energy's Voluntary GHG Reduction for Energy Industry Project. In 2009, 9 units passed the ISO 14064-2 validation. The total amount verified by an international certification organization reached 2,555 thousand tons of CO_2e.

Participation in Voluntary GHG Reduction Project

Taipower implementation unit	Validation year	Quantity verified (CO_2e tons)
The Tongsiao , the Taichung , and the Hsinta Thermal Power Plants	2007	170,834
The Hsiehho, the Talin and the Tatan Thermal Power Plants	2008	2,384,375
Dept. of Generation (wind power and hydro power projects) and Dept. of Power Development.	2009	*

* Verification is scheduled for 2010

Development of Renewable Energy

The arrival of the era of high oil prices is stimulating the rush toward development of green or renewable energy. As Taiwan lacks natural energy resources, it relies on imported energy for a 99% of its energy needs. In order to alleviate the dependence on imported energy, actively developing renewable energy will be an important key for effective reduction of GHG emissions in the future.

In line with the government's Renewable Energy Development policy, Taipower has recently initiated the development and assessment of various forms of renewable energy, including small hydro, wind power, solar photovoltaic, marine energy and wave energy to assess the feasibility of further development.

Following the government's "Guidelines of Renewable Energy Development", in addition to developing its own renewable energy, Taipower purchased various renewable energy from the private sector at the rates stipulated in the guidelines. In 2009, Taipower purchased 1,250 GWh, with a total capacity of 479 MW from the government and the private sector.

Taipower's installed capacity of renewable energy (including conventional hydro power) at the end of 2009 amounted to 2,307 MW, accounting for 5.7% of the system capacity; its net peak capability totaled 1,334 MW, accounting for 3.3% of the net peak capability of the system.

Renewable Energy Development

	2009 Status	Future Outlook
Small hydro 	• As of the end of 2009, the installed capacity of conventional hydro reached 1,937 MW, accounting for 4.8% of the power system. • The Kaoping Hydro Power Plant Chumen Unit and the Mingtan Hydro Power Plant Choshui Unit were renewed. • The Bihai Hydro Power Plant was constructed at the mid-stream of the Hopingnan River. • One new unit and two new units were added to the Wanda Hydro Power Plant and the Sunglin Branch, respectively.	• Recovery of the Tachiachi Hydro Power Plant Chingshan Branch. • Promotion of the Wanli and Luming Hydro Power Product.
Wind power 	• 106 wind power units were in operation and the total installed capacity reached 179.76 MW. • In line with the government's goal of developing green electricity, Taipower formulated the "Ten Year Wind Power Development Plan" to promote wind power generation. It is planned to reach the goal of installing at least 200 wind power generators or a total installed capacity of 300 MW within 10 years. • As of the end of 2009, in Taipower system, wind power installed capacity was 370 MW, accounting for 0.9% of the system, of which, Taipower owned 106 generators (180 MW, 0.4%), and the private sector 86 generators (190 MW, 0.5%).	• Installing 162 wind power units with a total installed capacity of 288.76 MW by the end of 2011. • Planning the 4th phase of the wind power project. • Conducting feasibility studies on the Changhua and Penghu offshore wind power projects.
Solar energy 	• Taipower completed 10 solar energy pilot projects with a total installed capacity of 233.5 kWp.	• The total installed capacity of the solar photovoltaic system is estimated to reach 10,000 kWp by 2011. • Annual total production is estimated to reach 12 GWh.
Geothermal 	• There are close to 100 sites in Taiwan with potential for geothermal development. Only 26 sites have high potential for development, with an estimated reserve capacity of around 1,000 MW.	• Taipower handled power purchase matters with the Ilan County Government regarding the county's Chingshui Geothermal Power Project.
Biomass 	• Taiwan has two kinds of biofuels, i.e. refuse incineration and biogas. • The total capacity of the Neihu Incineration Plant and other incineration plants is 547.6 MW. • Kaohsiung Lita Livestock Company has completed the waste treatment system for 200 pigs. The animal waste can be processed to produce biogas, which can be directly used for burning and power generation. • The biogas power generation systems of landfills in Taipei (Shangchuku, Fudekang), Taichung (Wenshan), and Kaohsiung (Shichingpu) have a total installed capacity of 21.8 MW.	• Taipower has committed to purchasing biomass energy.
Marine Energy 	• The potential electrical capacity of ocean power produced with tidal, current, waves and temperature difference is 44,000 MW. About 200 MW can be developed. • In 2009, Taipower completed the feasibility study and preliminary design of a hybrid OTEC (ocean thermal energy conversion) pilot power plant.	• Promote the hybrid OTEC (ocean thermal energy conversion) pilot power plant project. • If after study, the pilot project is feasible, Taipower will invest in the second phase of the Deep Seawater Low Temperature Utilization, Research and Development Project in 2010.

CO_2 Capture and Storage Technology

The CO_2 capture and storage technology can directly reduce the emission of CO_2 and is expected to play an important role in global GHG mitigation efforts. The design of our existing thermal power plants allows them to use post-combustion CO_2 capturing method. These thermal power plants may adopt suitable CO_2 capturing technology to capture low concentration CO_2 from the flue gas and then store the captured CO_2 in suitable sites. However, the cost of the current operation technology for CO_2 capture is relatively high. Besides conducting its own research on low-cost CO_2 absorbent material, Taipower is also closely watching the international developments regarding this issue. It is hoped that the relevant CO_2 capture technologies can be introduced to Taiwan when as soon as they become mature. On the other hand, Taipower is also putting effort into upgrading its capability to access potential geological sites which are suitable for CO_2 storage. Taipower signed a cooperation agreement with Japan's Central Research Institute of Electric Power Industry (CRIEPI), which has practical experience in this area. In 2009, Taipower completed a project on the establishment of a database for site selection for CO_2 geological storage. Peikung Hill in the Taihsi Basin was selected as the site with the most potential. Taipower will conduct further investigation into the suitability of that site in 2010.

Management of SF_6

In addition to safety and reliability, modern substation facilities need to be aesthetic in structure, safe for operation, easy to maintain, low in noise, and clean in appearance. In order to address environmental concerns about insulation fluids, Taipower has widely adopted the SF_6 gas-insulated switchgear (GIS) equipment. However, there is often a need for refilling of some SF_6 when leakage occurs or during equipment maintenance. As SF_6 is a highly potent GHG , Taipower has adopted the following measures to address this issue:

SF_6 usage and refill amounts in substations and switchyards in 2009

- A total of 13,948 GIS were using SF_6.
- 1,347,827 kg of SF_6 were used.
- 226 units of refilling equipment were used.
- 6,701.39 kg of SF_6 were added to existing facilities for maintenance, natural leakage, remedy of incidents and testing leakage.

Ways to reduce SF_6 leakage

- Conduct SF_6 testing with leakage detection meter periodically.
- Prior to conducting maintenance service on GIS equipment, first pump SF_6 into storage tanks with recovery vehicles. Before opening the switchgear cover for maintenance, make sure no leakage of SF_6 will occur.
- If SF_6 leakage is found to have exceeded the designated amount during inspection, the electricity transmission to the equipment should be cut immediately so repairs can be made.

Recycling and reuse of SF_6

Prior to conducting maintenance on GIS equipment, the SF_6 recovery vehicle should be used to pump SF_6 from the GIS into the storage tank and reduce the internal GIS pressure to vacuum. After completion of maintenance, SF_6 is pumped back into the GIS again.

SF_6 leakage detection

During inspection or after maintenance, an SF_6 leak detection meter should be used immediately to detect if SF_6 is leaking and if the leakage exceeds regulation.

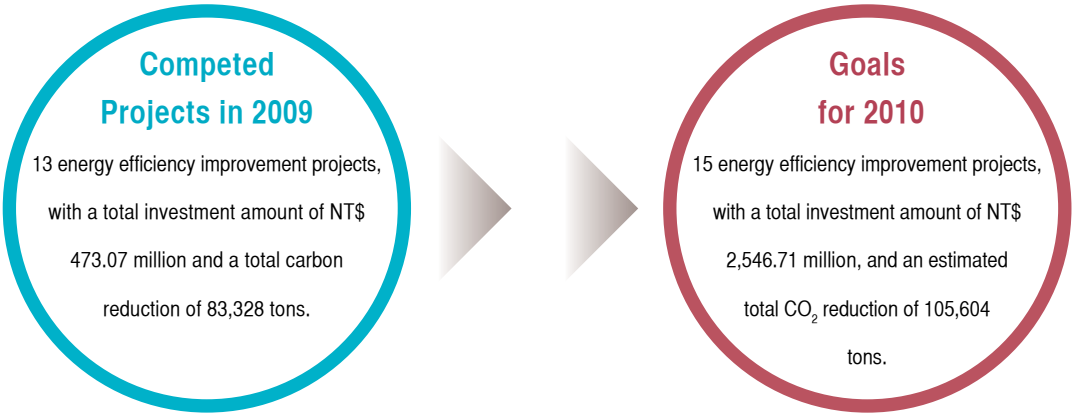
Assessment of Nuclear Power Strategy

As nuclear power has the benefit of non-carbon emissions, many countries have included it in their countries' future power development policy to serve as an important option for GHG emission reduction. Our country has listed nuclear power as an option for non-carbon energy in the "guidelines of sustainable energy policy". Furthermore, in 2009 a conclusion was made in the Third National Energy Conference to establish a nuclear power assessment mechanism for nuclear power development and utilization.

In order to cope with the changing international energy environment, in addition to completing the report on "preliminary planning and evaluation of Taipower's utilization of nuclear power," Taipower also began a feasibility evaluation on adding nuclear units in the existing nuclear power plants with an electric power professional perspective to carefully study the conditions and feasibility regarding the continued expansion of nuclear units.

Thermal Power Efficiency Upgrading

Due to the influence of the system dispatch, Taipower's thermal units were unable to operate at full load and at optimal efficiency. In addition, the aging of the existing units and unstable fuel quality further led to the actual operation efficiency being lower than the designed level. Beyond implementing overall projects, efforts were also made to improve facilities and to alleviate the problem of aging units to maintain the highest efficiency under various dispatch loads. In 2009, the overall efficiency of existing thermal units reached 41.94% (LHV-Gross), which was slightly higher than the previous year's 41.64% (LHV-Gross).



Greenification and Tree Planting

Based on the spirit of caring for the Earth and treasuring Taiwan, Taipower considers tree planting as one of its most important missions. In the past, Taipower has practiced tree planting on sites of thermal power plants, branches, construction offices and training centers. A total of 284 hectares of trees have been planted so far, equivalent to an area that's 10 times the size of Taan Forest Park.

In 2009, a 30 hectares forestation project at the Army Infantry School in Kaohsiung was completed. In fact, since 2008, Taipower has been cooperating with local governments where thermal power plants are located to deploy large-scale tree planting projects. Currently, tree planting projects are being carried out in Kaohsiung and Miaoli counties. These projects are expected to reach the goal of planting 120 hectares by 2011. The result will be equivalent to an area that's 4.6 times the size of Taan Forest Park with 144,000 trees being planted which can reduce about 1,440 tons of CO_2 emissions.

In the future, Taipower will continue to actively engage in carbon reduction-related activities to mitigate global warming problems.

Energy Conservation

Energy Conservation Incentive Measures

In line with 2008 tariff schedules adjustments, Taipower implemented Tariff Schedules Discount on Energy Conservation Incentive Measure. Preferential discount rates were given to customers if the growth of their power consumption for the current period was zero or negative as compared with the same period of the precious year to encourage people to save energy.

In 2009, this measure was expanded to include community public facilities. The customers who had enjoyed discount rates for a consecutive 2 years and whose energy saving exceeded 20% were entitled to have further discounts.

This practice was highly effective. In 2009, 3,756 GWh of electricity was saved. Tariff rate discounts reached NT$6,110 million. CO_2 reduction reached 2.39 million tons, equivalent to one year's total CO_2 absorption by 6,459 Taan Forest Parks. In the future, Taipower will continue its tariff schedules discount measure to lead the people together to reach the goal of winning in all three areas- "energy, environment and economy."

Complying with the government's "National Energy Conservation and Carbon Reduction Project", Taipower planned to initiate energy conservation competitions to be held in counties and cities and offer tariff rate discounts to them, starting from July 1, 2010. This is done in an attempt to encourage people to promote energy conservation from communities to counties and cities to create an atmosphere of group competition for energy conservation and carbon reduction. For residential customers (including community public facilities), elementary schools and junior high schools, if they show good performance in energy conservation during the current period and if the counties or cities they reside in win the first three places in energy conservation competitions, then, in addition to the original basic 5%, 10% or 20% discounts, they can get an additional competition discount.

Achievements of Energy Conservation

Over the years, Taipower has actively implemented internal energy conservation measures. In the community, it has promoted the concept and implementation method of energy conservation through seminars, Internet, TV, broadcasting and newspaper to the public and the stakeholders in the hope of jointly achieving the goal of energy conservation.

Achievements of Internal Energy Conservation Measures

In order to upgrade the effectiveness of internal energy conservation control, Taipower has made an effort to strengthen its inspection mechanisms and to improve its total quantity management, which has led to remarkable achievements in the conservation control of electricity, gasoline and water.

Item / Year	Electricity consumption in power plants, substations and offices		Gasoline consumption in offices		Water consumption in offices	
	Electricity saved (MWh)	Saving rate (%)	Gasoline saved (1000 liter)	Saving rate (%)	Water saved (1000 m^3)	Saving rate (%)
2007	118	1.69	307	11.9	87	3.5
2008	132	1.85	70	3.3	127	5.5
2009	136	2.01	614	32.4	161	7.0

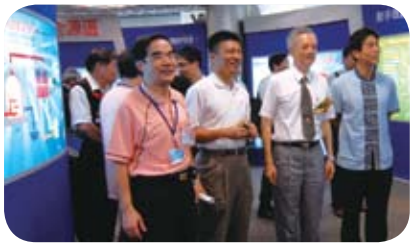
Note: The above figures were compared with targeted figures. (The consumption of power plants and substations was based on the average consumption over the past 3 years. The consumption of electricity, gasoline and water in the offices was based on the targeted figure of the previous year.)

External Promotion and Achievements of Energy Conservation

Each year, Taipower has plans for helping people establish correct energy conservation concepts through various channels and methods.

Measures	2009 Accomplishments
1.Energy conservation seminars for: • Large customers • Schools • Classes for repair and maintenance of in-house electric equipment.	• 1,380 activities, with 393,000 attendees.
2.Technical consultation service.	• 5,174 over 100KW customers.
3. Additional capacitors installed after technical consultations (due to improved power factor).	• 85,894 kVAr.
4.Air conditioning advice given to convenience stores, department stores, hospitals, and banks.	• 2,806 customers.
5.Taipower energy-conservation exhibits.	• 503,000 visitors.
6.Tariff Schedules Discount on Energy Conservation Incentive Measures.	• The number of customers who reduced their power consumption compared with the same period of last year was 23.94 million. • The power consumption was reduced by 3,756 GWh; tariff schedules were saved by NT$6,110 million and CO_2 emissions were reduced by 2.39 million tons.
7. Assisting the government's promotion of Purchasing Energy Label Electric Appliances Subsidy Program.	• In the subsidiary period, the amount of subsidies reached NT$639.35 million. • The power consumption saved reached 40 GWh and CO_2 emissions were reduced by 26,000 tons.





Relationship between the Power Industry and the Environment

Electricity is a driving force for economic development. It is also an energy source that's essential to maintaining a high quality of life. As global warming and regional environmental issues become more important, taking account of environmental protection in the development of the power industry will remain an important goal. Taipower has been taking feasible measures to balance the development of the power industry with environmental protection measures.

Vision of a Sustainable Environment

- Taipower will continue to seek solutions to environmental problems, respond to expectations from the public, and fulfill our social and corporate responsibilities.
- Taipower will endeavor to reduce management risks due to environmental issues, and cope with energy and climate change challenges. Moreover, Taipower will continue to improve our environmental management system and air pollution control measures, as well as reduce CO_2 emissions, recycle waste materials and promote the concept of energy and resource conservation.
- Taipower will also continue to integrate our records for operational environmental information, and through disclosure of such information will pursue sound communication and interaction with our regulators, customers, supply chain and other stakeholders.

Strategies and Goals

- Comply with environmental protection laws and regulations that consider the capacity of the environment.
- Carry out Environmental Impact Assessments to increase the environmental feasibility of our power development projects.
- Improve pollution control measures and maintain the quality of the environment.
- Increase public participation and strengthen promotion and communications.
- Focus on maintaining the quality of the environment and increase planning of scenic sites.
- Stress ecological conservation and restoration.
- Establish a comprehensive environmental monitoring system.
- Focus on performing 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).

Action Plan for Environmental Sustainability

Taipower will strive to use the best available technologies, work with our employees to reduce environmental impact, and demonstrate our determination to become a green corporation through the following actions:

- Establish an environmental management system.
- Introduce an environmental accounting and material flow management system.
- Cope with climate change and global warming.
- Improve environmental efficiency.
- Enhance health, safety and environmental education.
- Advance environmental conservation and biodiversity.

Environment Impact Assessment

The Environmental Impact Assessment Act stipulates that prior to the construction of a power facility that exceeds a certain size, an Environmental Impact Assessment (EIA) process is required. While engaging in the environmental impact assessment process, Taipower entrusts professional organizations to conduct related research. In addition, for key environmental projects, Taipower consults with stakeholders, including government agencies, scholars, experts, the private sector, etc. in order to ensure that the project content will meet the public's needs and consider the impact on the neighboring natural environment, biology, society and economy.

As influenced by various key factors such as energy policies, CO_2 emission issues and project requirements, the progress of reviews for EIA has been fairly slow. Taipower will continue its effort to communicate with its stakeholders in an attempt to meet their expectations and develop the company's power facilities at the same time.

As of the end of 2009, 52 Environmental Impact Assessments had passed review by the relevant environmental protection agencies. The review on Environmental Impact Difference Reports and modification on comparison charts totaling 51 cases were completed in the past years.

	Environmental assessment on hydro power plants	Environmental assessment on thermal power plants	Environmental assessment on nuclear power plants
Planning stage	Focus on preservation of ecology and scenery.	Incorporate pollution prevention measures into plant planning.	Incorporate possible environmental impact factors and the appropriate countermeasures according to regulations.
Investigation stage	Conduct detailed background investigations on the quality of air, rivers and lakes, as well as marine ecology, noise and vibrations.	Conduct detailed background investigations on the quality of air, rivers and lakes, as well as land and marine ecology, noise and vibrations.	Conduct detailed background investigations on radiation, social economy, water quality of ocean and rivers, land and marine ecology, noise and vibrations.
Construction stage	Implement various environmental monitoring plans to ensure that the neighboring environment is not affected.	Implement various environmental monitoring plans to ensure that the neighboring environment is not affected.	Implement various environmental monitoring plans to ensure that the neighboring environment is not affected.
Operation stage	Continue environmental monitoring to ensure operation compliance with expected conditions.	Construct sound environmental pollution control facilities: • Air pollution control measures. • Noise control measures. • Warm water discharge control. • Implement environmental monitoring plan.	Continue environmental monitoring to ensure compliance with expected conditions and engage in: • Radiation protection • Control of warm water discharge and preservation of marine ecology. • Work on coral preservation and restoration.

Enhancement of Environmental Performance

Establish Environmental Accounting System

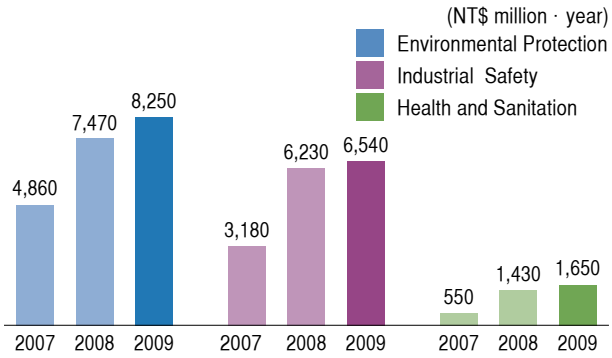
Using a quantitative method to conduct environmental cost-and-effect assessment can effectively upgrade the quality and efficiency of environmental management decisions. In 2003 Taipower established the environmental accounting system (EAS), and in 2006 developed the EAS information platform to help with EAS information entry work.

Furthermore, in order to enhance the accuracy of the information, Taipower connected the EAS with the company's information system in 2007 to enable each unit to report its data to the system in a timely fashion.

In 2007, Taipower's corporate information system was connected to the environmental accounting system, so that each unit could complete real-time data reporting and improve data accuracy.

Taipower's environmental accounting system is unique in that it includes not only environmental expenditure information, but also industrial safety and sanitation expenditure information. By expanding the scope of the system, Taipower is able to quantify the costs of all environmental-related activities (including environmental protection, occupational safety and sanitation), 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 expenditures.

2007~2009 Total Environmental Expenditures



	2007	2008	2009
Total	8,590	15,130	16,440

In 2009 Taipei fulfilled its commitment to environmental protection with a total environmental expenditure of NT$16,440 million, an increase of NT$1,310 million compared with the previous year.

Environmental Accounting Performance in Taipower's Thermal Power System in 2009

Unit: NT$ million

Category / Unit	Hsiehho	Linkou	Tunghsiao	Taichung	Hsinta	Nanpu	Talin	Tatan	Chienshan
Business operation cost	78.365	120.832	30.208	784.812	222.816	15.681	11.619	77.351	59.130
Cost involved in linking upstream and downstream suppliers and customers	1.587	0.000	0.000	0.176	1.631	0.029	0.030	0.138	0.000
Managerial cost	183.247	116.965	28.287	527.439	366.849	45.283	69.932	26.589	12.820
Research and development cost	0.000	0.000	0.000	48.394	0.000	0.424	0.000	-0.406	0.000
Social activity cost	1.482	0.081	10.009	34.631	2.863	3.005	1.955	1.957	0.000
Losses and compensation cost	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.064
Tax fees,energy taxes, and other expenses	75.148	20.715	0.347	82.892	57.604	0.027	63.344	0.092	13.906
Total	339.828	258.592	68.851	1,478.345	651.764	64.450	146.879	105.721	85.919

Introduction of Material Flow Management System

In 2008, Taipower introduced the material flow management system to its 10 thermal power plants. The idea is to use the "input-output" material balance concept to record the flow of material input and output to understand the level of resource utilization efficiency and environmental improvement. This system helps industries to reduce or more efficiently utilize material and energy.

The development of Taipower's environmental accounting system has changed from the mode of focusing on the financial-side to the mode of focusing on cost-side to analyze material input and output. This mode can effectively reveal the material utilization efficiency and demonstrate it using management performance indicators, thus allowing the company to make improvements in its management and control.

International Standards - Environmental Management System

Taipower established the environmental management system (EMS) in 1997. It was designed to enable Taipower employees to recognize the environmental impact that they might cause in their daily work and to understand what individual efforts could make the best contributions to environmental protection.

Taipower's environmental management system is designed to promote environmental protection activities through the PDCA (plan, do, check and act) cycle. It will enable each unit to reach toward clearer goals in environmental management. The Linko, the Taichung and the Talin Thermal Power Plants were the first three units that were certified by ISO 14001. As of the end of 2009, 58 units have passed ISO 14001 certification.

In order to ensure that ISO 14001 certified units actually achieve continual improvement, Taipower set up the "Guidelines for Performance Evaluation of Taipower Unit's Environmental Management System". In 2009, 23 ISO-14001 certified units were reviewed in accordance with the Guidelines and the requirements of pollution prevention and continual improvement. All reviewed units were found to be in compliance, and no major instances of non-conformance were found.

Promotion of Environmental Conservation

As flora and fauna depend on the environment around them for survival, the greatest threat to biodiversity is in the destruction of the natural environment. Biodiversity is an important indicator of a healthy natural environment. If the environment is impacted or destroyed, biodiversity will be directly influenced; and if the environment undergoes a great change, the preservation of genetic diversity will be difficult.

Taipower has always been concerned about the ecological environment, exclusive fishing rights, marine protection zones, greenification and tree planting issues. Not only has Taipower conducted long-term environmental studies and monitoring, but has also promoted a series of ecological research and environment-related projects. It is hoped that power plants can co-exist with the natural environment and that our future generations can continue to enjoy nature's beauty.

New Homes for Fish-Artificial Reefs

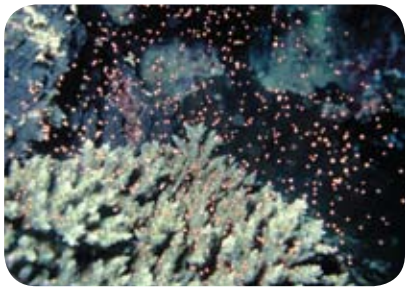
Every year, Taipower retires many old cement electricity poles. In the past, these poles were smashed into pieces and used for road-paving or filling material for building foundations. In recent years, Taipower has started to utilize these used electricity poles to build artificial reefs in coastal areas around its power plants. Over the past three years, Taipower has set up 2,833 artificial fish reefs in 11 offshore areas around its power plants. The effectiveness of modifying fishing grounds and creating resources has been positively received by the public.

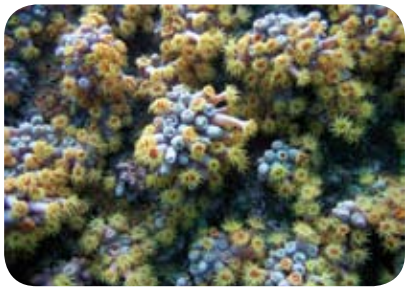
Number of Artificial Reefs Created by Taipower

Year	Amount	Release Location (county)
2007	1,120	Wanghaihsien of Keelung; Shenao, Aoti, and Yehliu of Taipei
2008	813	Tawuluen of Keelung, Shenao of Taipei; Paihsing of Miaol; Yungan of Kaohsiung
2009	900	Linyuan of Kaohsiung, Haikou of Pingtung, Wanggong of Changhua, Keelung Islet of Keelung
Total	2,833	11 reef areas

Fry Release – Sending Fry out into the Ocean

Taiwan's coastal fishery resources have been increasingly scarce in recent years. As Taiwan is an island nation, Taipower understands the importance of marine resources and the way that Taiwanese people rely on these resources. In recent years, while supporting the government's fishery policy of extending the cultivation and restoration of fishery resources, Taipower has began releasing and cultivating fry with high economic value. In the past 3 years, more than 3.2 million fry have been released by Taipower into the coastal waters nearby Taipower power plants.





Coral Preservation

The structures formed by the continuing growth of the coral create habitats for many marine organisms. The symbiotic relationship between the coral and the unicellular algae zooxanthellaealso produces a food source for many marine animals. Coral reefs are the most productive and biologically diverse ecosystems of the seas and are often called the “tropical rainforests of the seas”.

For the past several years, in addition to participating in the Kenting National Park’s “Hengchun Peninsula Coral Reefs Comprehensive Conservation Program”, Taipower has also commissioned the Academia Sinica to conduct the “Coral Reefs Ecology Monitoring Project at the 3rd Nuclear Water Inlets and Outlets” and has installed three underwater remote monitoring systems (since 2003) at the water intake of the 3rd Nuclear Power Plant. These remote monitoring systems allow Taipower to monitor the status of the coral reefs around the clock and to project live images of the reefs for public view at Taipower’s Southern Exhibit Hall.

Ecological Engineering Method

In order to keep the ecological environment intact and prevent the habitats and migratory paths of flora and fauna from being destroyed, Taipower, under the premise of safety, has made every effort to adopt the ecological engineering method in its construction projects based on the “ecologically-based and safety-oriented” principle, which replaces the conventional concrete-based construction method. In addition, the method of reducing construction size has also been adopted to minimize damage to the environment.

Taipower has pledged to adopt, under the premise of safety, the ecological engineering method in its future development and remediation projects on slopes or in forest areas as much as possible, The goal is to design engineering facilities suitable for local conditions and achieve the goals of safety, beauty, biodiversity and environmental protection.

Implementation of Internal Environmental Education

To help each Taipower employee establish a higher awareness of and appreciation for environmental protection and to increase involvement in such actions, Taipower has provided environmental education and training through the company's training institutes to all new and existing employees.

In 2009, 588 employees joined training sessions regarding the environmental management system, environmental protection regulations, waste management, and GHG surveys both in our own training institutes and at outside training classes.

In addition, if it was deemed necessary, each unit could invite outside environmental protection experts to deliver speeches and offer training. In 2009, totally 9,304 people attended these activities.

Environmentally Friendly Achievements

Air Quality Monitoring

Taipower installed the continuous emission monitoring system (CEMS) on each of its thermal power plant smoke stacks to monitor and control the emissions of air pollutants from the power plants. The CEMS not only helps the company gain information regarding the emission concentration, but also helps the company to maintain the pollution prevention devices at optimum condition and keep the amount of pollutants to a minimum.

Air Quality Monitoring Data Surrounding Thermal Power Plants in 2009

Power Plant	No. of monitoring stations	SO_2(ppm)	NO_2(ppm)	PM_{10} (μg/m^3)
Shenao	4	0.0032~0.0035	0.0087~0.0103	37.7~56.0
Hsiehho	3	0.0037~0.0057	0.0104~0.0121	48.6~54.4
Linkou	8	0.0034~0.0064	0.0103~0.0139	39.5~75.6
Tunghsiao	8	0.0034~0.0072	0.0093~0.0145	52.1~95.8
Taichung	11	0.0040~0.0060	0.0129~0.0190	47.7~75.0
Hsinta	6	0.0040~0.0050	0.0137~0.0182	76.1~87.2
Nanpu	3	0.0053~0.0084	0.0200~0.0247	79.6~84.5
Talin	5	0.0097~0.0119	0.0188~0.0248	85.8~94.0
Chienshan	3	0.0021~0.0026	0.0036~0.0047	32.0~51.1
Air quality standards		0.03	0.05	65

Note: The above data use annual average figures taken from the thermal power plants' air quality monitoring stations.

Air Pollution Prevention

Taipower has adopted a series of air pollution control and prevention measures to reduce air pollution. Taking into account the availability of space, technologies and finance, Taipower has made an effort by making improvements in generating units and installing advanced air pollution control facilities to cut the release of air pollutants down to the minimum level.

SO_x Emissions

Taipower has increased its consumption of sulfur-free natural gas. Its coal-fired and oil-fired power plants have all adopted low-sulfur fuels and have been installed with flue gas desulfurization (FGD) units which can remove over 90% of SO_x emissions.

NO_x Emissions

Taipower has already installed advanced low-NO_x burners on all new thermal units, in order to reduce the NO_x emissions at the source. In addition, high-efficiency equipment (selective catalytic reduction, SCR) was also installed, which can further reduce the concentration of NO_x emissions.

Particulate Matter Emissions

- Thermal power plants

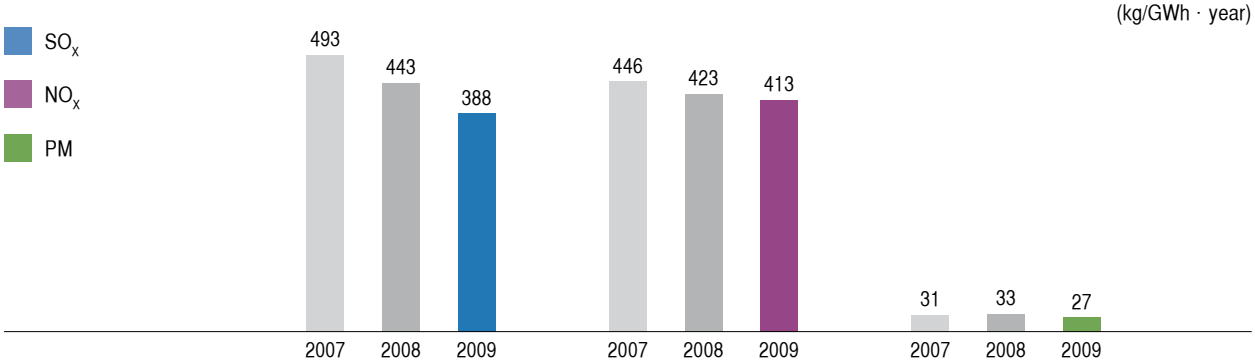
High-efficiency electrostatic precipitators (ESP) which are capable of removing 90-99.8% of particulate matter were installed. In addition, oil-fired units were also equipped with oil ash incinerators to incinerate the collected oil ash. The flue gas desulfurization (FGD) equipment installed on coal-fired units to remove the SO_x is also capable of removing some particulate matter.

- Coal yard

Taipower spent NT$1,000 million to build a wind-shielding fence around the coal yard and installed a sprinkler system to prevent coal dust from contaminating the surrounding area. The company began conducting the transportation and unloading of coal in a closed environment, as well as compacting its coal heaps and keeping road cleaned. For long-term storage of coal, a chemical is used to stabilize the coal surface, and trees have been planted around the yard to prevent the spreading of coal dust.

The Hsinta Thermal Power Plant has established 4 indoor coal domes. In the future, all new Taipower thermal power plants will use indoor coal domes and closed conveyor belts to further reduce coal dust.

Reduction of Air Pollutant Emissions in the Past 3 Years



Rainwater Collection and Wastewater Reuse

While adhering to the concept of water conservation, Taipower has been actively pursuing the goal of zero wastewater discharge. Rainwater collection (power plants and dormitories) and wastewater reuse projects are being promoted and integral planning has been implemented to reduce the use of tap water inside the power plants.

With effective implementation of these measures, in 2009 the amount of Taipower's wastewater was greatly reduced and the amount of rainwater collected was much higher than that of 2008 due to abundant rainfalls. In addition to saving an enormous amount on water expenditure, this also demonstrated Taipower's dedication and contribution to water conservation in Taiwan.

Performance of Thermal Power Plants' Wastewater Reuse

Unit: tons

Category		2008	2009
Reuse of power plants' rainwater		204,580	371,835
Reuse of treated wastewater	waste water treatment plant	808,815	610,106
	Coal yard wastewater treatment plant	246,408	227,365
	Sewage treatment plant	57,079	40,573
Reclamation of process water		0	177,535
Reclamation of boiler continuous blowdown		375,616	416,098

Waste Treatment and Resource Reuse

Taipower generates a great variety and amount of industrial waste every year, including coal dust, oil ash, waste wires and cables, construction waste, waste ceramic, waste sludge, etc.

Besides applying advanced waste processing technologies, conducting detailed evaluation during the planning stage of a waste reduction facility, and implementing 4R (reduction, recycle, reuse, and research) policy after its establishment, Taipower also set up the Waste Reduction Consultation Task Force in 1997 to promote and plan for company-wide industrial waste minimization efforts. Taipower also emphasizes 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 on a daily basis.

Reuse of Coal Ash

The majority of waste generated from Taipower's thermal power plants is coal ash (fly ash and bottom ash) and most of which can be reused to reduce the environmental burden. Based on Taipower's research, bottom ash can replace natural aggregates up to 90% for ditch repaving project .

Reuse of Gypsum

During the combustion process in the coal-fired power plant, the sulfur contained in the coal is converted into SO_X, and then emitted with the flue gas. To reduce air pollution, Taipower has installed exhaust desulfurization facilities at its three major coal-fired power plants (Linko, Taichung and Hsinta), which use limestone slurry to transform SO_x in flue gas into gypsum. The resulting 600 to 700 kilo-tons per year of gypsum produced by Taipower is then sold to local cement makers and fire retardant board makers through open bidding process.

Reuse of Other Waste

Other industrial waste such as cables, ceramic and metal scrap materials, etc., are being recovered and processed by waste disposal contractors through an open bidding process. In accordance with the Environmental Protection Administration (EPA) regulations, bidding contractors should be qualified Industrial Waste Processors and perform their reuse operations according to regulations to facilitate inspections by central and local authorities.

Reuse of Waste

Unit: tons

Category	Quantity	
	2008	2009
Cable	638,064	612,933
Ceramic	4,222	29,482
Iron	1,086,870	1,002,768
Copper	62,472	43,843
Aluminum	182,782	24,235
Others	233,586	83,914
Total	2,207,996	1,797,175

Control of Ozone Depleting Substances

Taipower's use of ozone depleting substances (ODS) comes mainly from its use of halon (HCFC) fire extinguishers. According to its 2009 inventory, Taipower still has about 95.846 tons of HCFC in stock. Following the international ODS restriction target stipulated in the Montreal Protocol, in 2010 Taipower set its goal of limiting annual consumption of HCFC to be 25% of the base amount (159.539 ODP tons). In the future, Taipower will comply with the government policy and regulations to gradually reduce the use of HCFC fire extinguishers to protect the ozone layer as part of our responsibility as a global citizen.

Environmental Protection Fines

Despite the fact that thorough and clear management and check plans have been formulated, in 2009 violation of environmental regulations still occurred. However, due to strengthening various environmental protection measures, reviewing environment risks and the events which might be fined, reinforcing checks and drawing up prevention measures, in 2009 the number of violations showed a marked decrease. In the future, Taipower will continue its efforts on this front to fulfill its commitment to environmental protection.

	2007	2008	2009
Pollution items	Marine, air, water, and waste.	Marine, air, water, waste, and environmental impact assessment.	Air, water, and waste.
Units fined or disciplined	Taipei County, Taichung City, Taichung County, Hsinchu City, Tainan City, Taoyuan County, Hsinchu County, and EPA of Kaohsiung County.	Taipei County, Taichung County, Pingtung County, Hualien County, Taoyuan County, Lienchieng County, Kaohsiung County, and EPA of Penghu County.	Kaohsiung County, Lienchieng County, Hsinchu County, Kaohsiung City, Taoyuan County, Changhua County, and EPA of Taichung County.
Penalties	50 fines, totaling NT$11.564 million.	28 fines, totaling NT$3.7345 million;1,301 EIA petitions, totaling NT$1933.206 million.	12 fines, totaling NT$979 thousand.

Green Buildings

Taipower conducts operations and provides services throughout Taiwan, and has construction and building projects going on all year round. If energy conservation measures can be implemented during construction of Taipower's buildings, great energy conservation results and reduced carbon emissions can be achieved throughout the life cycle of these buildings.

In terms of management structure and system, Taipower's current building projects, costing more than NT$50 million, have all complied with the government's "Eco City and Green Building Promotion " regulations: they acquired green building candidate certifications before starting the construction project and received green building labels after completion.

In 2009, 29 Taipower buildings obtained green building candidate certifications and 21 buildings received green building labels. In the future, Taipower will strive to meet the following goals:

- Introduction of new green building techniques: Continuously develop new techniques for designing green buildings to improve the energy conservation of new and existing buildings.
- Intelligent energy conservation buildings: Utilization of energy control software that integrates the control of power, HVAC, elevators and lighting, and uses an automated control system. This control system can effectively increase the efficiency of power consumption and reduce CO_2 emissions.
- Introduction of solar photovoltaic system: In the future, for new buildings that exceed a certain floor area, solar photovoltaic systems will be introduced in principle to increase the use of renewable energy.

Green Purchase

In order to realize the realization of the concept of co-existence and co-prosperity for environmental protection and economic development, Taipower, complying with the "Government Agency Green Purchase Program", has overseen each unit's green purchases of office paper, electronics, appliances and other items.

Taipower has also listed green purchase as one of the indicators of environmental management performance. After several years of effort, the outcome of Taipower's green purchase program performance has increased year by year and has made remarkable achievements in terms of the motto of "clean, reuse and energy-saving".

Safety of Nuclear Power Generation

Taipower complies with the government's nuclear power policy in placing the continued safe operation of the nuclear power generating units as the most important consideration. To safeguard the health and property of the public, meltdown of the reactor core and abnormal leaks of radioactive materials should be prevented. Regarding nuclear power plant decommissioning, Taipower will abide by the regulations stipulated in the "Nuclear Reactor Facilities Regulation Act " to complete decommission preparations within the legally allowed timeframe.

Every quarter, based on the "Guidelines for the Evaluation of Nuclear Safety Performance Indicators," Taipower conducts evaluations on its three nuclear power plants. The inspectors of the Atomic Energy Council also enforce site inspections on the statistic results of performance indicators and on nuclear safety performance.

The safety of the nuclear power reactors is monitored based on the 10 nuclear reactor safety performance indicators, with the threshold for each indicator being marked by easy to understand green, white, amber and red colors (green light means best performance and red light indicates worst performance) to enable the public to understand the status of nuclear power plant operations.

After review and approval by the Atomic Energy Council, the evaluation results are posted on its website: (http://www.aec.gov.tw/www/control/nuclear/index_04_1.php), as well as on the Taipower website (http://wapp4.taipower.com.tw/nsis/Safety-5.asp).

2009 Nuclear Safety Performance

Indicator \ Power Plant / Unit		First Plant		Second Plant		Third Plant	
		1	2	1	2	1	2
Initiating event	Unscheduled scrams per 7,000 hours(automatic or manual)	●	●	●	●	●	●
	Unscheduled scrams with loss of natural heat removal	●	●	●	●	●	●
	Unscheduled power changes per 7,000 hours > 20% rated power	●	●	●	●	●	●
Support system	Safety System Unavailability of High Pressure Core Injection System/ High Pressure Core Spray System(HPCI/HPCS)	●	●	●	●	●	●
	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 Diesel Generator (EDG)	●	●	●	●	●	●
	Safety System Function Failures	●	●	●	●	●	●
Barrier	Reactor Cooling System Activity	●	●	●	●	●	●
	Reactor Cooling System Identified Leakage	●	●	●	●	●	●

Note: ● green light: no safety significance; ○ white light: low-level safety significance;
● yellow light: medium-level safety significance; ● red light: high-level safety significance.

Nuclear Safety Enhancement

Implementing a Rigorous Quality Guarantee System

Designated employees are assigned to monitor the quality of design, purchasing, construction, experiment, training, etc. A complete standard operation procedure (SOP) has been set up to continue monitoring the implementation results.

Carrying out Comprehensive Nuclear Safety Regulation Measures

Each nuclear power plant should govern itself, along with receiving review from the main office, the Atomic Energy Council, and international peers. Taipower uses objective observation to discover areas that can be improved and uses systematic channels to follow-up on improvements and ensure that they have been completed.

Strengthening Nuclear Safety Culture

Through continuous training, accident analysis, experience feedback, and implementation of "prevention measures for personnel operation negligence", Taipower is trying to sharpen its employees' self-evaluation and self-regulation abilities to increase safety consciousness.

Upgrading Reliability of Facilities

Taipower has been dedicated to ① carrying out preventive maintenance and testing of facilities, ② replacing old facilities with high-efficiency and more reliable facilities, ③ enhancing and pursuing the best maintenance system, ④ keeping up with the passing on of experience and ⑤ absorbing international power industries' experience to upgrade its own maintenance capability.

Radioactive Waste Management

The operation of nuclear power plants can generate low-level radioactive waste (radwaste) and spent nuclear fuel. The low-level radwaste can be incinerated, compressed or solidified and stored properly in zinc-coated barrels. Under Taipower's strict control, in 2009 the amount of low-level radwaste was 251 barrels, which is the lowest figure in Taipower's history.

Handling of Low-level Radwaste

Before its final disposal, the low-level radwaste is incinerated, compressed or solidified and temporarily stored in the power plant.

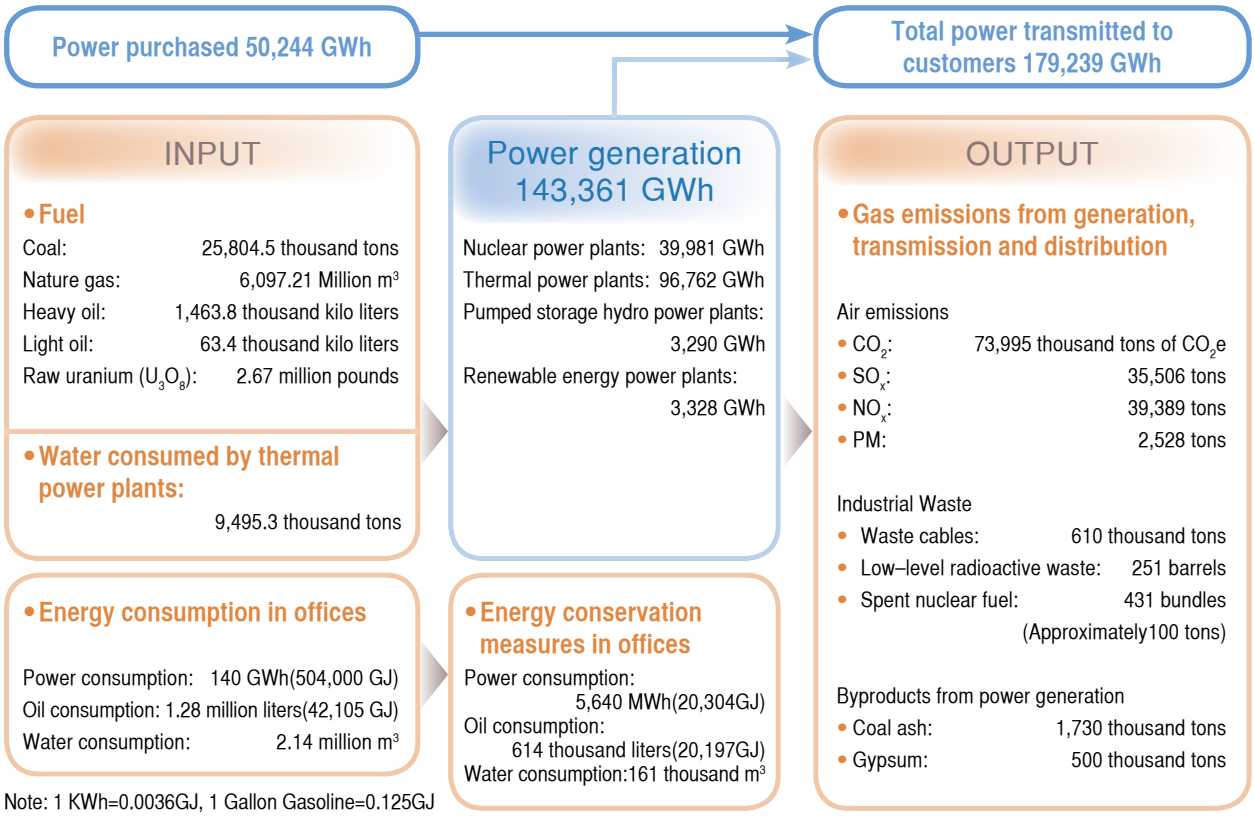
- Processing and Storage: To account for the demand of storage space and further improve the condition of the storage facilities, each nuclear power plant should improve its waste processing system and install incineration, compression and solidification facilities. In addition, the amount of waste generated should be reduced from the starting point. The amount of low-level radwaste was reduced from over 10,000 barrels to 251 barrels in 2009. (Each barrel contains 200 liters of waste.) Also, the large modern storage facilities constructed in the First, Second and Third Nuclear Power Plants can replace the old facilities, reducing the stress on storage space, and improving the storage quality.
- 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 or the environment. Internationally, multi-barrier disposal facilities for low-level radwaste have been widely adopted . Through man-made engineering structures combined with natural geological conditions, the low-level radwaste is stored in proper sites far away from residential areas. In accordance with the Radioactive Materials Management Act, Taipower has been looking for sites of final disposal. Under the supervision of the Ministry of Economic Affairs, in 2009, Taipower's Report on Recommendation of Site Selection for Candidate Sites was posted on the Ministry of Economic Affairs website. Taipower is currently collecting, reviewing and responding to outside opinions. After site selection is approved in the future, it will take about 5 years to complete the design, construction and application for operation permits.

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:

- Pool Storage: After the spent nuclear fuel is removed from the reactor, it is stored in a spent fuel pool that cools the fuel and provides shielding from radiation. The storage pool at each of the First, Second and Third Nuclear Power Plants can accommodate the spent nuclear fuel produced over a 30-year period of operation of each reactor, while that of the 3rd Nuclear Power Plant can accommodate up to 40-year worth of operation.
- Dry Cask storage: The storage facilities in the First and Second Nuclear Power Plants are sufficient for storing spent fuel produced during the 40-year operation of the reactors. The international nuclear community has 20 years of experience in safe operation of dry storage facilities, which are currently under planning at both nuclear power plants. As of the end of 2009, there were 22 countries with 93 dry storage facilities. So far, there have not been any incidents of harm to the environment or people. The dry storage facility at the First Nuclear Power Plant obtained a construction permit in 2008 and the construction work began in 2009.
- Final disposal: In compliance with the Radioactive Materials Management Act, Taipower has formulated "the final disposal plan for spent nuclear fuel" and implemented relevant tasks according to schedule. At the end of 2009, the Preliminary Technical Feasibility Assessment Report was completed and submitted to the Atomic Energy Council for review. In the future, Taipower will continue to work on domestic geological survey and conduct technical projects. Taipower will also keep following international developments and seek opportunities for international cooperation.

Environmental Footprints of Taipower's Operations



Note: 1 KWh=0.0036GJ, 1 Gallon Gasoline=0.125GJ

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Disclosure on Management Approach		57,67

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EN1	Volume of materials used	78
EN2	Recycled materials	73,74
EN3	Direct primary energy consumption	78
EN4	Indirect primary energy consumption	78
EN5	Energy conservation	64
EN6	Initiatives for energy-efficiency and renewable energy	35,43,63,64
EN7	Initiatives for reducing indirect energy	64
EN8	Water withdrawal	78
EN9	Effect of water withdrawal	70
EN10	Water recycled	73
EN11	Land assets in sensitive areas	None
EN12	Impact on biodiversity	66,69,70
EN13	Habitats protected or restored	69,70
EN14	Strategies for biodiversity	69,70
EN15	Endangered species	70
EN16	Greenhouse gas emissions	58
EN17	Other greenhouse gas emissions	61
EN18	Initiatives to reduce greenhouse gases	57-62
EN19	Ozone-depleting substance emissions	74
EN20	NO_X, SO_X and other air emissions	72,78
EN21	Water discharge	78
EN22	Waste by disposal method	73,74
EN23	Significant spills	None
EN24	Movements of hazardous waste	77,78
EN25	Habitats affected by discharge and runoff	70
EN26	Environmental impact mitigation	70-72,75
EN27	Packaging materials	Not applicable. Taipower is a public power utility.
EN28	Non-compliance sanctions	74
EN29	Environmental impacts of transport	58
EN30	Environmental protection expenditure	67
Social Indictors (1): Labor Practices & Decent Work		
	Disclosure on Management Approach	48
LA1	Breakdown of Workforce	5,51
LA2	Employee turnover	Nearly all workers retired at mandatory age.
LA3	Benefits to full-time employees	51,52
LA4	Employees with collective bargaining agreements	52
LA5	Minimum notice periods	51
LA6	Workforce in joint health committee	48
LA7	Occupational injuries and absenteeism	50
LA8	Training on serious diseases	49
LA9	Trade union agreements on health	52
LA10	Training per employee	25,49
LA11	Programs for lifelong learning	25,26
LA12	Career development	25
LA13	Composition of governance bodies	51
LA14	Gender pay disparity	51
Social Indictors (2) : Human rights		
	Disclosure on Management Approach	50,51
HR1	Human rights clauses in investment	Not applicable
HR2	Supplier screening on human rights	50
HR3	Training on human rights	26,51
HR4	Discrimination	51
HR5	Association and collective bargaining	52
HR6	Child labour	None
HR7	Forced labour	None
HR8	Training for security personnel	50
HR9	Violations of rights of indigenous peoples	None
Social Indictors (3): Society		
	Disclosure on Management Approach	42,43
S01	Impact on communities	42-47
S02	Corruption risks	23
S03	Anti-corruption training	26

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S04	Actions against corruption	26
S05	Lobbying	None
S06	Political donations	None
S07	Anti-competitive behaviour	Not applicable
S08	Regulatory non-compliance sanctions	74
Social Indictors(4):Product responsibility		
	Disclosure on Management Approach	32
PR1	Health and safety impacts along product life cycle	23
PR2	Non-compliance with health and safety standards	None
PR3	Product information	6
PR4	Non-compliance with product information standards	None
PR5	Customer satisfaction	34
PR6	Communication programmes	32,33,36
PR7	Non-compliance in marketing practices	Not applicable
PR8	Complaints regarding customer privacy	None
PR9	Product non-compliance	Not applicable
Electric Utility Supplement		
EU1	Installed capacity, broken down by primary energy source and by regulatory regime	6
EU2	Number of residential, industrial, institutional and commercial customer accounts	5,28
EU3	Length of above and underground transmission and distribution lines by regulatory regime	14,37
EU4	Allocation of CO_2e emissions allowances or equivalent, broken down by carbon trading framework No relevant laws and regulations so far in Taiwan	
EU5	Management approach to ensure short and long-term electricity availability and reliability	37,38
EU6	Demand-side management programs including residential, commercial, institutional and industrial programs	13
EU7	Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	24,37
EU8	Provisions for decommissioning of nuclear power sites	76
EU9	Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime(MW)	13,29

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EU10	Capacity saved from demand-side management programs(MW)	63,64
EU11	Electricity saved from demand-side management programs(MWh)	28,64
EU12	Average generation efficiency of thermal plants by energy source and by regulatory regime	30
EU13	Transmission and distribution losses as a percentage of total energy	30
EU14	Biodiversity of offset habitats compared to the biodiversity of the affected areas	None
EU15	Programs and processes to ensure the availability of a skilled workforce	17,25
EU16	Number of employees, of contractors	None
EU17	Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors	None
EU18	Stakeholders participation in the decision making process related to energy planning and infrastructure development	31
EU19	Approach to managing the impacts of displacement	None
EU20	Contingency planning measures, disaster/ emergency management plan and training programs, and recovery/ restoration plans	37-41
EU21	Number of people physically or economically displaced and compensation, broken down by type of project	None
EU22	Programs, including those in partnership with government, to improve or maintain access to electricity and customer support services	37,38
EU23	Practices to address language, cultural, low literacy and disability related barriers to accessing and safely using electricity and customer support services	None
EU24	Number of injuries and fatalities to the public involving company assets, including legal judgments, settlements and pending legal cases of diseases	74
EU25	Percentage of population unserved in licensed distribution or service areas	None
EU26	Number of residential disconnections for non-payment, broken down by duration of disconnection and by regulatory regime	None
EU27	Power outage frequency	28,30
EU28	Average power outage duration	28,30
EU29	Average plant availability factor by energy source and by regulatory regime	30

Integrity Caring Innovation Service