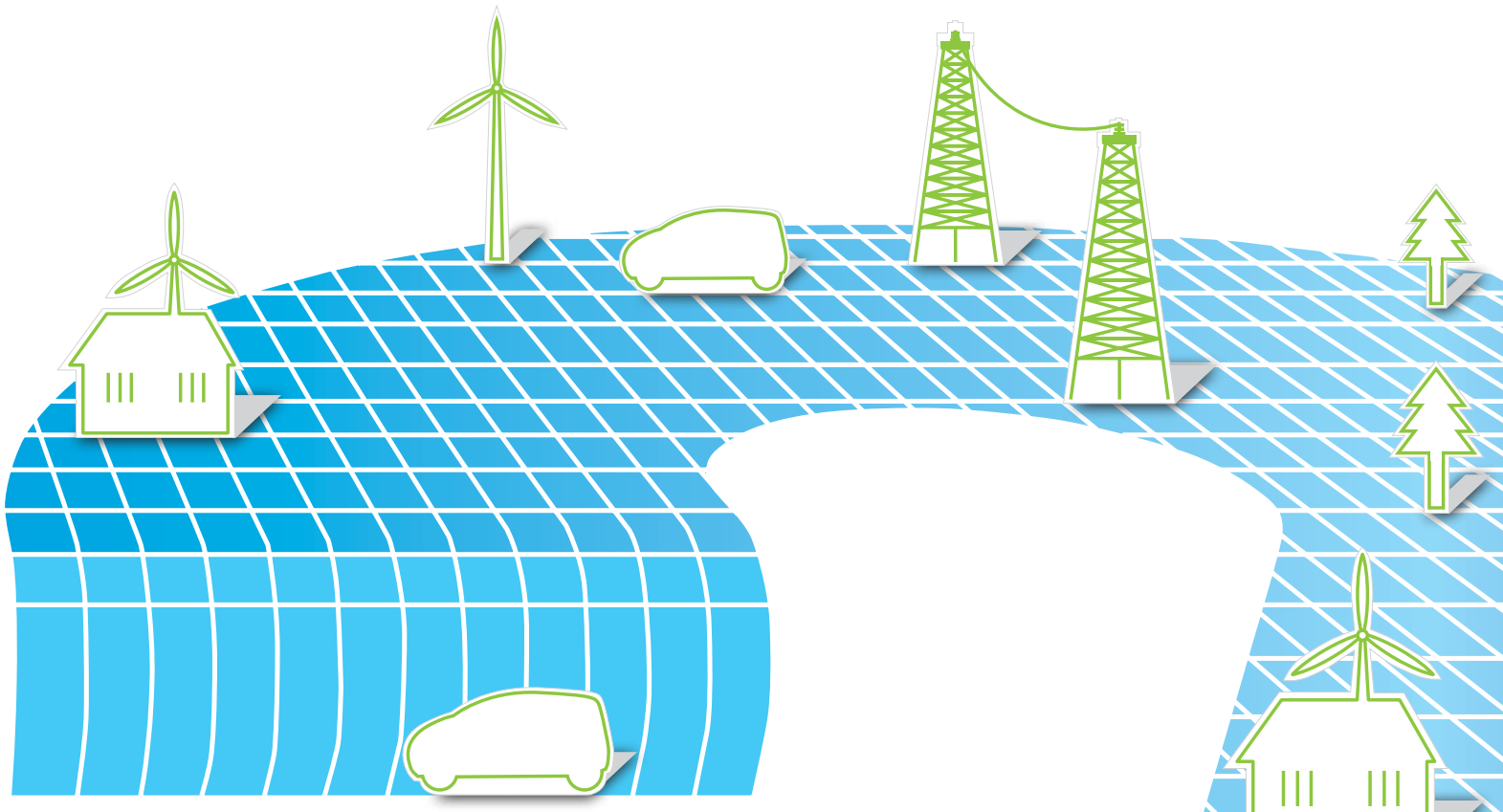
Taiwan Power Company Sustainability Report

2011



Editorial Policy

This is the fifth issue of the annual Sustainability Report published by the Taiwan Power Company ("Taipower"). This edition of the report follows the latest G3.1 guidelines of the Global Reporting Initiative (GRI) as well as the accountability principle standard (APS) set forth in AA 1000 APS (2008). The information compiled and disclosed here is based on three principles: inclusivity, materiality and responsiveness.

The focus of Taipower Sustainability Report 2011 is on "Sustainability Issues". The purpose of this report is to demonstrate to the public and the stakeholders Taipower's dedication and achievements in the management and implementation of sustainability through the following 3 aspects: management economy, social responsibility and environmental sustainability.

Period Covered by the Report

January to December, 2010

Scope of the Report

This report contains data and information regarding sustainability issues and achievements within the areas of management economy, social responsibility and environmental sustainability. Taipower has voluntarily adopted the GRI G3.1 Guidelines and AA 1000 standard for the preparation of this report and self-declared that this report conforms to GRI level A requirements.

This report has not been verified by an independent third-party but the accuracy of the financial, environmental and social data and information have been ensured through a strict mechanism of internal controls and checks.

Inquiries

This report is available in both Chinese and English. The complete report (in the PDF format) can be downloaded from the Taipower website (http://www.taipower.com.tw/). Our next sustainability report is planned for publication in the third quarter of 2012.

Taipower sincerely hopes that the publication of this report will provide interested parties with a better understanding of Taipower's sustainability efforts. Your suggestions or comments regarding this report are welcomed by Taipower and you may contact us through one of the following methods:

Taiwan Power Company

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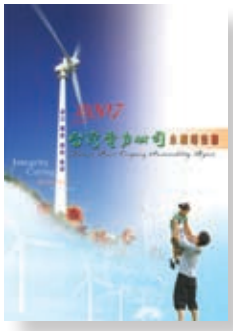

2007 Sustainability Report/
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Profile of Taipower

The Taiwan Power Company ("Taipower") was established on May 1,1946. 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 sell this to the customer.

As of the end of 2010, the total installed capacity of Taiwan's power system reached 40,912 MW, of which Taipower accounted for 32,694 MW and IPPs for 8,218 MW. The major energy sources comprise hydro, thermal, nuclear and renewable. The power grid includes 580 substations and transmission & distribution lines totaling 352,000 KM, providing electricity to a population of 23 million people in Taiwan, and the offshore islets of Penghu, Kinmen and Mazu.

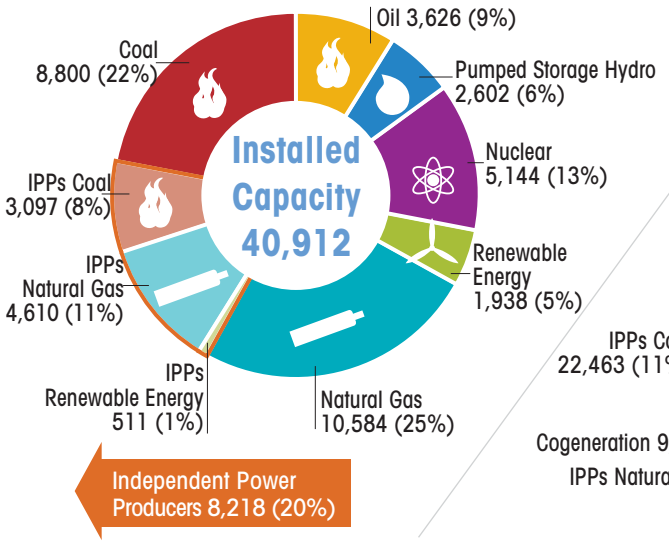
Taipower is a public utility shouldering the obligation of power supply. To meet future power demand and ensure sufficient power sources, in recent years, Taipower has been actively promoting various large-scale power development projects in the hope that the generation mix for base, mid and peak loads can be improved and the reasonable reserve margin target figure of 16% can be maintained. To establish a sound power grid, the implementation of the Seventh Power Transmission and Substation Project and the Sixth Distribution Project will continue. In addition, a smart power grid will be developed in phases to cope with the requirements of high-tech industries for power quality.

Taipower understands quite well that it will confront challenges from 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.

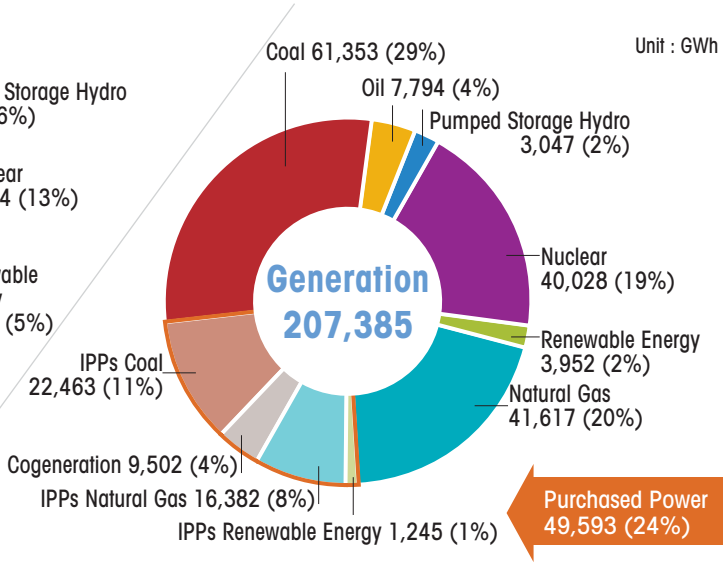
Recently, Energy Conservation and Carbon Reduction have become important management issues for the global power industry. In order to demonstrate its concern about the global warming issue, and to comply with the government's Sustainable Energy Guidelines, Taipower continues to conduct the tasks of improving power unit efficiency, reducing CO_2 emissions, increasing its ratio of renewable energy and promoting green electricity. In addition, Taipower has formulated the Greenhouse Gas Regulation Strategy to undertake the measures of greenhouse gas reduction and inventory monitoring to fulfill its responsibility as a corporate citizen in the international power industry.

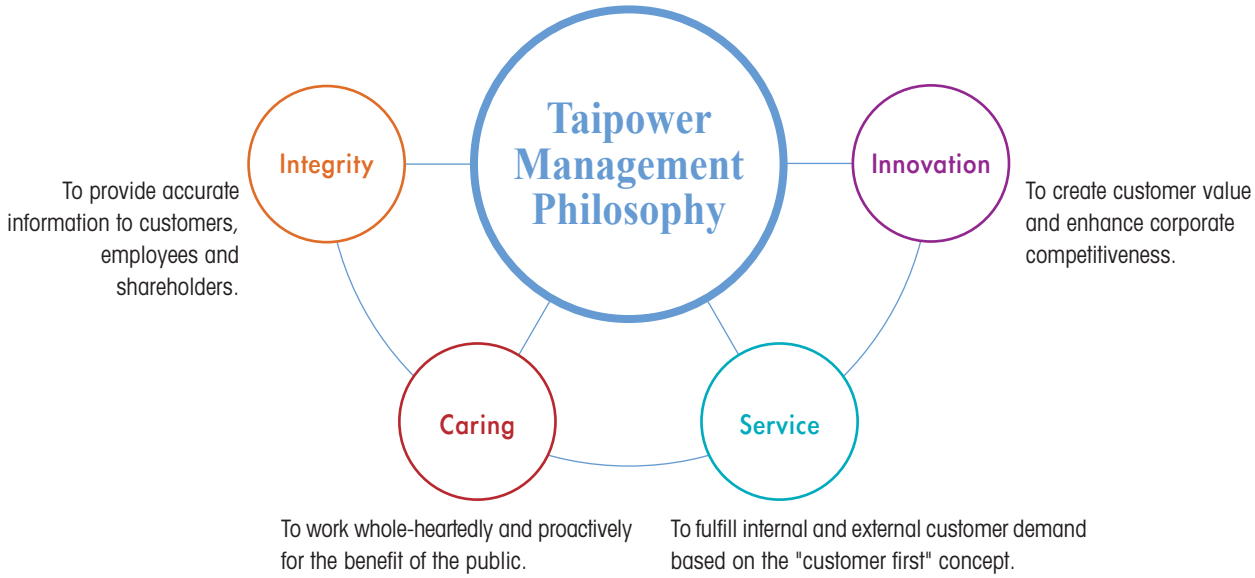
Installed Capacity and Generation Mix in 2010

Unit : MW



Unit : GWh





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

Taipower Mission

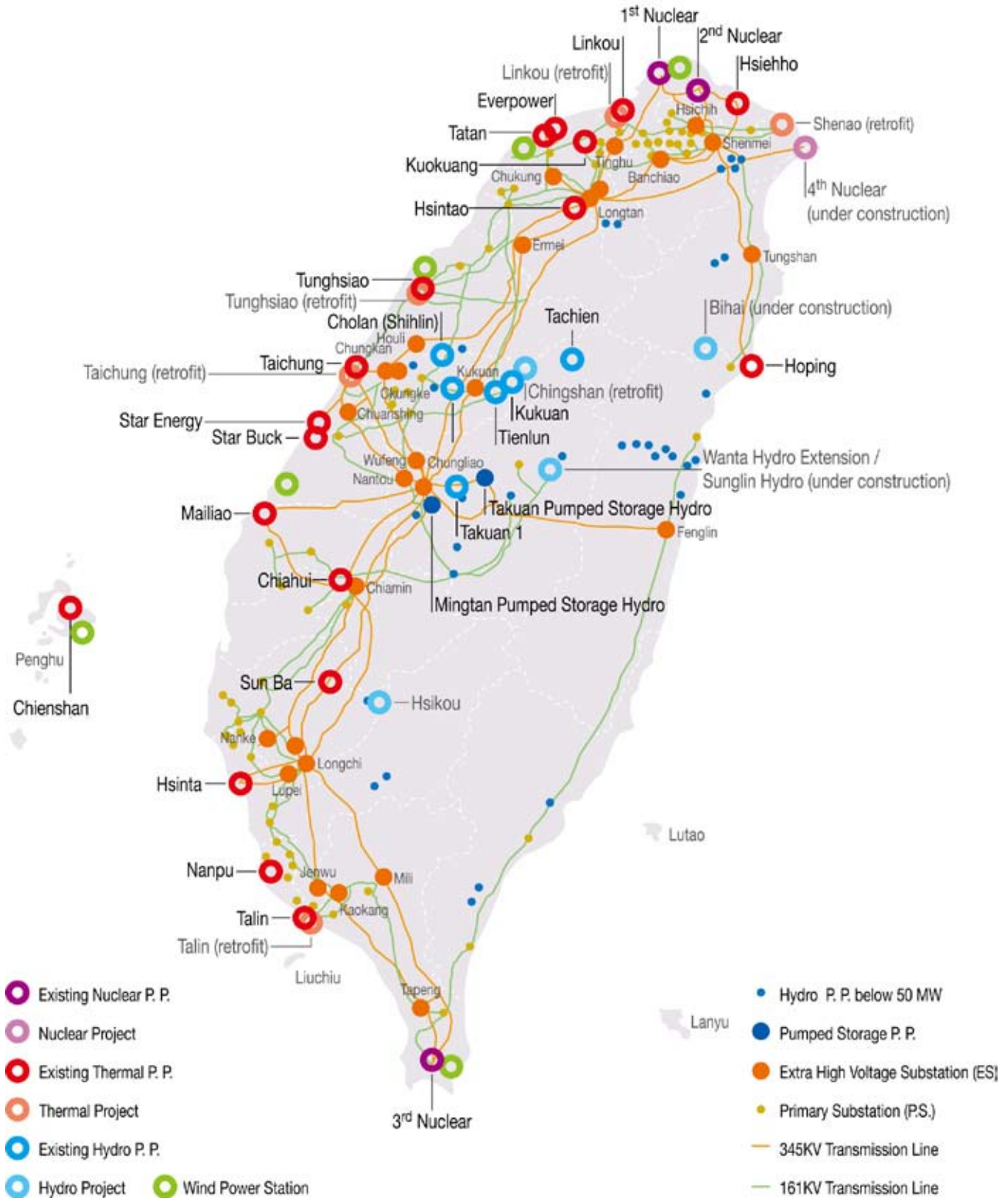
To offer diverse services to satisfy our customers' demands, to promote the nation's competitiveness, and to protect the interests of our employees and shareholders.

Taipower Vision

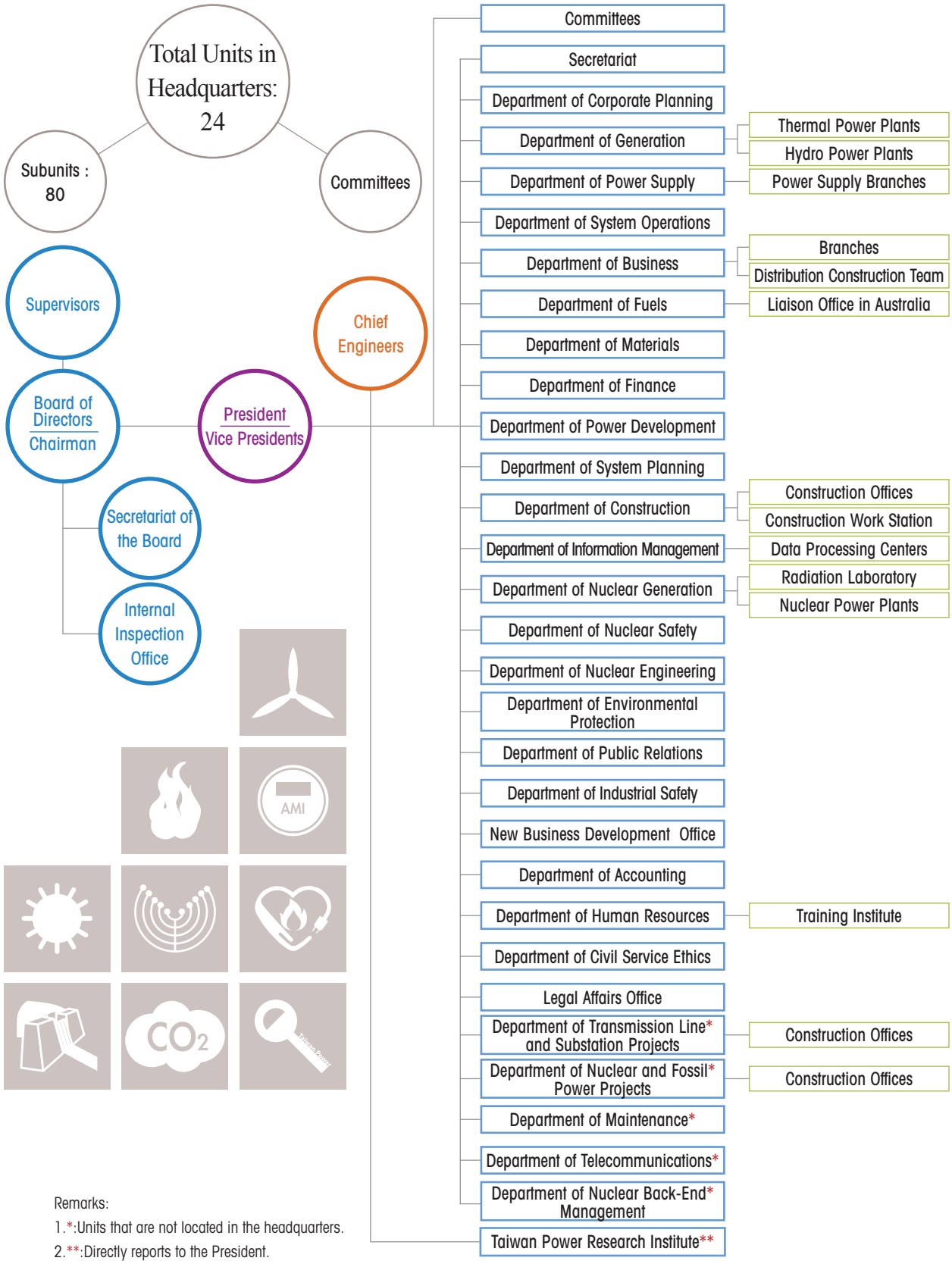
To become a prestigious and world-class power utility group.

Founded : May 1,1946
Coverage : Taiwan, Penghu, Kinmen, Matsu areas
Capital : NT$330 billion
Stock : 96.92% government-owned, 3.08% public-owned
Total assets : NT$1,609 billion
Employees : 26,828
Customers : 12.58 million
Installed capacity : 40,912 MW
(Taipower + Independent Power Producers)
32,694 MW (Taipower)
Power generated and purchased : 207,385 GWh
Energy sales : 193,313 GWh

Power Development and Power Grid Map



Taipower Organization Chart



Remarks:

1.*:Units that are not located in the headquarters.

2.**:Directly reports to the President.

Letter from the Chairman

Another year has flown by. This is Taipower's fifth Sustainability Report, and as before, we will provide full disclosure of the company's operations and share our efforts in the area of governance with accountability, our actions to promote environmental sustainability as well as our performance in maintaining and strengthening our community relations. We hope this comprehensive report, which incorporates stakeholders' perspectives, will give the public a deeper understanding of our efforts to balance economic, social and environmental expectations.

In recent years, Taipower has encountered many uncertainties in its business. Climate change has become a key international issue, drawing society's attention to the means of power production and operation; the high population density in Taiwan has led to power infrastructure projects being blocked at every turn and forced delays in building power supply facilities; despite the calls for saving energy and reducing carbon emissions, there has been no serious attention given to the additional costs of promoting energy conservation and carbon reduction measures; and since domestic electricity tariffs do not reasonably reflect the costs of supply according to the "user pays" principle, low rates are having an impact on Taipower's financial soundness and sustainable development. Faced with these challenges, Taipower is aggressively strengthening its business structure, improving energy source mixture, boosting our productivity and strengthening our customer service. At the same time, we are also studying new value chain solutions in order to supply the electricity needed for national and social development without compromising environmental and ecological protection.

The global economy showed clear signs of recovery in 2010. The domestic economy grew by 10.9%, and power demand went up by 7.9% as well. Unfortunately, this growth has led to rising fuel prices. Our fuel costs in 2010, for example, were NT$48.2 billion more than in 2009. Due to compliance with government policy, Taipower was unable to make timely adjustments in its tariff schedules. Despite our efforts to control costs, the increase in fuel costs for power generation led to deeper losses in 2010 compared to 2009.

Despite the increasingly difficult financial situation at Taipower, our employees are finding new ways to expand sources of income and reduce expenditures and have committed themselves to the goals of providing a stable power supply, supporting national economic growth and promoting national welfare. We achieved many outstanding results in 2010 while continuing to fulfill our corporate social responsibility. These included:

1. Taipower sought ways to reduce the environmental impact from new power infrastructure projects. At the Tatan Gas-fired Thermal Power Project, for example, Taipower needed to supply the power demand of northern Taiwan, cooperate with the government's energy diversification policy and increase the ratio of power generated from natural gas. The Tatan site was therefore chosen for a gas-fired power plant with 6 gas-fired combined-cycle units, with an installed capacity of 4,384 MW. Upon its completion in 2010, Tatan became the largest gas-fired combined-cycle power plant in the world. This power plant produces a smaller environmental impact than other thermal power plants while also helping to balance power supply and demand in northern Taiwan..

2. In response to the Executive Yuan declaring 2010 as the "Energy Conservation and Carbon Reduction Year" for Taiwan, Taipower set up 10 task forces, including the "Energy Conservation and Carbon Reduction Report Meeting", the "Low-carbon Energy Expansion Task Force", the "Existing Unit Efficiency Improvement Task Force", the "Transmission & Distribution Efficiency Improvement Task Force," etc. Energy conservation and carbon reduction strategies were integrated, key issues were studied and appropriate action plans were implemented. The green technologies introduced through these task forces will help transform Taipower into a green e-power utility.

3.The "Power Tariff Discounts Incentive for Energy Conservation" measure was continued in 2010. Energy conservation competitions in counties and cities were held to raise customers' willingness to engage in energy conservation. In addition to receiving basic discounts for successfully reducing their power consumption during the current time period, customers living in the cities or counties that won the top 3 prizes in the nationwide energy-conservation competition could enjoy an additional competition discount of 5%, 10% or 15%. Encouraged by this incentive measure, residents reduced their overall power consumption by 3.918 billion KWh compared to 2009.The savings translated to power discounts of NT$7.409 billion and reduced CO_2 emissions by 2.4 million tons. Despite the company's financial troubles, Taipower continued to promote energy conservation incentive measures to its customers, demonstrating Taipower's attitude of accountability in terms of energy conservation and carbon reduction.

4.Taipower successfully hosted the "18th Conference of the Electrical Power Supply Industry" (CEPSI).The theme of the conference was "Challenges and Opportunities of the Electric Power Industry in an Uncertain Era". Power-related government officials, scholars and experts from Taiwan and abroad were invited to attend the conference. Through the sharing of electricity industry management experience and electricity-related technologies, delegates sought a solution that would balance protecting the environment with economic development. The conference attracted a total of 1,208 participants from 29 countries. This was the first time that Taipower hosted such a large international conference and the first time that the international electric power industry gathered in Taiwan. The success of the conference helped boost Taiwan's visibility and national image.

Faced with the challenge of developing a low-carbon economy, Taipower must not only provide a stable power supply but also think from a sustainable energy management perspective: discovering how to raise the efficiency of power generation, transmission, distribution and consumption even as power demand grows and the economy stalls. This is why this year's Sustainability Report includes the following 8 key sustainability issues: improving energy source mixture, developing renewable energy, strengthening nuclear power safety, strengthening power grid structure, coping with the challenges of climate change and greenhouse gas emission reduction, cultivating electrical power professionals, ensuring fuel supply security and stability, and promoting reasonable tariff schedules. We have not only defined our future goals for these key issues but have also stated our commitment to meet them. We plan on accomplishing our goals year after year thanks to the insights and encouragement we receive from our stakeholders.

Taipower is now applying various innovative solutions and building corporate partnerships to fulfill our commitment to environmental sustainability and social responsibility in an age filled with uncertainty. At the same time, we are carefully planning the future of power system development in Taiwan and stabilizing our business operations to achieve a triple win for energy, environment and economy, thus providing the people of Taiwan with a richer and more comfortable quality of life. Taipower not only promotes the economic growth of Taiwan, but also pledges to become an outstanding corporate citizen that drives society's progress. Your continued support for Taipower, along with your comments and suggestions, would be welcome and appreciated.

Sincerely,
Chairman

Edward K M Chen

Key Issues of Sustainability

The sustainable development philosophy of Taipower is to enhance energy efficiency through continuing improvement in professional knowledge and technologies, using more renewable energy and introducing advanced clean energy technologies to provide the public with reliable, high-quality power service. Taipower believes that the sustainable development of the power industry must give consideration to "energy security", "economic development" and "environmental protection" in order to satisfy the needs of future generations.

Sustainable Development Philosophy

Utilize the Earth's limited natural resources efficiently. Support national economic development and social progress with minimum power development and highly efficient management performance.	Pay attention to the balanced development of energy security, economic efficiency and environmental quality while engaging in power development projects.	Base decisions on the management philosophy of integrity, caring, innovation and service to fulfill corporate social responsibility and share a bright future with stakeholders.

Commitments to Sustainable Development

Changing Energy Source Mixture

An energy source mixture once dominated by fossil fuels has been gradually changing. Taipower is investing in high-efficiency generation facilities such as super-critical coal-fired units and combined-cycle gas turbines, increasing the ratio of power generated from natural gas and developing pragmatically renewable energy to create more cost-effective and clean energy options.

Changing Technologies

Continue to explore and master advanced technologies of the power industry. Taipower's major goals for advanced technology development are to upgrade efficiency, cut down pollution and reduce costs. Taipower will keep forging ahead and seeking relevant cooperation to enable the public to understand the advancement and advantage to be brought by electric technologies.

Changing Attitudes

We will listen to the voices of our stakeholders with an open mind especially when concerning the safety and health of the public and employees. Despite strict controls, work safety incidents still occurred in 2010 that led to public uneasiness. We will take more precautions and adopt a proactive attitude to maintain and satisfy the safety requirements of our stakeholders and to promote the consensus and participation of all employees.

Unchanging Moral Values

All Taipower employees will continue to uphold the philosophy of "Integrity, Caring, Innovation and Service" to devote themselves to providing highly ethical and professional service to satisfy the customer's diversified requirements.

Selection of Sustainability Issues

The emphasis in this year's report is on the selection and response to key sustainability issues. We believe this will benefit and help Taipower in its management and its coping with the challenges brought by rapid changes of society and the environment. Through the following 4 stages of discussion, the sustainable issues to be disclosed in this report were identified.

Stage 1

Clarify, comprehend and compile 2010 information from the following sources:

- Relevant laws and regulations
- Stakeholders' (internal and external) feedback and suggestions
- Media reports from newspapers, magazines and the Internet
- Organizational representatives
- International power industries

Stage 2

The "Sustainability Issues Meeting" was convened with representatives from the "Management Development Promotion Team", "Sustainable Environment Promotion Team" and "Social Responsibility Promotion Team". After a comprehensive discussion in accordance with Taipower's sustainable development principles and strategies and management development direction, each aspect of sustainability issues and key sustainability issues were confirmed. The importance of the issues was based on:

- Impact on future Taipower management development
- Level of concern of the public and stakeholders
- Taipower's sustainability principles and their impact on the economy, environment and society

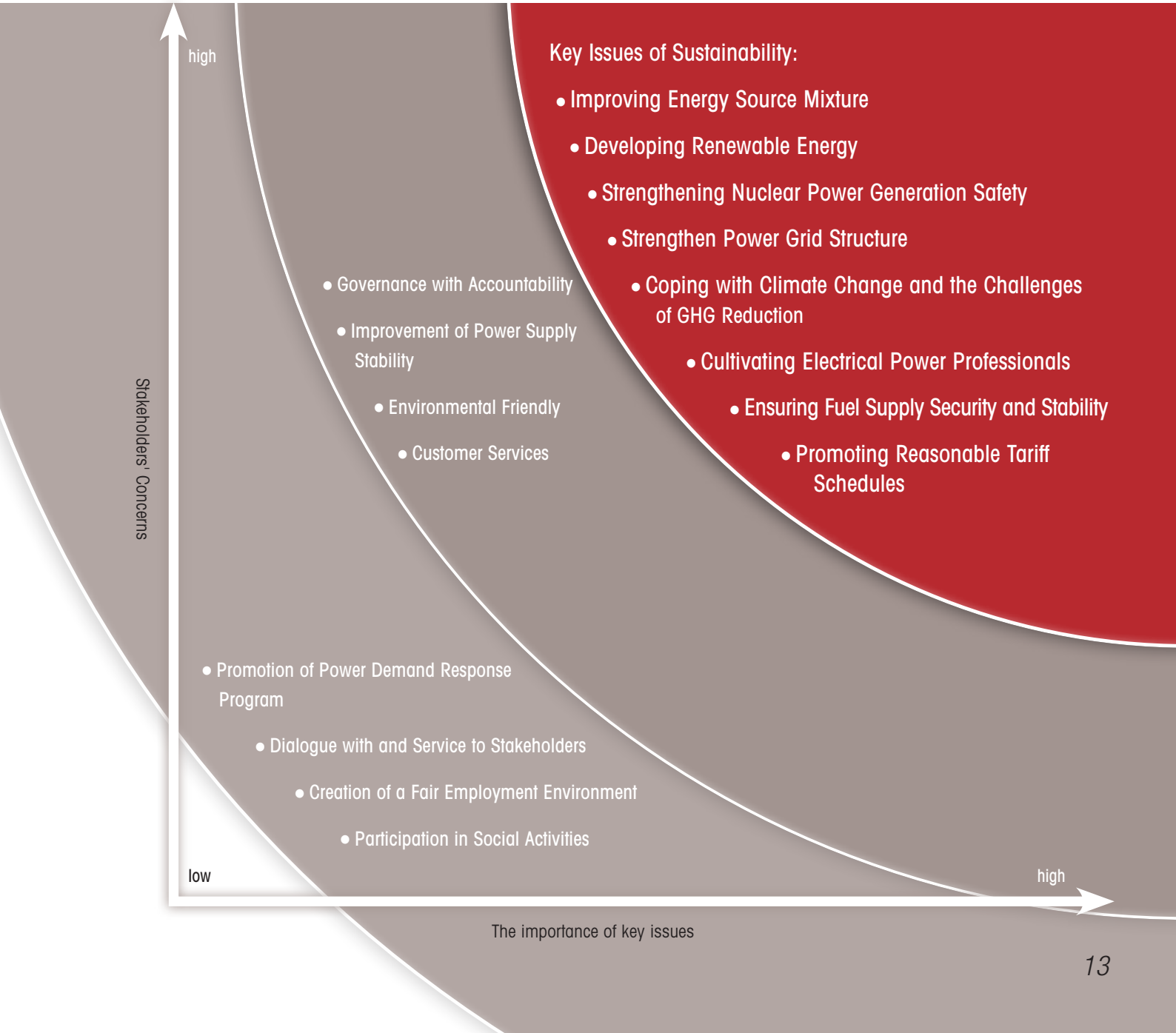
Stage 3

The conclusions from the discussions were narrowed down to become the "Taipower Sustainability Issues Matrix". To ensure the completeness and accuracy of the issues, representatives from the sustainability promotion teams worked with the relevant units to define the issues and framework of the Taipower Sustainability Report 2011.

Stage 4

The members of Taipower Sustainable Development Committee conducted the final review to ensure the completeness and accuracy of "sustainability issues" and "response information", while also taking into consideration of the stakeholders' viewpoints.

Taipower Sustainability Issues Matrix



Key Sustainability Issues and Response

In the 2010 Sustainability Report, Taipower listed the key sustainability issues for sustainable development in the future. Taipower also proposed its commitments, future goals as well as corresponding strategies and action plans.

Key Sustainability Issue	Commitment
Improving Energy Source Mixture (p.29)	• Provide abundant energy sources and balance regional power supply.
Developing Renewable Energy (p.33)	• Reduce dependence on imported energy, diversify energy sources, improve energy self-sufficiency and reduce CO_2 emissions.
Strengthening Nuclear Power Generation Safety (p.34)	• Strengthen the safety of nuclear power generation, improve operational performance and ensure public safety.
Strengthening Power Grid Structure (p.30)	• 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.
Coping with the Climate Change and the Challenges of Greenhouse Gas Reduction (p.45)	• Progressively implement "Taipower GHG Control Strategy" to reach the reduction goals set by the government.
Cultivating Electrical Power Professionals (p.61)	• Continue to cultivate electric power professionals and promote the passing on core technologies to cope with the human resource transition.
Ensuring Fuel Supply Security and Stability (p.31)	• Strengthen energy supply security to ensure a stable fuel supply for power generation.
Promoting Reasonable Tariff Schedules (p.80)	• Continue to disclose information related to operations to enhance the public's understanding of Taipower; establish a reasonable tariff schedule adjustment mechanism and promote reasonable tariff schedules.

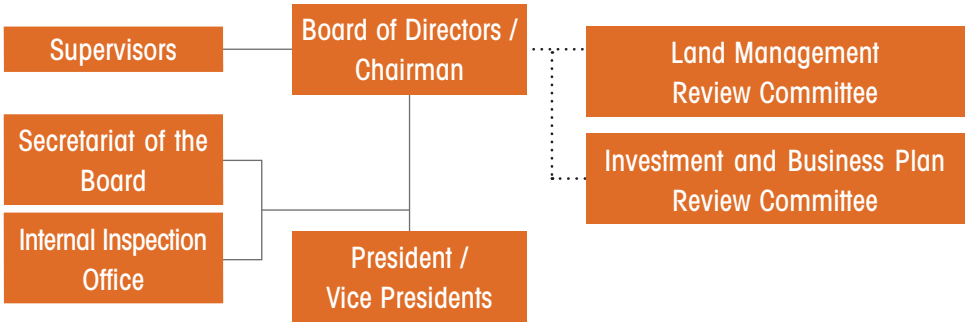
Taipower has continued to invest manpower and resources into these key sustainability issues in order to realize our commitments and goals. To respond to outside changes as well as issues that have drawn stakeholders' concern, the Sustainability Development Committee also meets during the year to discuss adjustments or additions to key sustainability issues. For 2011 we added "Strengthening nuclear power safety" as a key sustainability issues. The corresponding commitments and goals were also defined.

Goal	2010 Performance Achievements
• Increase base load capacity to 28.47 GW in 2010, accounting for 54.4% of Taipower system.	• The environmental impact assessment for the "Talin Power Plant Retrofit Project" granted conditional approval for the installation of two 800MW super-critical coal-fired units.
• Wind power: Install at least 200 wind power turbines or reach a total installed capacity of 300 MW by the end of 2011. • Solar photovoltaic system: Install 10,000 kWp of the solar power system by the end of 2011.	• 38 wind turbines were installed in 5 locations with a total installed capacity of 69.4MW. • Solar energy was continually synchronized to the power system.
• Continue to strengthen and improve the comprehensive safety assessment of nuclear safety. • Reinforce multiple natural hazard prevention drills. • Establish ultimate response guidelines for generators. • Streamline manpower/operation and strengthen nuclear power generation safety. • Strengthen promotion and communication for nuclear power generation to the public.	• In 2010, the 6 units of the three nuclear power plants generated in total 40,029 GWh without any automatic scram. The average capacity factor was 92.32%. All of these set a new record for nuclear power generation. Carbon reduction of this year reached 34 million tons. • The Third Nuclear Power Plant Unit 1 was shutdown to undergo EOC-19 outage. Before its shutdown, the unit operated in full fuel cycle continuously for 539 days.
• Implement the 7th Power Transmission and Substation Project, with an investment estimated to be NT$238.9 billion over 6 years responsible for constructing and expanding 130 substations with a total capacity of 23,560 MVA, and total length of transmission lines reaching 2,370 ckt-km.	• Introduced new transmission and substation technologies to upgrade the capacity of main transmission lines. • In 2010, the project completed a total capacity of 4,054 MVA of new and expanded 16 substations. The total length of new and expanded transmission lines reached 372 ckt-km.
• Fulfill the carbon reduction goal stipulated in the "National Master Plan 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.	• Participated in the stipulation of national policy on "Planning for the Adaptation Policy Frameworks for Climate Change" and presented 5 action plans on national adaptation for climate change. • Implemented "Hsinta Thermal Power Plant's "Adaptation for Climate Change Pilot Plan". • Hosted "Adaptation for Climate Change Series Seminars – the Impact of Climate Change on Power System and the Plan on Adaptation Measures. • Promoted various Energy Conservation Campaigns.
• Recruit new employees as planned, cultivate professional capability and strengthen utilization of human resources.	• In 2010, 289 persons were recruited. The required personnel will be added annually. The utilization of manpower resources will be reinforced. The talent cultivation system will be enforced based on expanding core competency.
• Provide fuels to the power plants in the right quality, right quantity and at the right time to ensure power supply security and stability.	• Ensured fuel supply security and stability and maintained fuels needed for the power plants at safety inventory targets. • Fuel procurement expenses were reduced by NT$6.308 billon in 2010.
• Tariff rates should reasonably reflect the costs of power supply and encourage customers to make effective use of power through sending out correct pricing signals; Taipower should avoid cross-subsidy of electricity so that tariff rates can be effective and fair.	• Formulated the "Tariff Schedules Reflecting Fuel Costs Mechanism" and submitted it to the MOEA for approval. Fuel costs and tariff schedules were reviewed quarterly.

Governance with Accountability

In a spirit of accountability, Taipower officially implemented "Corporate Governance Regulations" to strengthen its corporate governance and risk management system in 2010. In addition to reinforcing the functions of the Board of Directors and Supervisors, enhancing internal control, and respecting the rights and interests of stakeholders, Taipower has established a comprehensive information disclosure system and continued to promote corporate ethics education to upgrade the effectiveness of the company's corporate governance.

Organization of the Board of Directors and Supervisors



Corporate Governance and Corporate Ethics

In order to substantiate corporate governance and strengthen corporate ethics, Taipower discloses its management information in a substantial and truthful manner, and actively sets up a standard to gauge employees' ethics and behavior to win over the trust and support of society. The major content includes:

Strengthening the Functions of Directors and Supervisors

Strenghening the Functions and Effectiveness of the Board of Directors and Establishing an Independent Director System

The Taipower Board of Directors consists of 15 directors, including 5 managing directors, 2 independent directors (with 1 being a managing director) and 3 labor directors. A Board meeting is convened regularly each month. There are two functional project review committees for "Land" and "Investment and Business Plan ". The two committees review important issues submitted by the managerial sector (all the units under the supervision of the president) before the meeting is held. This raises the efficiency and effectiveness of the meeting.

According to the regulations stipulated in the Securities and Exchange Act, the independent directors review the relevant issues submitted to the Board. In 2010, the independent directors exercised their authority in accordance with regulations, and they offered either no-objection or abstention for all the issues. To comply with the operation guidelines announced by the MOEA on the implementation of independent directors system for the enterprises under MOEA jurisdiction, Taipower will select 3 independent directors in its 2013 Stockholders' Standing Meeting. The audit committee system (replaces supervisors), which was approved by the government, will be also officially enforced.

Carrying out the Functions of Supervisors

The 3 supervisors attend Board meetings, monitor the operation of the company and carry out regular and irregular checks on the company's financial and business conditions. In 2010, the supervisors all exercised their authority abiding by the regulations.

Strengthening the Effectiveness of the Shareholders' Meeting

Shareholders' Meetings are held once a year to ensure the rights of shareholders' participation and decision-making in the company's affairs. Minutes of the Shareholders' Meeting shall be recorded and posted on a government website and distributed to shareholders. The company shall also disclose relevant information concerning corporate governance in its annual report.

Establishing an Information Exchange Platform for Independent Directors, Supervisors and Accountants

Taipower's independent directors, supervisors and certified public accountant meet regularly to share information. For example, the accountant will report the audit plan to the independent directors and supervisors before reviewing the financial statements. Once the audit is complete, the accountant will also exchange opinions with the Board and supervisors.

Improving the Internal Control Structure

- Taipower should make timely adjustments in the design and implementation of its internal control system in response to changes in the laws and environment.
- Taipower should implement its own internal auditing operation, and issue a Taipower Internal Control Effectiveness Statement and publish it in Taipower's annual report and the company's statement.
- The functions of internally important project auditors and roving auditors should be upgraded to enhance internal management performance.
- Information security (IS) should be undertaken to ensure that each unit is executing IS management properly.

Strengthening the Information Disclosure System

A pubic information network was established. The company's operation, financial report and relevant important information were periodically reported to raise the transparency of the company's operation information.

Promoting Corporate Ethics Standards

Corporate ethics is the foundation of corporate governance. As Taipower considers that the continued concern and focus on corporate ethics will cultivate a relationship of trust between the company and its employees and society, which will then enhance the company's sustainable management, in addition to adopting the government's relevant promotional materials, the company actively integrates internal networks and media resources to implement multiple promotional campaigns. Furthermore, "corporate integrity seminars" are held irregularly. The high-ranking officials, such as the chairman and the president, attend the new employees' orientation classes to elaborate on the importance of corporate ethics. This is done in the hopes that educational promotion activities will instill ethics consciousness in the employees.

Taipower Sustainability Performance and CSR Practice Manual

Item	Status
 **Substantiate the Promotion of Corporate Governance**	
• Set up CSR policy or system and review its implementation effectiveness.	p.23
• Establish full-time or part-time units to promote CSR.	p.23
• Hold regular corporate ethics educational training and promotion events for directors, supervisors and employees and establish a clear and effective system of rewards and penalties.	p.18, p.25
 **Develop a Sustainable Environment**	
• Dedicate to upgrading the effective utilization of various resources and use renewable materials that have a low impact on the environment burden.	p.52-54
• Establish an appropriate environmental management system based on the characteristics of the industry.	p.51
• Designate units or persons for environmental management tasks to maintain the environment.	p.7
• Pay attention to the impact of climate change on operation activities, and formulate the company's energy conservation and carbon reduction and greenhouse gas emission reduction measures.	p.45
 **Maintain Social Welfare**	
• Comply with relevant labor law to protect employees' legal rights and interests, and establish proper management methods and processes.	p.65
• Provide employees with a safe and healthy working environment, and conduct regular safety and health education for the employees.	p.66
• Stipulate and announce to the public the policy of consumers' rights and interests and provide a transparent and effective process for consumers to voice complaints about products and service.	p.77-79
• Cooperate with suppliers to mutually commit to upgrading CSR.	p.67
• Participate in community development and relevant charity activities through commercial campaigns, material donations, volunteer service, and other free professional services.	p.68-75
 **Strengthen Information Disclosure**	
• Disclose CSR-related reliable and relevant information.	Please refer to the Editorial Policy.
• Publish CSR report to disclose the CSR promotion information.	

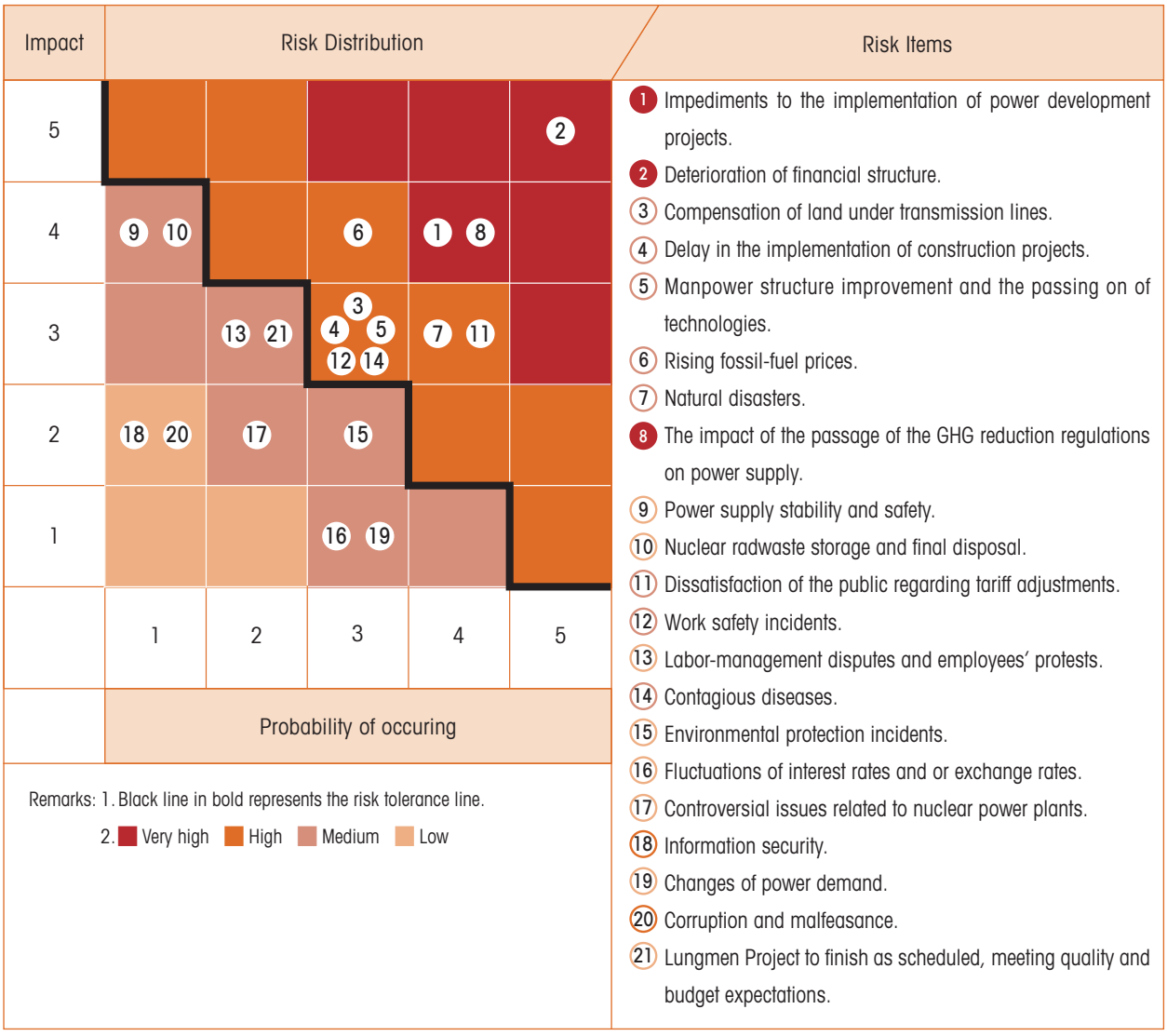
Risk Management

To cope with the rapidly changing internal and external management environment, and to anticipate and manage the risks involved in its operations, the Board of Directors reviewed and approved the risk management policy and the crisis management guidelines. Based on the policy and guidelines, the company amended the risk management implementation plan to serve as the basis for each unit to perform its risk control tasks.

In 2010, Taipower convened a "risk management promotion team" meeting to implement risk management in 21 areas, including ① the impact on power supply after the passage of the GHG reduction regulations, ② power supply stability and safety, ③ deterioration of financial structure, ④ impediments to power development projects, ⑤ rising fuel prices, etc. The team also presented Taipower 2010 risk paradigm and countermeasures. After being reviewed by the Risk Management Committee, composed of the chairman, president and other high-ranking officials, each host unit implemented its risk control tasks.

Taipower 2010 risk paradigm is shown in the following figure. There were 3 items which were way beyond the risk tolerance level, including deterioration of financial structure. They were listed as the first priorities to be dealt with and the countermeasures were presented for active control. There were 8 high-risk items, including rising fossil-fuel prices. They were handled by formulating a plan and putting it into actual practice. There were 10 items that fell under the risk tolerance level, including power supply stability and safety. The responsible units continued monitoring and controlling tasks to reduce the impact and probability of risks occurring.

Taipower 2010 Risk Paradigm



Emergency Response Mechanism for Natural Disasters

Taipower immediately activates its internal emergency response mechanism when an incident or natural disaster occurs in the country or a region. An emergency response center is set up to connect headquarters with regional offices to rapidly enter system recovery mode to prevent power facilities being damaged by emergency events and disasters and to minimize the impact and the scale of the damage.

Taipower is continuously strengthening its emergency response plans for unexpected events and natural disasters. These plans are included in the risk management mechanism to upgrade response capability. The disaster prevention plan includes disaster emergency response project and internal response procedures. In addition, based on the scale of the heavy rains brought by Typhoon Morakot in 2009, Taipower conducted a review on the reservoir utilization guidelines and water gate operation regulations. For transmission lines, based on "electric tower foundation and electric tower structure safety patrolling guidelines" and "transmission lines maintenance for abnormal precipitation management principles", Taipower reinforced maintenance and patrolling tasks to cope with the impact caused by climate changes or natural disasters such as earthquakes.

Sustainable Development Philosophy and Operation Mechanism

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

- Utilize limited natural resources efficiently. Support national economic development and social progress with minimum power development and efficient management.
- Balance energy security, economic efficiency and environmental quality during power development.
- Fulfill our corporate social responsibility and create a bright future together with our shareholders through a business philosophy of integrity, caring, innovation and service.

Future Development Paradigm

Power Construction System
A Leader 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 energy conservation services for customers).

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 Builder

- 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).
- Establishing proactive, mutual caring and disciplinary industrial safety culture.

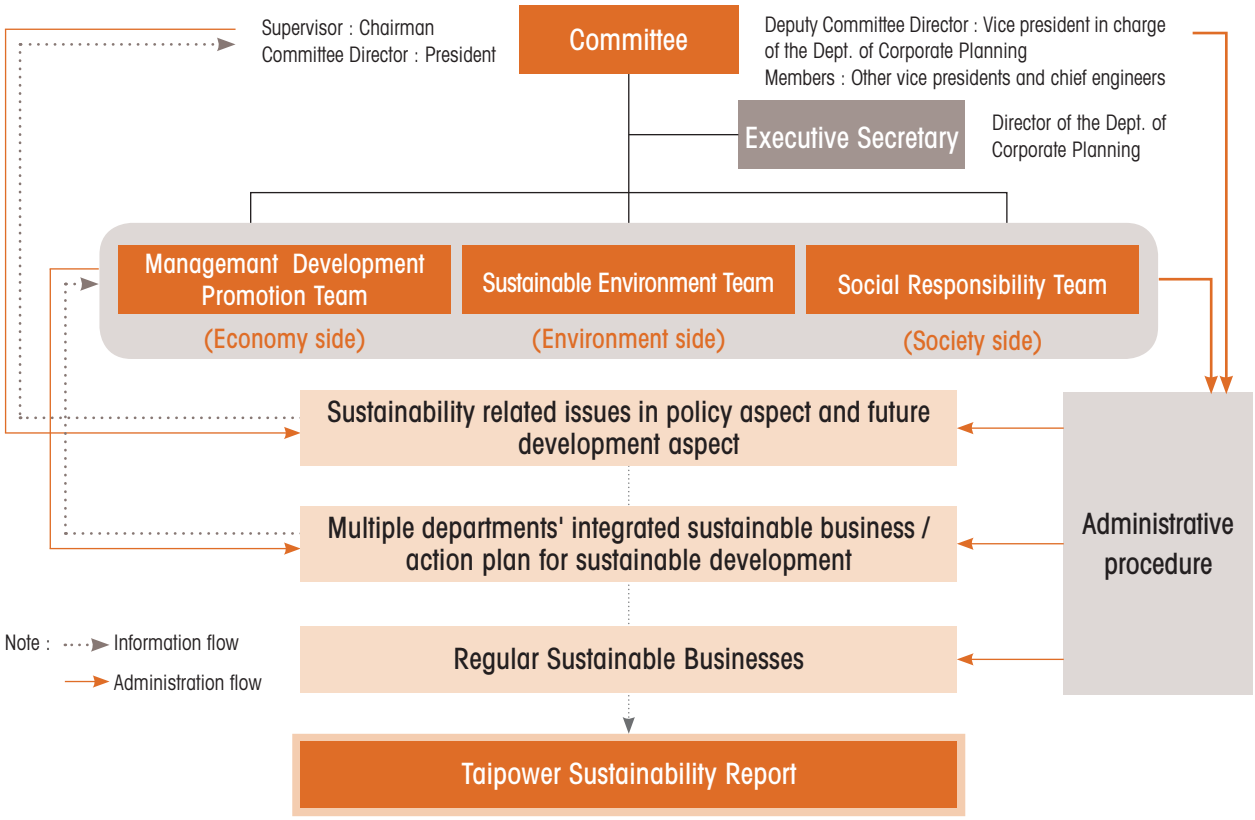
Sustainable Development Committee and Operational Mechanism

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 relevant units.

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.

The Sustainable Development Committee convenes regular annual meetings on the review of sustainable development action plans and the editing of a Sustainability Report. The preparation for editing the future 10-year management strategy, reporting on the promotion of energy conservation and carbon reduction will also be done. 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 Plans, 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.

2010 Management Performance Achievements

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. The four-perspective spirit of the Balanced Scorecard was adopted in formulating KPIs.

Key Performance Indicators	2009 Actual	2010		Accomplishments
		Target	Actual	
1. Improve Financial Structure				
(1) Pre-tax income (NT$100 Million)	-13.72	≧-358.16	-187.18	
(2) Debt ratio (%)	72.13	≦75.71	74.86	
2. Operating & Maintenance (O&M) Cost Control				
(1) Power generation O&M cost control (NT$ cent/KWh)	22.17	≦28.15	27.23	
(2) Power supply O&M cost control (NT$ cent/KWh)	15.75	≦16.69	15.33	
3. Fuel Purchase Performance				
(1) Coal purchase performance (%)	-9.84	≦-6.00	-7.03	
(2) Uranium fuel purchase performance (%)	-12.12	≦-6.29	-11.02	
4. Power Purchase Expenditure Control				
(1) Coal-fired power plants (NT$/KWh)	2.53	≦2.16	2.07	
(2) Gas-fired power plants (NT$/KWh)	3.31	≦3.80	3.66	
(3) Co-generation large units (NT$/KWh)	2.55	≦2.68	2.29	
5. Electricity Operation Performance				
(1) Line loss (%)	4.86	≦4.73	4.66	
(2) Economic dispatch performance(NT$/KWh)	1.52	≦1.45	1.42	
6. Customer Satisfaction (scores)	86.0	≧86.0	86.1	
7. Power Supply Reliability				
(1) System Average Interruption Duration Index (SAIDI) (min./customer·year)	19.246	≦20.85	17.663	
(2) System Average Interruption Frequency Index (SAIFI) (freq./customer·year)	0.238	≦0.32	0.196	
8. Industrial Safety Performance				
Total injury index	6.17	≦8.62	10.11	
9. Nuclear Safety Performance				
Number of nuclear system trips (freq.)	1	≦1	0	
10. Environmental Protection Performance				
(1) PM emissions (kg/GWh)	17	≦33	23	

Key Performance Indicators	2009 Actual	2010 Target	2010 Actual	Accomplishments
(2) SO_x emissions (kg/GWh)	237	≦355	240	☺
(3) NO_x emissions (kg/GWh)	253	≦340	248	☺
(4) GHG control (g/KWh)	513	≦563	510	☺
(5) Tree planting (m^2)	356,000	≧300,000	380,955	☺
11. Renewable Energy Development				
(1) Wind turbines installed (MW)	20	≧42	49.4	☺
(2) PV systems installed (MW)	2.0313	≧1.215	1.22079	☺
(3) Wind power installed capacity approved (MW)	5	≧5	5.8	☺
12. Generation Unit Operation				
(1) Reduce unit heat rate, increase efficiency (Kcal/KWh)	2,292	≦2,292	2,264	☺
(2) Upgrade nuclear power generation performance (excluding the overhaul capacity factor) (%)	NA	≧97.25	98.43	☺
13. Energy Conservation				
(1) Promote energy conservation to customers – amount of energy conserved (GWh)	3,756	≧2,168	3,918	☺
(2) Self-used electricity reduction (GWh)	135.62	≧94.64	106.37	☺
14. Improve Base Load Capacity and Regional Balance				
Capital Expenditure Implementation Rate (%)	96.45	≧95	97.44	☺
15. Upgrade Power Supply Quality				
(1) The length of transmission lines and the capacity of substation completion rate (%)	NA	≧95	100	☺
(2) The length of distribution lines completion rate (%)	NA	≧102	102	☺
16. Innovation				
(1) No. of employee proposals	5,870	≧4,658	6,041	☺
(2) Average training hours of employee per year (hr./employee)	52.26	≧40	59.1	☺
17. Research and Development				
(1) Income increase (NT$1,000)	39,300	≧39,500	740,238	☺
(2) Cost reduction (NT$1,000)	1,348,770	≧1,450,624	4,947,002	☺

Note: ☺ represents objective accomplished. ☹ represents objective not accomplished.

In order to completely combine the company's management performance with employees' contribution, Taipower raises the appropriation rate for efficiency bonuses to encourage employees to upgrade operation efficiency to reach double wins for efficiency and management performance.

Management Performance over the Past 3 Years

In recent years, despite confronting the increasing severe management environment, such as the challenges of rising fuel prices and GHG emission reduction, through the concerted efforts of its employees, Taipower still demonstrated various remarkable achievements in its management performance.

Power Production and Sales

Item \ Year	2008	2009	2010	Remarks
Total Production (GWh)	200,241	193,605	2,073.8	A new Taipower record.
(1) Generated by Taipower (GWh)	154,544	143,361	157,792	
(2) Purchased (GWh)	45,697	50,244	49,593	
Power Sales (GWh)	186,931	179,239	193,313	A new Taipower record.
Peak Load (GW)	31.32	31.01	33.02	A new Taipower record.
Customers (thousand)	12,226	12,415	12,583	The number of customers increased by 168 thousand.

Employee Productivity

Item \ Year	2008	2009	2010	Remarks
Number of Employees	26,584	26,921	26,828	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 5,295 less than the peak number of 32,123 in 1992.
Employee Productivity				
(1) Production per employee (MWh)	7,117	6,420	6,977	An increase of 557 MWh as compared with 2009.
(2) Sales per employee (MWh)	8,608	8,027	8,548	An increase of 521 MWh as compared with 2009.
(3) Revenue per employee (NT$1,000)	20,125	21,225	22,602	An increase of NT$1.377 million and a growth rate of 6.5%.

Power Supply Quality

Item \ Year	2008	2009	2010	Remarks
Line Loss (%)	4.58	4.86	4.66	The second best record in recent years.
Power Supply Reliability				
(1) SAIFI (freq./customer·year)	0.354	0.238	0.196	The best record in recent years. A decrease of 1.744 freq./customer·year, greatly lower than 1.94 freq./customer·year in 1992.
a. Scheduled Outage	0.080	0.066	0.063	
b. Forced Outage	0.274	0.172	0.133	
(2) SAIDI (min./customer·year)	20.810	19.246	17.663	The best record in recent years. A decrease of 160.457 min./customer·year, greatly lower than 178.12 min./customer·year in 1992.
a. Scheduled Outage	15.198	14.164	13.952	
b. Forced Outage	5.613	5.082	3.711	

Operational Performance

Item \ Year	2008	2009	2010	Remarks
Thermal Power Plant Net Efficiency (LHV, Gross) (%)	41.64	41.94	42.52	The best record in recent years.
Thermal Power Plant Incidents (freq./unit)	0.70	0.38	0.44	
Nuclear Power Plant Generation (GWh)	39,260	39,981	40,029	The total amount of power generation was the highest in Taipower's history. The power unit depreciation was nearly complete, which effectively reduce total power generation cost.
Nuclear Power Plant Scram (freq./unit)	0.33	0.17	0	The best record in recent years.

Upgrading Power Supply Stability

A stable power supply is necessary for the development of our nation's industry and the prosperity of its people. Faced with the trend of rising fuel prices and increasing domestic power demand, Taipower undertook the strategies of ensuring fuel supply, strengthening power grid construction, and improving energy source mixture, in an effort to reach a balance between upgrading management efficiency, lowering tariff schedules, and stabilizing power supply.

Key Sustainability Issue	Commitment	Goal
Improving energy source mixture	Provide abundant energy sources and balance regional power supply.	• Increase base load capacity to 28.47 GW in 2010, accounting for 54.4% of Taipower system.
Developing Renewable Energy	Reduce dependence on imported energy, diversify energy sources, improve energy self-sufficiency and reduce CO_2 emissions.	• Wind power: Install at least 200 wind power turbines or reach a total installed capacity of 300 MW by the end of 2011. • Solar photovoltaic system: Install 10,000 kWp of the solar power system by the end of 2011.
Strengthening Nuclear Power Generation Safety	Strengthen the safety of nuclear power generation, improve operational performance and ensure public safety.	• Continue to strengthen and improve the comprehensive safety assessment of nuclear safety. • Reinforce multiple natural hazard prevention drills. • Establish ultimate response guidelines for generators. • Streamline manpower/operation and strengthen nuclear power generation safety. • Strengthen promotion and communication related to nuclear power generation to the public.
Strengthening Power Grid Structure	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.	• Implement the 7th Power Transmission and Substation Project, with an investment estimated to be NT$238.9 billion over 6 years for constructing and expanding 130 substations, with a total capacity of 23,560 MVA, and total length of transmission lines reaching 2,370 ckt-km.
Ensuring Fuel Supply Security and Stability	Strengthen energy supply security to ensure a stable fuel supply for power generation.	• Provide fuels to the power plants in the right quality and right quantity and at the right time to ensure power supply security and stability.

Power Supply Stability

In addition to adopting the international power supply reliability measurements 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 and has established a sound response mechanism. This mechanism can deal with forced outage caused by unexpected incidents at any time and ensure rapid recovery of the breakdown of power facilities, thereby reducing public and commercial losses.

Thanks to Taipower's dedicated employees, SAIFI was reduced to 0.196 freq./customer·year and SAIDI to 17.663 min./customer·year in 2010. This demonstrated that power supply stability was maintained at a high standard and people's expections for a high-quality and stable power supply were fulfilled.

Improving Energy Source Mixture

Faced with the challenges of energy conservation and GHG emission reduction, making adjustments in energy source mixture is an inevitable trend. Although renewable energy has become an important point for future energy source mixture, thermal power generation is the major source of electricity in the short term and hard to be replaced. Presently, the ideal ratio of energy source mixture is shown in the following table. Based on 2010 energy source mixure, base load energy source should be increased to meet the power demand of the whole Taiwan area.

Energy Source Mixture	Base Load (wind, stream hydro, nuclear and coal-fired units)	Medium Load (pondage hydro, oil-fired, gas-fired steam turbine and combined-cycle units)	Peak Load (pumped storage, reservoir hydro, gas turbine units and solar PV)
Ideal	55%~65%	15%~30%	10%~15%
2010	41.7%	48.0%	10.3%

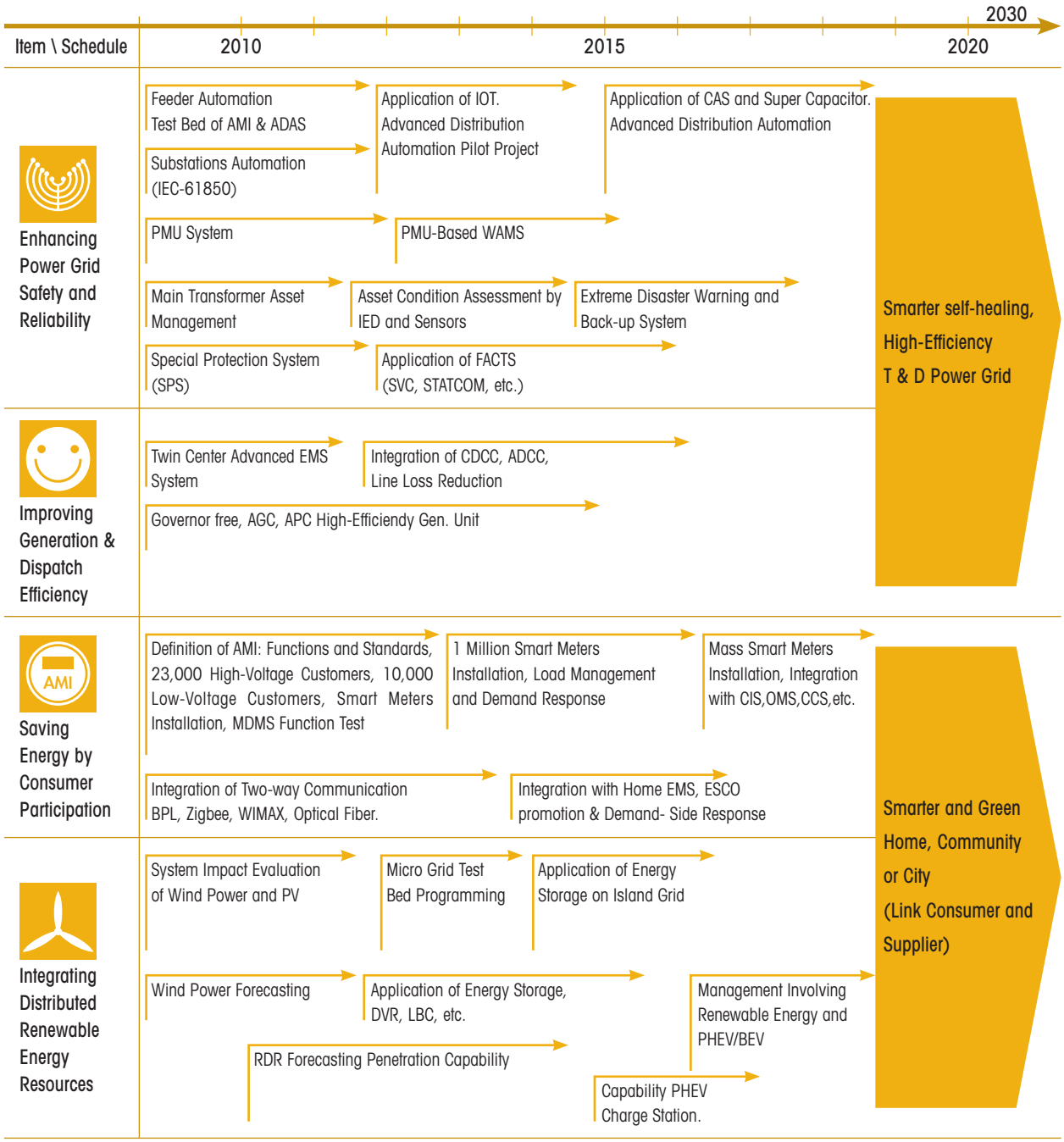
In order to satisfy the continued economic growth and make up for the deficiency of electricity caused by the mandatory retirement of generation units, in the future, coal-fired units will be the main focus when adding new base load energy soruces. Taipower will continue to implement high-efficiency retrofit projects in the Linkou, Talin, Shenao, Changgong, and Taichung Thermal Power Plants. If the 4th Nuclear Power (Lungmen) Project is included, the installed capacity for base load energy source will reach 11.5 GW in 2020.

Strengthening Power Grid Structure

For the purpose of upgrading the stability and reliability of power supply, Taipower continued to implement the 7th Power Transmission and Substation Project and the Sixth Distribution Project. In 2010, there were in total 580 substations, with a total capacity of 142,624 MVA, and total length of transmission lines reaching 352,189 ckt-km.

Confronted with the challenges of global warming and GHG emission reduction, all international power industries have begun searching for new energy sources and reducing their consumption of energy sources. Based on a "3 stages , 4 goals" blue print, Taipower is actively planning to establish a "smart power grid" – a high-quality, high-efficiency, customer-oriented and environmental-friendly power grid system. Currently, Taipower is continuing the tasks necessary for the establishment of feeder automation and AMI (Advanced Meter Infrastructure) projects. It is estimated that 1,488 feeders will be added to the system and 1,200 high-voltage customers will be included in the AMI system in 2011.

Taipower's Smart Grid Implementation Plan



Ensuring Fuel Supply Security and Stability

In order to ensure the stability of fuel supply sources for each type of power generation, Taipower adopts the following measures to secure a sufficient amount of fuels and provide them to the power plants in the right quality and quantity and at the right time to ensure power supply security and stability.

- **Diversify supply sources:** For coal procurement, a term contract was drawn up specifying the ratio of supply upper limit to be uniformly applied to all suppliers. The overseas coal mine investment is reinforced to further ensure thermal coal supply security. For nuclear fuel procurement, the supply upper limit was specified in long-term contracts for uranium source areas and supply groups and, in principle, the amount cannot surpass 60%.
- **Establish Safety Inventory:** A safety inventory is established respectively for each type of generation fuel.

Thermal Coal	Fuel Oil	Diesel	Nuclear Fuel
45 days (legally set 30 days).	20-30 days.	Proper operation amount of inventory according to each power plant's power supply and transmission conditions.	3 years of uranium.

- **Establish a Flexible Operation Mechanism Based Mainly on Term Contracts and Supplemented by Spot Purchase.**

Thermal Coal	Fuel Oil	Natural Gas	Nuclear Fuel
Term contracts account for 80-85% and spot purchase 15-20%.	Demand type term contracts were signed with local suppliers to ensure fuel oil supply security.	A term contract was signed with CPC, Taiwan.	Long-term contracts were signed (supplying at least 50% of uranium fuel). Long-term contracts were signed with 2 or 3 suppliers for subsequent fuel processing services, such as conversion, enriching and manufacturing.

- **Ensuring Coal Shipment Stability:** Presently, Taipower owns two 8.8-ton coal vessels. Four additional 9.3-ton vessels will be delivered in 2011. The ratio of shipment by Taipower-owned coal vessels will then reach 30% annually.

In 2010, through the above strategies, the procurement of ① thermal coal was 25.77 million tones and the amount saved reached NT$3.77 billion, ② fuel oil was 2.09 million kiloliters and diesel 43,500 kiloliters and the amount saved reached NT$0.139billion, ③ natural gas was 6.36 million tons, and ④ nuclear fuel reduced NT$0.139 billion in expenditure.

Promoting Total Quality Management

To satisfy the public's requirements for power quality, Taipower adopted the Quality Management System as the basis for total quality management and integrated it to relevant management systems to improve operational efficiency. At the end of 2010, a total of 88 units passed ISO-9001 certification by the Bureau of Standards, Metrology and Inspection, with a 100% passing rate.

Taipower continued to promote the programs of employee innovation, quality management circle, management by accountability and improvement projects. In 2010, the Taipower Radiation Laboratory won a silver award in the 23rd National QCC Competition with its entry entitled "Improving performance through the development of a 2nd generation analysis technology for low-level radioactive waste".

Guaranteeing Power Supply in High-tech Science Parks

In order to provide the high-tech industries with a stable power supply for their development, Taipower established the High-tech Industrial Park Power Quality Management and Improvement Task Force. 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 to ensure power supply stability for the science parks.

The power supply system in the science parks has adopted high-power supply reliability methods and underground cables. In addition, Taipower conducted reviews on the addition of new substations, the expansion of transmission lines and the improvement of system connection methods to reduce the occurance of power supply abnormal events to help the high-tech industres maintain stable management and development.

Goal	Strategy
1.Transmission system • Power outage incident ≦1 • C zone sudden voltage drop ≦9 2.Distribution system • Power outage incident ≦9 • C zone sudden voltage drop ≦6	• Increase construction of power facilities to upgrade power supply capability and reliability. • Enhance operation maintenance to reduce equipment breakdown. • Apply external diagnosis technologies to prevent potential incident factors. • Install power quality monitoring facilities to improve response capability and shorten incident repair time.

Reducing Scheduled and Forced Power Outage Frequency and Duration

To ensure the stability of 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 operating systems (generation, transmission and distribution). A Power Facilities System Incident Review Meeting is held every month to review the causes of incidents that occurred in the three systems. Optimal improvement measures are jointly proposed for each incident to ensure the reliability of power supply.

With the establishment and implementation of management policy, operation improvements and performance indicators, in 2009, the SAIDI set a new record of below 20 min./customer·year; in 2010, it was further shortened to 17.633 min./customer·year. This demonstrated a remarkable performance in power supply reliability.

Removing Silt and Maintaining the Safety of Reservoirs

Taiwan is a populous small island with steep terrain and frequent earthquakes. The extreme climate change in recent years has brought about typhoons and downpours that often cause mudslides that worsen the sedimentation problems of reservoirs. In order to reduce the impact of sedimentation on water storage functions, in 2010, a total of 830,000 m^3 of silt were removed from the reservoirs, effectively increasing the capacity of the reservoirs.

Reservoir Silt Cleaning

Unit: 10,000 m^3

2009	2010
76	83

Currently, there are 20 reservoirs under Taipower's jurisdiction. In order to maintain safe operation of its reservoirs, Taipower implements a comprehensive safety check and evaluation of its reservoirs according to the guidelines of "water conservation structure check and safety evaluation".

In 2010, Taipower performed safety evaluations in 14 reservoirs. According to evaluation results, various improvement measures were implemented to ensure safe operation of the reservoirs.

Development of Renewable Energy

Due to insufficient domestic energy production, Taiwan relies on imported energy to meet 99% of its energy demand. The develoment of renewable energy can reduce Taiwan's dependence on imported energy, diversify energy sources, improve energy self-sufficiency and reduce GHG emissions.

In recent years, Taipower has complied with the government's renewable energy development policy to implement evaluations on various types of renewable energy. In light of the policy and technology costs, at the present stage, the main direction is focused on developing land wind power and a moderate solar power system. At the end of 2010, the installed capacity of renewable energy was 2,449 MW, accounting for 6.0% of total installed capacity. Net peak load was 1,387 MW, or 3.4% of net peak load capability.

Status and Prospect of Renewable Energy Power Generation

	2010 Status	Prospect
Wind Power	• 144 wind power units were in commercial operation and the total installed capacity reached 249.16 MW. • 18 units are under construction with a total installed capacity of 39.6 MW. • 38 wind power units were installed at 5 sites: Kinmen Ginsa, Sihu, Yunlin Mailiao, Changgong (II) and Penghu Husi Wind Power Stations, with a total installed capacity of 69.4 MW.	• Installing 162 wind power units with a total installed capacity of 288.76 MW by the end of 2011. Annual power production can reach about 820 million KWh. • Promoting wind power production forecast technologies consecutively to Kinmen, Changgong and Mailiao Wind Power Stations. • Continuing the promotion of the 4th Phase of the Wind Power Project and the Penghu Island Low-carbon Wind Power Project with a total installed capacity of 46.8 MW.
Solar Power	• Taipower completed 10 solar energy pilot projects with a total installed capacity of 233.5 kWp. • The first phase of the solar photovoltaic system has been completed, with a installed capacity of 3,257 kWp.	• The total installed capacity of solar photovoltaics is estimated to reach 10,000 kWp by 2011. • Annual total production can reach 13.6 GWh. • Implementing thin-film and concentrated solar photovoltaic demonstration projects. • Continue the installation expansion plan in Phase I of the Solar Photovoltaic Project.
Hydro Power	• At the end of 2010, the installed capacity of conventional hydro reached 1,977 MW, accounting for 4.8% of the power system.	• The Wanli Hydro Power Project is expected to be approved in 2011. After the project is completed, its annual power production will reach 164.85 GWh.

Nuclear Power Generation Safety

Comprehensive Safety Assessment of Nuclear Safety

Adopting the requirements for a comprehensive safety assessment operation for renewing nuclear power plants' licenses that's employed in the United States, Taipower has been engaged in aging facilities management review and time-limited aging analysis on the 1st, 2nd and 3rd Nuclear Power Plants since 2006. The aging facilities management project was established to address potential problems in advance and to renew facilities to ensure the safe and continuous operation of the power plants. The implementation of the comprehensive safety assessment of the 3rd Nuclear Power Plant was started in 2011.

Nuclear Safety Control and Improvement Measures

Establishing Nuclear Power Units Based on "Defense in Depth" Safety Design Principles

- **Natural disaster prevention safety design**
  1. Choosing plant sites located on a huge rock bed to resist strong earthquakes.
  2. Designing immediate auto safety shutdown of units when strong earthquakes hit.
  3. Locating power plants at a sufficiently high altitude to prevent being hit by tsunamis and equipping power houses and facilities with strong-typhoon-resistant designs.
- **Safety facilities designed to reduce incident extent and terminate incidents**
  1. Designing various safety facilities that can, when monitoring a safety warning sign that will impact safety, immediately and automatically activate safety protection facilities in sequence to deal with the diversity of incidents.
  2. Preparing at least 2 sets (duplicated) of safety facilities, with each one independent and separated to avoid being simultaneous failure in a single event.
- **Application of multiple-barrier design to prevent radioactive substance release**
  1. Manufacturing fuel pellet with structure dense and rigid enough to sustain temperatures over 2,000.
  2. Installing fuel cladding that can sustain high temperature and high pressure.
  3. Constructing a 30-cm-thick high strength reactor pressure vessel.
  4. Installing 3 sets of emergency core cooling system with 9 circuits.
  5. Constructing an over 2-meter-thick reinforced-concrete containment.

Reinforcing Nuclear Safety Control Measures

- Promote evaluations of various quality-guarantee and quality-control operations to ensure continuous enhancement of safety operation of power plants.
- Divide work based on professionalism and proactively conduct the review and control of each important safety measure for the nuclear power plants.
- Strengthen professional control skills to raise control effectiveness and pay attention to the changing trend of safety operation, and introduce operation experience, maintenance experience and technological information from foreign countries.
- Implement power plant safety level analysis and evaluation to substantiate the foundation of safety management operation.
- Enforce regular, independent auditing operation, and use safety performance as a basis for screening the weakness of safety performance and eliminate potential shortfalls.

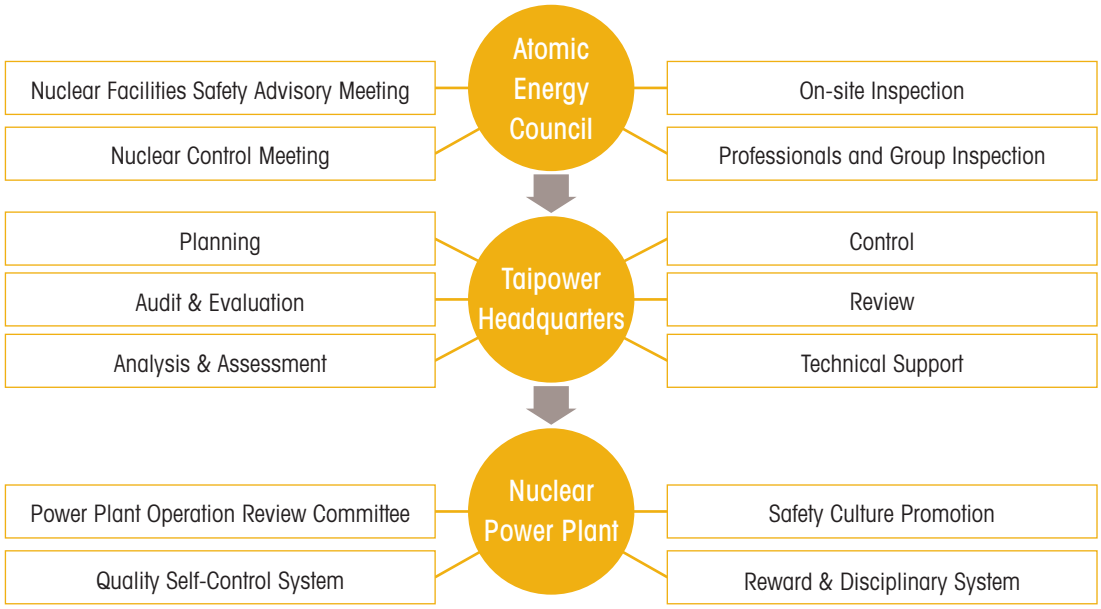
Strengthening Nuclear Safety Organization and Culture

- Fortify employees' attitudes towards safety and cultivate good work habits among them to reduce operational negligence.
- Raise personnel training performance and operation skills.
- Follow a rigorous nuclear quality-guarantee project to formulate implementation procedures and standards for each operation.
- Establish a strict safety and quality control system in power plants and a safety management organization in the headquarters to ensure safety at every level.

Enhancing Promotion and Communication with the Public

Taipower established a "nuclear information transparency system" website (http://wapp4.taipower.com.tw/nsis/) to fully disclose nuclear power plants' operation and related information, including real-time information, environmental radiation monitoring, etc., according to monitoring standards to reach the goal of nuclear safety being supervised by all the people. In addition, on the Atomic Energy Council website, green, white, yellow and red lights are used to enable the public to understand the status of nuclear power plant operations.

Nuclear Safety Management System



Nuclear Safety Operation Performance

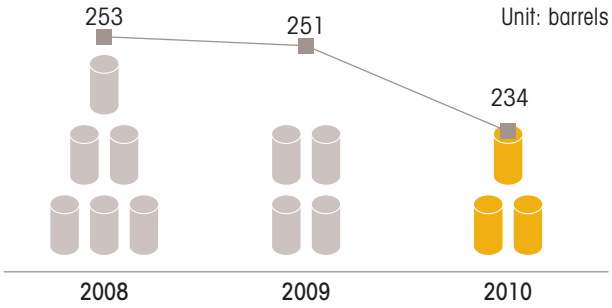
All of the 6 units in the 3 nuclear power plants demonstrated remarkable achievements in 2010. The power production amounted to 40,028 GWh, the highest record in Taipower's history. The effect of CO_2 reduction reached 34 million tons. The average capacity factor reached 93.32%, the highest in Taipower's history and the 2nd largest in the world

In terms of safety operation performance, the 1st, 2nd and 3rd Nuclear Power Plants were ranked 2nd place (currently there are 30 nuclear power countries) by Nucleonics Week, behind only Romania (2 units) and far ahead of the U.S., Japan and European countries. This also set a new record in Taipower's history.

Nuclear Safety Performance Indicators	2010 Achievements
Unit Scram	• No scrams occurred in the 6 nuclear units.
Abnormal Events at Nuclear Units	• Only 5 abnormal events occurred among the 6 nuclear units.
Safety Performance Control Light	• All units remained at the green light, well-performing level.
Others	• The duration of the 2nd Nuclear Power Plant Unit 1 refueling outage was 24.48 days, the shortest outage duration of nuclear units in Taipower's history. It also set a record for zero violations, zero industrial safety incidents, and zero abnomal events. • The 3rd Nuclear Power Plant Unit 1 operated in full fuel cycle continuously, safely and stably for 539 days, bested only by the 542 days set by the 3rd Nuclear Power Unit 2 in 2009. • 5 violation cases were issued by the Atomic Energy Council for the 6 nuclear units (2nd best record in Taipower's history).

Radioactive Waste Management

The low-level radioactive waste (radwaste) generated by nuclear power operation can be incinerated, compressed or solidified and stored properly in zinc-coated barrels. Under Taipower's strict control, in 2010, the total amount of low-level radwaste was 234 barrels, which is the lowest annual figure in Taipower's history.



Taipower applies a 3-stage strategy for the management of spent nuclear fuel that is used internationally: pool storage, dry cask storage and final disposal. The capacities of the storage facilities constructed in the 1st, 2nd and 3rd Nuclear Power Plants are all sufficient enough to meet the requirement for the operation period that's set for the power plants. In the future, all low-level radwaste will be sent to final disposal sites.

As the spent nuclear fuel pool storage facilities in the 1st and 2nd Nuclear Power Plants cannot accommodate the spent nuclear fuel produced over a 40-year period of operation by each reactor, Taipower is currently planning to construct dry storage facilities to enable each power plant to have sufficient storage facilities before the spent nuclear fuel is sent to final disposal sites.

Taking reference of widely used international measures, Taipower will adopt deep geological disposal methods for its spent nuclear fuel final disposal. Currently, Taipower is undertaking the tasks of investigating and evaluating the characteristics of the potential host rocks. In 2010, a "spent nuclear fuel final disposal preliminary technical feasibility assessment report" was completed.

Emergency Response at Nuclear Power Plants

Once a nuclear incident occurs, radioactive substances will be released from the nuclear power plant. In order to prevent the worsening of the incident and protect the safety of people's lives, health and assets, emergency response measures should be adopted to eliminate the cause of the incidents and prevent the expansion of the disaster. Relevant mechanisms are:

Implementing response operation drills

Taipower, central and local governments, military, police and medical units are all mobilized to participate in an annual nuclear safety exercise that is held at each nuclear power plant. In addition to supervising agencies, Taipower also invites professionals and scholars to form an evaluation group to assess exercises on each response measure to make the emergency response plan more effective.

Establishing emergency response readiness performance indicators

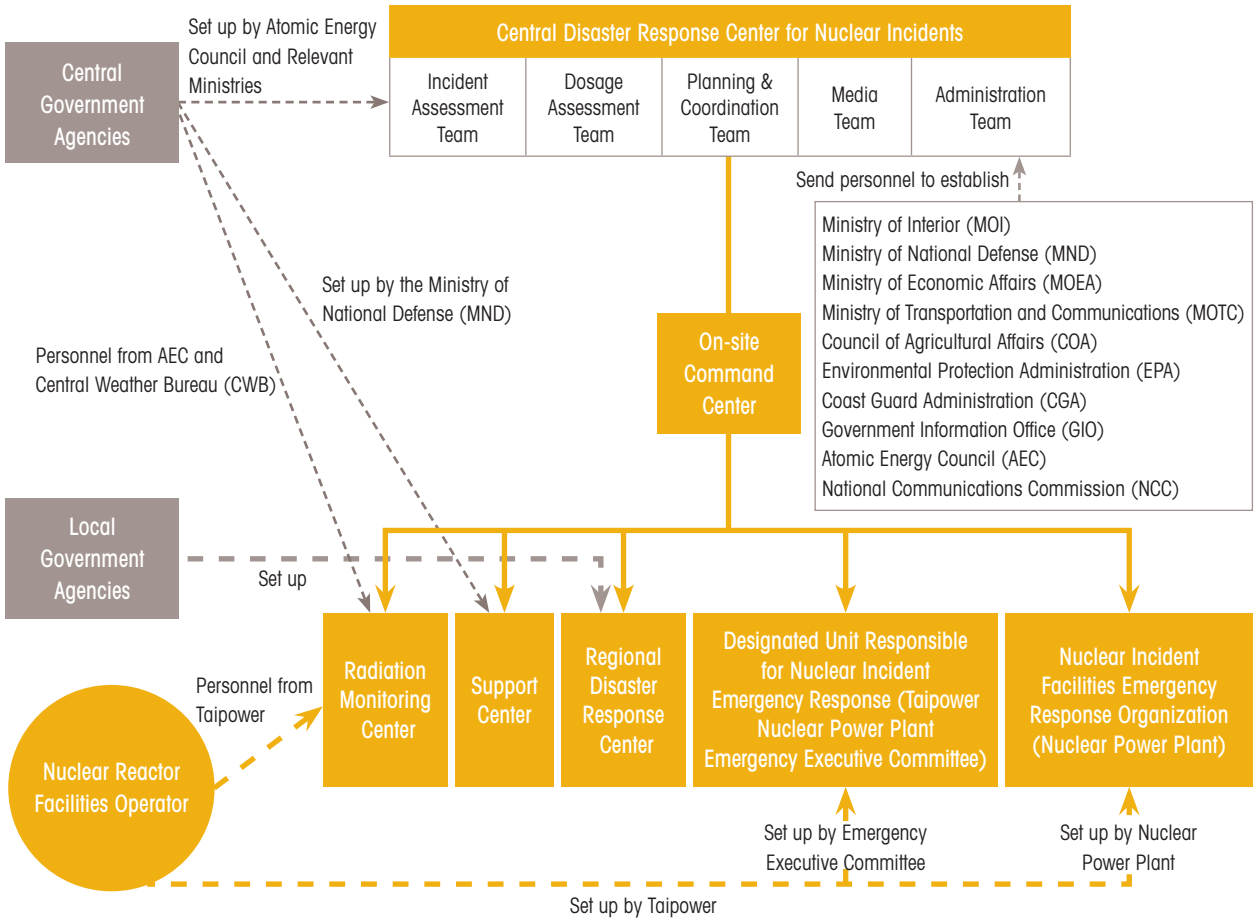
Each nuclear power plant enforces the following 3 emergency readiness performance indicators and the results are reported quarterly to the Atomic Energy Council to ensure that when an emergency incident of radioactive substance release occurs, proper measures can be adopted to protect the health and safety of the people.

- Drills/exercises performance.
- Participation of the emergency response organization in drills.
- Reliability of the warning and reporting system.

Adopting emergency response measures

A central disaster response center was established in the central government along with regional disaster response centers in local governments and a support center in the Ministry of National Defense. When a nuclear incident occurs, they will jointly handle the disaster. The emergency response system is shown as follows

Nuclear Power Plant Emergency Response System



Demand-Side Management

In order to provide the public with more stable, high-quality power, Taipower promotes load management and energy conservation measures through demand-side management strategies, working with its customers to raise power consumption efficiency, change power consumption habits, balance peak and off-peak loads and reduce power waste.

Load Management

In order to balance system load and maintain highly efficient system operation, Taipower, taking reference of the methods adopted by foreign countries, consecutively implemented various load management measures.

Measure	Description	2010 Performance
Time-of-Use Rates	Encourage customers to use electricity during off-peak hours to reduce peak load and to reflect the cost of power supply at different time periods.	Chosen by 88,647 customers, the peak load was reduced by 3,398 MW.
Interruptible Rates	Provide discount rates to encourage customers to reduce peak-hour demand through shifting the demand to off-peak hours to reduce peak load.	Chosen by 1,246 customers, during the peak day, the peak load was clipped by 1,290 MW.
Seasonal Rates	Reduce the consumption during summer by setting different prices for different seasons.	12.468 million customers applied for the seasonal rates and the average load in the summer was reduced by 3,699 MW.
Ice-Storage Central Air Conditioning System	Encourage customers to make use of off-peak load to store ice in the system and thus reduce the peak load. Power consumption during off-peak hours earns a 40% discount off the regular rate.	249 customers installed the system, with a total capacity of 213,000 hp.
Central Air Conditioner and Package Air-Conditioner Duty Cycling Load Control Measure	Central air-conditioning system stops for 15 minutes after every 60 minutes of operation and package air conditioning system stops for 8 minutes after every 22 minutes of operation to reduce peak load.	126 customers applied and compressor capacity reached 27,000 tons.
Demand-Response Program	The reduced capacity of the contracted customers can be included into the reserve margin for emergency dispatch to raise the system dispatch flexibility and reliability.	5 customers applied for this measure, with total contracted capacity of 14 MW.

Energy Conservation

Through various channels and approaches, Taipower holds promotion events every year, mainly, promoting the energy conservation concept and practical methods to enable the public to understand the value and rarity of electric energy and thus establish a correct energy conservation concept.

Measure	Description	2010 Performance
Energy Conservation Seminar	Hold promotion seminars on power consumption knowledge and basic repair and maintenance of in-house electric equipment in mother's classroom, schools and social groups.	1,432 activities were held.
Energy Conservation Campaigns	Select a branch (rotating between north, central and south branches), before peak power consumption season comes, to hold a large-scale energy conservation campaign, through exhibitions, presentations, writing and painting contests in primary and secondary schools, etc. to deeply instill the concept of energy conservation into people's minds.	Hosted an event at the Yilan Branch. 11,316 attendees.
Energy Conservation Promotion through Mass Media	Use media such as TV and radio to promote energy conservation and offer energy-saving tips to the public through Taipower's online library.	• 27 media promotions. • 65 newspaper and magazine reports promotions. • 22 billboards and computerized screen image advertisements. • 15 press releases.
Consultation Service on Power Consumption Efficiency to Large Customers	Offer improvement suggestions on lighting, air-conditioning, power factor, load management, demand control, electric heating and motor equipment to promote effective power consumption concept and methods.	5,182 customers.
Publication of Promotional Materials for Energy Conservation	Publish 10 varieties of energy conservation manuals for air conditioner, refrigerator, lighting, commercial areas, factories, etc. to reinforce energy conservation promotion to customers.	Distributed about 250,000 copies.
Promotion of Community Energy Conservation Services	Continue promoting community energy conservation, advocating correct energy conservation techniques, establish energy conservation concept and culture, provide communities with energy conservation promotion service, educate public on effective energy consumption methods and promote the utilization of high-efficiency energy conservation electric equipment.	Held 331 activities.

Development of Electric Power Technology

For the purpose of providing the public with a higher-quality power supply, Taipower is making an effort to raise the efficiency of production, distribution and utilization of existing energy, and pays close attention to the R&D trend of advanced technologies performed by the international power industries. In addition, Taipower will continue to introduce far-sighted technologies to enhance the efficiency of the power supply industry and energy use.

Currently, the core technologies adopted include: power system quality monitoring, customer electric energy management service, generation units quality management, power facilities life-span management, water industry, GHG biofixation treatment, power facilities diagnosis and tests, renewable energy, new electric power technologies, etc. Taipower is undertaking research on the following important electric power technologies:

Electric Power Technology	Subject	R&D Status
Supercritical and New Combined-cycle Generation Technology	Power generation efficiency	• Introduce higher efficiency of supercritical coal-fired units and gas-fired combined-cycle units. • Develop our own technology such as evaluation of material life, non-destructive testing, regenerating welding, etc.
Clean Coal Power Generation Technology	Power generation efficiency	• IGCC: 1.Establish capability to evaluate thermodynamic performance for air-blown and oxygen-blown IGCC power generation system. 2.Establish capability to evaluate thermodynamic performance for IGCC combined with CO_2 mitigation technology for power generation system. • Oxygen-Fuel: 1.Cooperate with academic sector and research agencies to conduct studies on characteristics for oxygen-fuel combustion. 2.Establish capability to evaluate thermodynamic performance for oxygen-fuel combustion power generation system.
CO_2 Capture and Storage Technology	CO_2 recovery	• Develop novel CO_2 absorbent manufacture technology and study the practicality and cost-effectiveness of CO_2 capture. • Establish our own assessment capability for potential CO_2 storage areas. • Participate in MOEA's CCS R&D Alliance's effort to expedite and promote domestic CCS technology in Taiwan.
Algae Fixed Carbon	CO_2 reuse	• Improve photobioreactor for algae culture to raise fixed-carbon rate and study the feasibility and cost of large-scale implementation. • Promote research on algae resource applications and conversion into energy.
Smart Grid and Advanced Metering Infrastructure (AMI)	Power grid	• Introduce novel transmission and substation technologies to upgrade the main transmission line capability. • Promote feeder automation and plan the construction of advanced distribution automation demo test sites and cooperate with relevant sectors to move forward to create a smarter distribution grid. • Plan to complete installation of automatic metering devices for about 23,000 high-voltage customers and 10,000 low-voltage customers before 2012. After conducting cost-effectiveness analysis and proving the applicability of the technoloty, expansion of this project will be implemented.
Application of GIS, PLC and RFID Technologies	Power grid	• Apply GIS (Geographic Information System), PLC (Power Line Communication) and RFID (Radio Frequency ID) technologies to asset management of the distribution system to reduce maintenance manpower and equipment incident rates, thus strengthening the supply reliability and operation efficiency of the distribution system.

Enterprise Resource Planning (ERP)

In the hope of using information technology to engage in enterprise management to upgrade its overall operation performance, Taipower has made a comprehensive plan to establish its ERP system in phases. Through this system, Taipower will implement its enterprise reengineering to clearly design written operation standards and management process and conduct prompt reviews and improvements. This will benefit sustainability management and development.

Currently, in the 1st phase, enterprise process blueprint design, development and formulation of ERP functions, data cleaning, transfering and testing, have all been completed. The ERP system is scheduled to go on line in 2011 to provide better service quality.

ERP System Project

Phase 1	Phase 2	Phase 3
Integrate all Taipower IT systems, including financial accounting, financial management, procurement and material management, internal auditing control management, etc., to establish a more efficient enterprise operation core process.	Continue integrating IT systems, including engineering management, facilities maintenance, human resources and business intelligence to establish and integrate core information systems for the integrated power industry.	Strengthen business intelligence and establish enterprise performance and strategy enterprise management to build a complete e-power utility.

Coping with the Challenges of Climate Change

It is foreseeable that the climate extremes caused by global climate change will drastically increase the scale and frequency of disasters. As a main power supplier in the country, Taipower should realize that it must have a long-term disaster prevention and adaptation strategy to maintain power supply stability and safety, and support continuous development of the industry. Thus, Taipower should make strategies far in advance to deal with the effects triggered by continued climate change and to reduce damage to the assets of the country and its citizens.

p.44 Climate Change Adaptation Strategy

p.45 GHG Control Action Plans

Key Sustainability Issue	Commitment	Goal
Coping with the challenges of climate change and GHG emission reduction.	Progressively implementing Taipower's GHG control strategy to reach the reduction goal set by the government.	Fulfilling the carbon reduction goals as stipulated in the "National Master Plan 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.

The Challenges of Climate Change

Being the primary power provider of the nation, Taipower shoulders great responsibility for ensuring a stable power supply while working toward GHG reduction in response to climate change. Multiple challenges still remain however due to the high level of uncertainty surrounding the impact of climate change and GHG reduction initiatives.

- Regulations for GHG reduction have yet to pass the legislature. The difficulty of GHG reduction will increase significantly without comprehensive and reasonable reduction targets, tools and supporting measures.
- The expansion of natural gas and renewable energy is constrained by prices and environmental factors. In addition, under the "nuclear-free homeland" policy, it is difficult to reduce GHG emissions through the adjustment of energy source mixture.
- As the development of the two main base load sources, coal-fired and nuclear power, is restrained, it is very possible that future power construction projects and economic development in our country will suffer a severe impact.
- Once the regulations for GHG reduction take effect, the restrictions on the total quantity of GHG emissions will be defined. However, after the retrofit projects in Shenao, Linkou, and Talin Thermal Power Plants are completed, the total GHG emissions will be definitely increased. Discovering how to fulfill the power demand while meeting the restrictions of total quantity of GHG emissions will become one of Taipower's challenges in the future.
- Currently, there is no commercially-applicable capture and storage technology available for thermal power generation. A great amount of capital will be required in the future for purchasing carbon credits or investing in reduction projects. If the costs cannot reflect on power prices in a timely manner, it will cause an impact on the company's management and finance.
- The domestic carbon market is too small to meet the massive reduction requirements and lacks sound complementary measures. In the future, it will be necessary to obtain carbon credits from the international market. Under the manpower streamlining policy, the professional personnel needed for carbon credit management might not meet the required amount. Therefore, finding a way to completely control and plan the complicated GHG emission reduction matters is also a challenge that Taipower will confront.
- Extreme temperatures and excessive rainfall will aggravate the frequency and scale of disasters and endanger relevant power supply facilities. Taipower's generation, transmission and distribution systems must therefore undergo preparations for long-term disaster prevention and countermeasures.

Climate Change Adaptation Strategy

Taipower has included climate change adjustments into the company's sustainability development action plan. In 2010, Taipower participated in "planning the promotion of the guidelines and action plans for climate change adjustment" and "Hsinta Thermal Power Plant climate change adjustment pilot project", and hosted "climate change adjustment serial seminars" to strengthen internal and external countermeasures for the country and its industries.

In addition to current measures, Taipower will continue to invest in related research and businesses in the future. These actions are an attempt to raise adjustment capability and reduce the impact of climate change on power generation, transmission and distribution systems.

Strategy 1 Participation in the National "Climate Change Adaptation Plan"

In 2010 Taipower participated in the "planning the promotion of the guidelines and action plans for climate change adjustment" panel discussion hosted by the Council for the Economic Planning and Development and presented 5 action plans, including:

- Climate change impact assessment and vulnerability inventory check assessment for Taipower energy supply facilities and their locations.
- Climate change impact assessment and vulnerability inventory check assessment for the operation of the power grid system.
- General power industry climate change adaption capability improvement.
- The planning and establishment of a climate change early warning and emergency response system for the integrated power industry.
- Equipment deterioration monitoring and development of prevention technology for power generation, transmission and distribution.

Strategy 2 The Hsinta Thermal Power Plant Climate Change Adaptation Pilot Project

As the threats posed to power plants by climate change (e.g. the impact of rising atmospheric temperatures, heat waves and rising seawater temperatures, etc., which will incur changes on power demand, production of power facilities and load types [peak and off-peak], as well as the impact of rising sea levels on generation facilities near coastal areas, etc.) will have a negative effect on power plants' operation, Taipower must plan its countermeasures as early as possible.

In 2010, Taipower participated in the "Hsinta Thermal Power Plant Climate Change Adjustment Pilot Project" to formulate adjustment countermeasures-related action plans. This project was used as an exemplary case for other power plants.

Strategy 3 Climate Change Adaptation Seminars

In order to build up internal awareness of the issue of "adaptation", in 2010 Taipower held 6 "Climate Change Adaptation Series Seminars – The Effect of Climate Change on the Power System and Formulation of Adaptation Countermeasures". Ten experts and scholars were invited to exchange opinions with Taipower.

In the seminars, participants compiled a list of climate impact factors such as atmospheric temperatures, seawater temperatures, precipitation, precipitation intensity, rising sea levels, typhoon disasters and sunshine days. Other non-climate factors such as earthquakes, lightning strikes, dust storms and salty wind damage also cause great damage to the manual as well as mechanical operation of the power system.

Confronted with the above impact factors, Taipower will actively formulate relevant counter strategies to strengthen disaster prevention for its overall operation system and review system life-cycle assessment (LCA) to set up adaptation action plans such as emergency response measures.

GHG Control Action Plans

In addition to shouldering the responsibility for national power supply, Taipower pays a lot of attention to the issue of GHG emissions. Through concrete strategies and actions, Taipower proactively implements GHG emission restriction and reduction tasks to enable our country to reach the vision of a low-carbon society. For effective management and accomplishment of GHG reduction goals, Taipower established an "Energy Conservation & Carbon Reduction Report Meeting" to formulate and implement the following 9 strategies and 35 action plans:

GHG Control Strategies and Action Plans

Strategy 1 Expanding Low-carbon Energy	1. Expand installed capacity of renewable energy. 2. Complete units 1 & 2 of the Lungmen Power Plant. 3. Maintain natural gas power at an appropriate ratio. 4. Retire and renew the existing units. 5. Adopt the best available technologies for new generation units.	**Strategy 6** Developing and Trading Carbon Credits	21. Invest/participate in domestic/foreign carbon reduction projects. 22. Purchase domestic/foreign carbon emission quota. 23. Plant trees to reduce carbon.
Strategy 2 Upgrading the Efficiency of Existing Generation Units	6. Upgrade the efficiency of existing thermal units. 7. Upgrade output of existing nuclear units.	**Strategy 7** Implementing Demand-side Management	24. Investigate and study load characteristics. 25. Study demand-side electric energy management service techniques. 26. Promote reasonable tariff schedules. 27. Discuss and plan the establishment of an energy technology service company.
Strategy 3 Upgrading the Efficiency of the Transmission and Distribution Systems	8. Improve efficiency of the operation of transmission and distribution systems to reduce line loss. 9. Improve transmission and distribution facilities. 10. Research, promote and apply high-efficiency transmission, substation and distribution facilities.	**Strategy 8** Enhancing Internal Energy Conservation	28. Control internal productive and non-productive energy conservation. 29. Promote green buildings and in-house energy conservation. 30. Promote green IT and teleconferencing. 31. Establish an energy conservation service team to provide energy conservation technology diagnosis and consultation services.
Strategy 4 Strengthening R&D on Power Grid Technology	11. Contruct a high-quality power grid for intergrating distributed energy sources. 12. Develop automation of substations and feeders. 13. Apply energy storage system and electric and electronic technologies. 14. Study the addition of new pumped storage hydro power for the development of renewable energy.	**Strategy 9** Reinforcing Energy Conservation Promotion and Communication	32. Use media to promote energy conservation and carbon reduction. 33. Hold energy conservation and carbon reduction promotion campaigns. 34. Promote energy conservation and carbon reduction techniques and methods. 35. Host large-scale energy conservation and carbon reduction exhibitions and seminars.
Strategy 5 Strengthening R&D on Power Supply-side Technology	15. Develop technologies for carbon capture and storage. 16. Develop renewable energy and CO_2 reuse technology. 17. Perform R&D on electric technology for carbon reduction. 18. Introduce and perform R&D on new energy and renewable energy technologies. 19. Perform R&D on power generation efficiency upgrading technology. 20. Study the latest electric energy demo systems.		

GHG Emission Inventory Check and Management

Taipower initiated the GHG emission inventory check and verification in 2004. The GHG Information Management System was also established. The GHG emission data were integrated into the management system. Taipower personnel qualified to conduct GHG inventory checks were sent for verification, management and analysis of the company's emission condition.

Taipower's main GHG emission sources are thermal power generation, coal yards, transportation vehicles, insulation gas used for switchgear, and freezer and air-conditioning facilities. In 2010, Taipower emitted 81,000 thousand tons of CO_2e of GHG emissions, of which 99.3% came from thermal power generation processes.

In order to make its GHG information transparent and credible, Taipower entrusted a certification agency to conduct ISO 14064-1 verification. As of 2010, 17 units passed ISO 14064-1 verification.

2010 GHG Emissions

Unit: thousand tons of CO_2e

GHG	CO_2	CH_4	N_2O	SF_6	HFC
Total	80,364	97	302	232	7

Complying with the government's Voluntary GHG Reduction for Energy Industry Project, Taipower made a great contribution to GHG emission reduction, with its total reduction accounting for over 98% of the amount in the Bureau of Energy's assistance program. In 2010, 7 units, including Tunghsiao Thermal Power Plant Combined-cycle Gas Turbine Efficiency Upgrading, Taichung Thermal Power Plant-Taichung Harbor Wind Power Project, etc., passed energy-type reduction plan verification tests. The total amount of reduction reached 3.54 million tons of CO_2e.

2010 GHG Emissions

Unit: thousand tons of CO_2e

Power generation / Emissions	Oil-fired	Gas-fired	Coal-fired
2010	6,204	17,568	56,694
2009	4,639	12,700	56,142

CO_2 Capture and Storage (CCS)

In 2010, Taipower participated in MOEA's CCS R&D Alliance and cooperated and exchanged opinions with domestic R&D groups, in an attempt to accelerate the maturity and development of CCS technologies in the country.

Taipower has been engaged in establishing its own assessment capability for potential CO_2 storage sites in recent years. In 2010, 2 projects were completed, "the investigation, planning and study of CO_2 geological storage test sites" and " establishment and function certification of two-phase flow test facilities for CO_2 geological storage". Peikung Hill in the Taihsi Basin was selected as the site with the most potential. According to a preliminary estimation, the site has the potential to store about 4 billion tons of CO_2e.

Development of CO_2 Capture Technology

Geological Storage Pilot Project

2011	2012	2013	2014
Planning, establishment of geological model and assessment of foundation for CO_2 geological storage site pilot projects.	Well digging, monitoring, and certification of on-site technology for pilot projects (1)	Well digging, monitoring and confirmation of on-site technology for pilot pilots (2)	Completion of the planning and construction of injecting into the well for pilot projects.

SF_6 Management and Reduction

In addition to safety and reliability, modern substation facilities need to be aesthetic in structure, safe for operation, easy to maintain, etc. Thus, Taipower has widely adopted the use of SF_6 insulated switchgear (GIS) equipment in power facilities, such as switchyards, substations and distribution lines. The quantity of equipment is large and varied.

To effectively manage the usage and emissions of SF_6, Taipower has accurately controlled the variety and quantity of switchgears and SF_6 refill amounts through its "SF_6 reporting management information system". Each unit was requested to upgrade the quality of its facilities inspection and maintenance to reduce SF_6 leakage. The accurate amounts of SF_6 usage and refilling as well as the impure SF_6 inventory are required to be posted in the information system.

2010 SF_6

Item	Quantity (kg)	GHG Emissions (tons of CO_2e)
Original Quantity	88,431.12	1,963,170.86
Facilities/ Refilling Frequency	1,103 (times)	
Refilling	9,474.06	210,324.19
Purified SF_6 Emissions	44,599.38	990,106.24
Inventory	35	777

Taipower has made remarkable achievements in SF_6 emission reduction efforts. The reduction performance can be divided into two categories: The SF_6 recovery vehicle has been used to reduce the amount of SF_6 on-site emissions, recovery and reuse. The impure SF_6 is pumped into a storage tank to be reused by magnesium alloy industries. Taipower will apply for carbon credit quota according to the "Directions for Promoting Greenhouse Gas Early Action Project and Offset Project" issued by the Environmental Protection Administration.

Enhancement of Nuclear Power Generation

Of all the types of power generation, nuclear power is the lowest in cost and it can operate stably for a long time. It has been Taipower's main source of income in the last several years. In addition, the CO_2 emissions from nuclear power plants are very limited, thereby effectively helping to alleviate the global GHG effect. Therefore, if we can implement a nuclear unit power uprate project to raise generation power uprate, thus increasing the amount of generation, then we can achieve the benefits of safety, economy, cost-effectiveness and environmental-friendliness.

Currently, Taipower is implementing the stretch power uprate in the 1st and 2nd Nuclear Power Plants. These projects are scheduled for completion in 2012 and 2014, respectively. The achievements in 2010 were as follows:

- The application to prove that environment assessment was unnecessary for the 1st Nuclear Power Plant stretch power uprate project was approved by the EPA.
- The safety analysis of the 1st Nuclear Power Plant's stretch power uprate project was submitted to the AEC for review.
- INER was retained to undertake work related to the 2nd Nuclear Power Plant's stretch power uprate project.

In 2010, nuclear power plants' total generation reached 40,028 GWh, a 47 GWh increase over the previous year, the best record in Taipower's history. The capacity factor reached 92.32% (LHV Gross), a 0.15% increase over the previous year.

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 designated level. Beyond implementing regular overhaul projects, efforts were also made to improve facilities and to alleviate the problems of aging units in order to maintain the highest efficiency under various dispatch loads. In 2010, 15 upgrading energy use efficiency improvement projects were completed, at a total investment amount of NT$2.54 billion. Carbon reduction reched 113,480 tons. The overall efficiency of thermal units reached 42.52% (LHV Gross), which was higher than the previous year's 41.94%.

Efficiency of Thermal Units (LHV, Gross)

unit: %

2008	2009	2010
41.64	41.94	42.52

Greenification and Tree Planting

Taipower has practiced on-site tree planting at its thermal power plants, branches, construction offices, training centers, etc. 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 fact, since 2008, Taipower has been cooperating with local governments where thermal power plants are located to deploy large-scale tree planning projects. These projects are expected to reach the goal of planting 120 hectares by 2011.

In 2010, the 2nd phase 30-hectare forestation project at the Army Infantry School was completed. In cooperation with Miaoli County, a 53 hectares forestation project was also completed. The result of these projects, 144,000 trees being planted, will be equivalent to an area that's 4.6 times the size of Taan Forest Park with the capacity to reduce 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.

Carbon Credits

The Executive Yuan approved the "National Master Plan on Energy Conservation and Carbon Reduction", unveiling national carbon reduction goals – 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.

In order to achieve government-set carbon reduction targets for Taipower, and assuming that the goal of total quantity control could still be unreachable after great effort being made, Taipower will plan to trade carbon credits to meet emissions quotas. In 2010, the "guidelines for the establishment of a carbon operation task force" were announced and a "carbon credit operation task force" was established to handle relevant business.

Carbon Footprint of the Power Industry

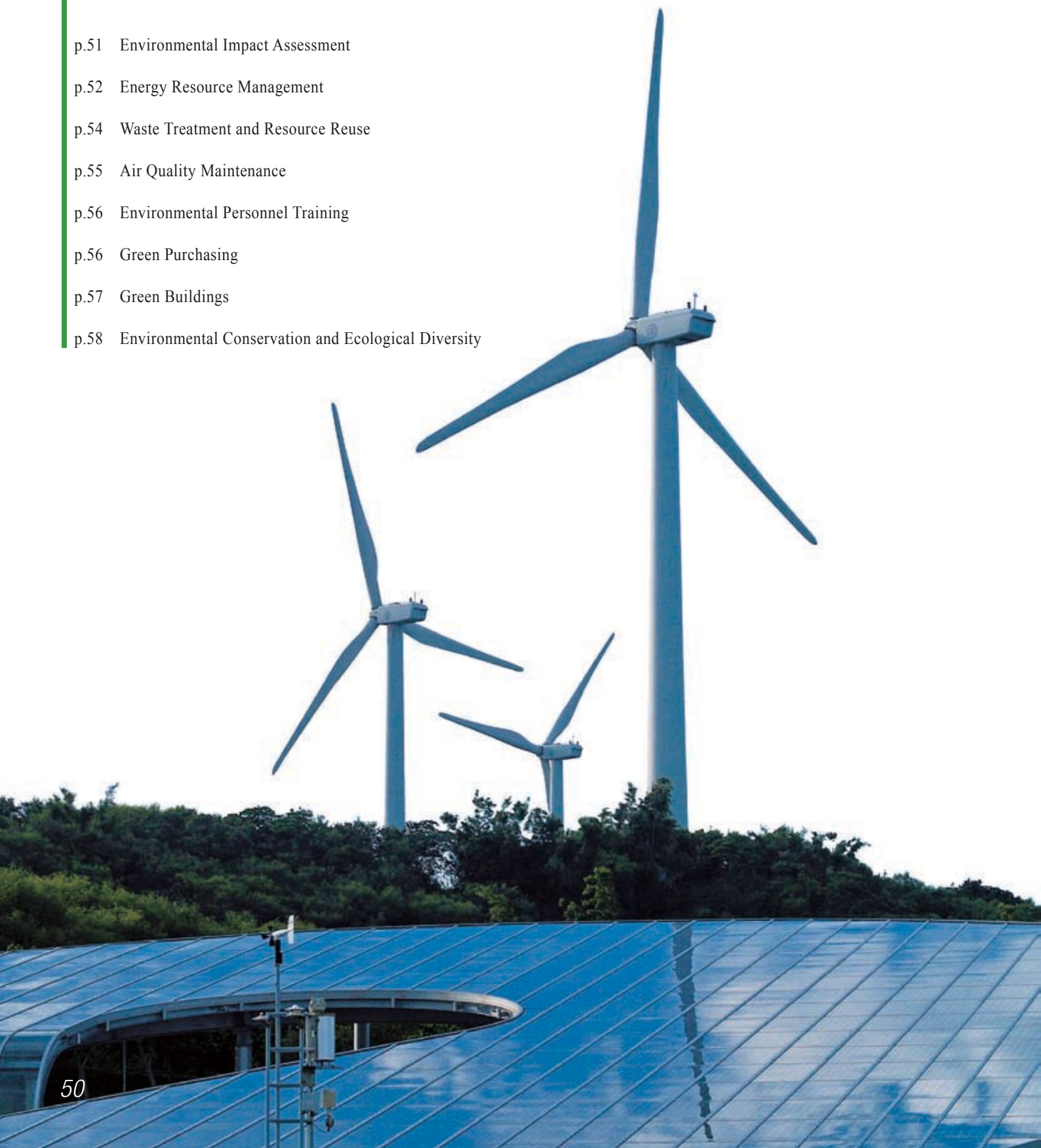
Since 2010, complying with the guidance of the Bureau of Energy, Taipower has tried to collect carbon footprint inventory data. The Linkou Thermal Power Plant was the first site chosen to undergo this task. As our country relies largely on importation for fossil fuels, it's difficult to obtain the primary activity data. We can only base estimates on international LCA software and the secondary activity provided by the data bank to get inventory data .The results of a rough inventory data were as follows:

Stage	Category	Carbon Footprint Ratio (%)
Raw Fuel and Material	Coal mining and pre-treatment	0.99
Transportation	Overseas and domestic coal transportation	2.38
Operation	Generation process and maintenance	96.60
Solid Waste Treatment and Disposal	Consumption of energy resources in solid waste treatment and disposal	0.03
Total		100

In 2011, after the inventory data collection task at the Linkou Thermal Power Plant is completed, Taipower will conduct the task in different types of power plants consecutively, including the Nanpu Thermal Power Plant, the Mingtan Hydro Power Plant and the 3rd Nuclear Power Plant.

Creating an Environmentally-Friendly Culture

In order to reduce the impact caused by power industry-related activities, products and service on the environment, Taipower and its employees, abiding by the following declaration, engage in various environmentally-friendly activities to minimize the impact of operation activities on the environment. Taipower demonstrates its determination in striving to become a world-class green energy group.



Taipower Environmental Declaration

- **Meet relevant regulations:** In addition to environmental regulations, the regulations of landscape, ecology and international issues should be taken into consideration.
- **Emphasize pollution prevention:** Environmental impact assessments should be put into practice and environmental monitoring should be implemented before, during and after power development projects.
- **Substantiate resource conservation:** Each unit should minimize its consumption of resources - oil, water and electricity.
- **Strengthen promotion and communication:** Each unit should, based on the spirit of ISO 14001, strengthen the company's internal and external promotion and communication tasks.
- **Continue performance improvement:** Each unit should follow the ISO14001 P-D-C-A concept to continue its performance improvement.

Environmental Impact Assessment

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 take into consideration its 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 2010, 8 Environmental Impact Assessment (EIA) reviews were completed and 115 EIA reports and documents passed review.

Power generation / Stage	Environmental Assessment of Hydro Power Plants	Environmental Assessment of Thermal Power Plants	Environmental Assessment of 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 environmenta 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.

Energy Resource Management

Material Flow Management System

Taipower is the first company in the country to complete its Material Flow Management System (MFMS) after its Environmental Accounting System was established. Currently, this system can rapidly control the condition of raw material utilization, pollutant emissions and discharge, byproduct bidding amount changes, etc. This system greatly upgrades the efficiency and accuracy of environmental information management.

The environmental information collected by MFMS includes: input – the amount of energy, water and electricity needed for manufacturing, and output – electricity, waste or pollution created during power generation, etc. In addition, the waste can be reutilized and reused to add extra income, such as offal, wastewater reuse, coal ash, plaster, etc. Thus, a complete environmental data bank platform was established.

Energy Conservation

Each year, Taipower promotes the concept and practical methods for reducing power consumption through various channels. This is done in an attempt to help people understand the value and rarity of electric energy, thus establishing a correct concept of electric energy conservation and cultivating a willingness to work together for the effort of energy conservation.

External Promotion and Achievements of Energy Conservation

- Energy conservation seminars (for large customers, schools, classes for repair and maintenance of in-house electric equipment, etc.): 1,432 activities, with 402,000 attendees.
- Technical consultation service given to customers with a contract capacity of over 100 KW: 5,182 customers.
- Additional capacitors installed after technical consultations (due to improved power factor): 56,308 kVAr.
- Air-conditioning advice given to convenience stores, department stores, hospitals, and banks: 2,817customers.
- Taipower energy-conservation exhibits: 562,000 visitors.
- Tariff schedules discount on energy conservation incentive measures:
  1. The number of customers who reduced their power consumption was 26.25 million.
  2. The total power consumption was reduced by 3,918 GWh compared with the same period of last year; tariff schedules offered savings of NT$7.409 billion; and CO_2 emissions were reduced by 2.4 million tons.

Achievements of Internal Energy Conservation Measures

Item / Year	Electricity Saved in Power Plants, Substations, and Offices (GWh)	Gasoline Saved in Offices (1,000 litre)	Water Saved in Offices (1,000 m^3)
2008	132	70	127
2009	136	614	161
2010	106	8	113

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 the implementation of various measures, in 2010 the amount of wastewater reuse was much higher than that of the previous two years. In addition to saving an enormous amount on water expenditure, this also demonstrated Taipower's dedication and contribution to water conservation in Taiwan.

Thermal Power Plant Wastewater Reuse

Unit: tons

Category \ Year	2008	2009	2010
Reuse of rainwater	204,580	371,835	159,529
Reuse of wastewater and process water	1,487,918	1,471,677	1,621,918

Presently, the whole world has started to pay close attention to the issue of industry's "water footprint". In 2010, Taipower began calculating the quantity of water input and wastewater output for thermal power plants to understand the water resource utilization conditions. In the future, Taipower will comply with the government's "water footprint" promotion system to conduct water footprint inventory checks.

Unit: M^3/year

Water Footprint	Power Plant	2010 (A)	2009 (B)	(B) - (A)
Water Input (blue water)	Productive Water Use	10,046,068.60	11,133,525.88	1,087,457.28
	Non-Productive Water Use	478,126.00	516,904.81	38,778.81
Effluent of Treated Wastewater (grey water)	Treated Wastewater Discharge	1,269,596.60	1,464,733.59	195,136.99

Note: The baseline data from 2009 was adjusted to facilitate comparison with current business activities in 2010.

Environmental Accounting System

In 2003 Taipower established the environmental accounting system (EAS), and in 2006 developed the EAS information platform to help with EAS information entry work.

Taipower's environmental accounting system 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.

In 2010 total environmental expenditure was NT$14.16 billion, of which environmental protection accounted for NT$7.22 billion, occupational safety NT$5.58 billion and sanitation NT$1.36 billion.

Environmental Expenditures

Unit: NT$ billion

Year \ Item	Environmental Expenditure	Industrial Safety Expenditure	Sanitation Expenditure	Total
2008	7.47	6.23	1.43	15.13
2009	8.25	6.54	1.65	16.44
2010	7.22	5.58	1.36	14.16

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, etc. It's Taipower's ongoing goal to reduce the generation of waste, or use and treat it properly to turn it into a harmless substances to maintain a complete ecological balance.

Other industrial waste, such as waste wires and cables, metal scrap materials, etc., are being reutilized by waste disposal contractors through an open bidding process. In accordance with the government regulations, bidding contractors should be qualified Industrial Waste Processors and perform their reuse operations according to regulations to reduce the environmental risks involved in waste treatment.

Industrial Waste Bidding Amount

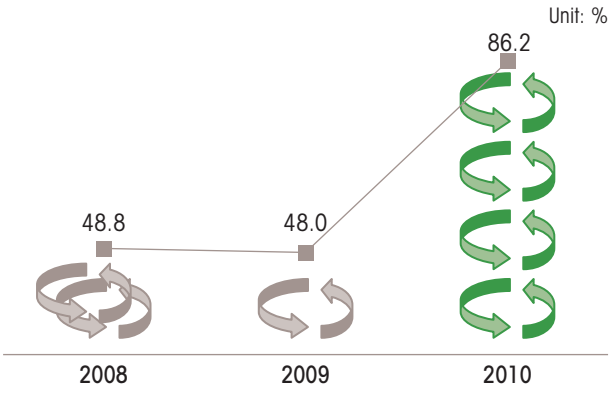
Unit: NT$ billion

Item \ Year	2008	2009	2010
Waste wires, cables and metal scrap materials	1.053	1.096	1.283
Coal Ash	0.271	0.208	0.135
Total	1.324	1.304	1.418

Reuse of Coal Ash

The majority of waste generated from Taipower's thermal power plants is coal ash (fly ash and bottom ash), most of which can be reused to reduce the environmental burden. Presently, fly ash is commonly used in civil construction. In fact, Taipower has used fly ash in power facilities construction and promoted its use. In the meantime, Taipower has promoted the use of bottom ash for ditch repaving projects in construction units. This greatly raises the reuse quantity and rate of coal ash.

Industrial Waste Bidding Amount



Reuse of Gypsum

During the combustion process in coal-fired power plants, the sulfur contained in the coal is converted onto SO_x. The sulfur content of 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 coal-fired power plants (Linkou, Taichung and Hsinta) to eradicate SO_x and uses limestone slurry to transform SO_x in flu gas into gypsum. The gypsum produced by Taipower can be reused by local cement makers and fire retardant board makers.

In 2010, the production of gypsum amounted to 555,000 tons per year and its utilization rate reached 100%.

Air Quality Maintenance

Taipower installed the continuous emission monitoring system (CEMS) on each of its thermal power plant smoke stacks to maintain air quality and 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.

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 generation units and installing advanced air-pollution control facilities to cut the release of air pollution down to the minimum level.

SO_x Emissions

Taipower has increased its consumption of sulfur-free natural gas. Its coal-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	Coal Yards
• Installed high-efficiency electrostatic precipitators (ESP) which are capable of removing 90~99.8 % of particulate matter. • Installed flue gas desulfurization (FGD) equipment on coal-fired units.	• Built a wind-shielding fence around the coal yard and installed a sprinkler system. • Transported and unloaded coal in a closed environment, as well as compacted coal heaps and kept road cleaned. • Stabilized the coal surface by using a chemical, and recently, Taipower has planted trees around the yard to prevent the spreading of coal dust.

Presently Taipower 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 over the Past 3 Years

Unit: kg/GWh

Item \ Year	2008	2009	2010
SO_x	443	388	342
NO_x	423	413	354
PM	33	27	33

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 2010 inventory, Taipower still has about 96.179 tons in stock. Following the stipulation in the Montreal Protocol, 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 government policy and regulations to gradually reduce the use of HCFC fire extinguishers to protect the ozone layer.

Environmental Personnel Training

To help Taipower employees to realize the importance of environmental protection and to substantiate environmental protection tasks, Taipower implemented environmental education training sessions through professional training agencies.

In 2010, Taipower held various classes, including environmental management systems, check and review of environmental regulations, waste management, operation and management of GHG inventory checks, and other related courses. There were in total 197 participants.

In addition, each of Taipower's operation units, when necessary, invites environmental experts and scholars to deliver speeches and conduct training sessions every year. In 2010, there were in total 10,121 participants.

Green Purchasing

In order to realize the concept of co-existence and co-prosperity for environmental protection and economic development, Taipower, complying with the "Government Agency Green Purchase Program", has prioritized its purchase of green products that have little impact on the environment.

- Included green purchasing as one of the indicators of environmental management performance to encourage each unit to strengthen their green purchasing.
- Listed the following items as the first priorities for green purchasing: office paper; business facilities: multi-functional business machines, computer mainframes, etc.; electric appliances: fluorescent tubes, dehumidifiers, drinking machines, etc., and other equipment: water-saving toilets, sanitation products, etc.
- Make it a priority to purchase products that have obtained environmental protection labels for use as prizes in the company's welfare activities and to promote green consumption concepts to the employees and their family members at the right time.

As a result of active promotion, in 2010 the amount of green purchases reached NT$290 million, of which environmental protection products accounted for 93.10%. Taipower encouraged the manufacturing and utilization of green products within the country with pragmatic actions and helped cultivate an atmosphere of green consumption.

Green Buildings

Low Carbon Park

As the issue of global warming is continuing to attract international concern, our country has listed "energy conservation and carbon reduction" as an important item in its national policies. The New Taipei City government plans to establish itself as the country's first low-carbon demonstration city through the following four focal points: power saving and carbon reduction, green transportation, reuse of resources, and a low-carbon lifestyle.

In cooperation with New Taipei City's promotion project, Taipower is implementing an overall improvement project in the Northern Visitors Center to realize the concept of building a "nuclear power low-carbon park" at the 2nd Nuclear Power Plant. In line with the theme of this low-carbon park, Taipower plans to add an "energy-conservation living area" in the exhibition hall to showcase an actual home-living environment with energy-saving features. In addition, Taipower will provide sufficient power-saving information to the customers to urge them to substantiate power saving in their daily lives.

Green Buildings

As mandated by its management structure and system, Taipower's current building projects that cost more than NT$50 million each have all complied with the government's "Eco City and Green Building Promotion" regulations: the projects acquired green building candidate certificates before starting construction and received green building labels after completion. According to the following concepts and methods, Taipower and the public jointly engage in energy conservation and carbon reduction campaigns to fight against global warming.

- Construction technique rules: Those new buildings with a total construction cost under NT$50 million should follow the government-set construction rules.
- New green building design concept: New techniques for designing green buildings will be continuously developed to improve the energy conservation of new and existing buildings.
- Intelligent energy-conserving buildings: Energy control software and other technologies are used to integrate the control of power, HVAC, elevators, lighting, automated control systems, etc., to introduce an intelligent building to raise energy utilization efficiency.
- Solar photovoltaic system: Solar photovoltaic designs will be introduced to the new buildings that have an area over 600 m^2 and a roof that can be installed with a capacity of over 30 KW of solar power to increase the use of renewable energy.

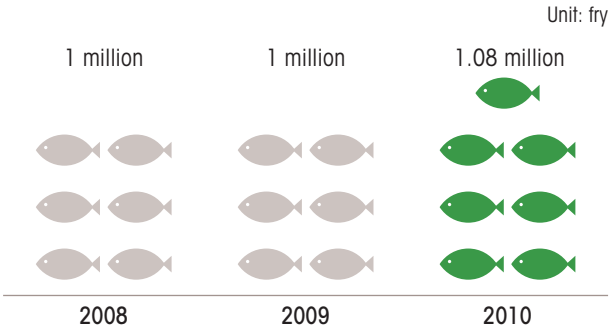
In 2010, Taipower had 6 buildings that obtained green building candidate certificates and 13 buildings that obtained green building labels.

Environmental Conservation and Ecological Diversity

Taipower is always devoted to creating a harmonious co-existence between power plants and the natural environment. Taipower has been concerned about the ecological environment, exclusive fishing rights, marine protection zones, greenification and tree-planting issues around its power plants. 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 our future generations can continue to enjoy nature's beauty.

Fishery Resources Restoration

In compliance with the government's fishery policy and cultivating fishery resources effectiveness, Taipower has began releasing and cultivating fry with high economic value to protect the marine environment and enrich fishery resources. Each year, from 2000 to 2010, Taipower cooperated with the Fisheries Agency to release one million fry into the coastal waters nearby thermal and nuclear power plants. Over the past 11 years, more than 11.28 million fry have been released.



Coral Preservation

Coral reefs are the most productive and biologically diverse ocean ecosystems and are often called the "tropical rainforests of the seas".

In addition to participating in Kenting National Park's "Hengchun Peninsula Coral Reefs Comprehensive Conservation Program", Taipower has installed three underwater remote monitoring systems (since 2003) near 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 viewing at Taipower's Southern Visitors Center.

Taipower has also commissioned the Taiwanese Coral Reef Society to undertake "Lungmen Nuclear Power Plant Coral Ecology Investigation and Research" to understand the ecological characteristics of corals, thus establishing a database before the operation of the power plant as a reference for preservation and restoration strategies.

Ecological Engineering Method

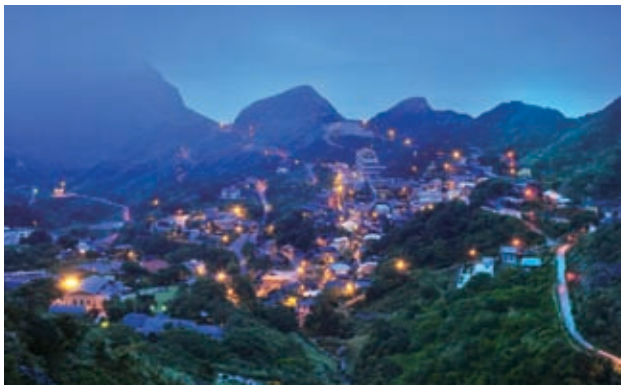
Upholding the principles of "adapting to nature, respecting nature, yielding to nature", Taipower has made every effort to adopt ecological engineering methods in its construction projects based on the "ecologically-based and safety-oriented" concept to plan, design and construct its projects. Taipower attempts to reduce the impact of its construction projects on the environment through the following methods:

- Taking into consideration the overall ecological, geological and social conditions in planning and design.
- As much as possible, adopting tree planting methods on slopes, such as erecting stakes and fences to protect plants, of which, the majority are native plants.
- Adopting protection engineering methods for water discharge and river banks with rough surfaces and holes to increase the habitat and living spaces for native animals.
- Minimizing building sizes while fulfilling functional requirements to reduce the impact of the building on the surrounding view.
- Conducting a comprehensive monitoring and assessment on development areas to serve as a reference for selecting the most appropriate engineering methods.

Environmental Protection Fines

Through implementing various environmental protection measures and management check plans, the number of violations of environmental regulations showed a marked decrease from 26 in 2008 to 9 in 2010, the lowest in Taipower's history. In the future, Taipower will strive toward the goal of "zero violations" to continue its efforts to fulfill its commitment to environmental protection.

Year	2008	2009	2010
No. of violations	26	12	9
Fines (NT$1,000)	3,234.5	979	820



Environmental Footprints of Taipower's Operations

Power Purchase 49,593 GWh

Total Power Transmitted to Customer 193,313 GWh

INPUT

- **Fuel**

Coal: 25,905.5 thousand tons

Natural Gas: 8,489.6 million M^3

Heavy Oil: 1,981.1 thousand kilo liters

Light Oil: 62.4 thousand kilo liters

Uranium Fuel (U_3O_8):2.28 million pounds

- **Water Consumed by Thermal Power Plants:** 10.8 million tons

- **Energy Consumption in Offices**

Power Consumption: 132 GWh (475,200 GJ)

Oil Consumption: 1.58 million liters (51,973 GJ)

Water Consumption: 2.11 million M^3

Power Generation 157,792 GWh

Nuclear Power Plants: 40,028 GWh

Thermal Power Plants: 110,764 GWh

Pumped-Storage Hydro Power Plants: 3,047 GWh

Renewable Energy Power Plants: 3,952 GWh

- **Office Conservation Results**

Power Consumption: 12,269 MWh (44,168 GJ)

Oil Consumption: 8 kilo liters (263 GJ)

Water Consumption:113 kilo liters

OUTPUT

- **Gas Emissions from Generation, Transmission and Distribution**

Gas Emissions

- CO_2: 80,364 thousand tons of CO_2e
- SO_x: 39,640 tons
- NO_x: 61,941 tons
- PM : 3,838 tons

Waste Cables: 323.6 thousand tons

Power Generation Byproducts:

- Coal Ash: 1,957 thousand tons
- Gypsum: 555 thousand tons

Low-Level Solid Radioactive Waste: 234 barrels

Spent Nuclear Fuel: 508 bundles (approximately 99.6 tons)

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

Employee Cultivation and Workplace Harmony and Safety

Protecting the safety and health of workers and reducing injury incidents and occupational illness of the employees and contractors, as well as helping employees enjoy a good career development are Taipower's core value concepts towards its employees and work partners. Taipower intends for every employee and work partner to enjoy a safe and healthy work environment.

Key Sustainability Issue	Commitment	Goal
Cultivating Electrical Power Professionals	Continuing to cultivate electric power professionals, promoting the passing on of core technologies, and making proper arrangements for the overlap period of the new and old manpower to smoothly promote the company's business.	Recruiting new employees as planned, cultivating professional capacity and strengthening utilization of human resources.

Cultivation of Talent

Taipower regards its employees as the most important asset of the company and emphasizes the cultivation of talent. Training requirements are developed from core technologies. Through integrating internal and external training resources, Taipower continues to provide its employees with multiple training programs to satisfy employees' needs for self-promotion and learning of the passing on technologies. Taipower will therefore continuously strengthen its competiveness and further enable its employees to grow along with the company's business.

- In compliance with the government's personnel downsizing policy, the quota of employees was reduced by 20.11% from 1992 to 2010. Manpower was thus reduced by 16.48% (5,295 employees). This led to the problems of tight manpower, aging manpower structure, manpower gap, and difficulty of passing on technologies.
- In 2010, the average age of the employees was 48.9 and the average working years was 25.5. The number of employees over 45 years old was 68.22%. Manpower is concentrated in the middle- and senior-aged groups. In the coming 10 years, 9,735 employees, accounting for 36.29% of present manpower, will be mandatorily retired. For cultivating professional talent and enabling the passing on of technologies, there must be an overlap period of new and old employees to facilitate the implementation of the company's business.
- To alleviate the aging of manpower and strengthen the passing on of technologies, Taipower, starting from 2005, has planned to gradually recruit the necessary core manpower year by year. In addition, Taipower, through the efforts of reinforcing the utilization of manpower resources, implementing a talent cultivation system based on the premise of expanding core capabilities, substantiating a personnel rotation system, and enhancing evaluation mechanisms, upgrades its employees' productivity and the company's competitiveness, and promotes the sustainable management of the power industry.

Recruiting and Training New Employees

In order to avoid a manpower gap and strengthen the passing on of technology, Taipower hired 289 technicians in 9 categories in 2010. They underwent one year of lecture courses, internship and work training. Taipower recruited 409 new employees in 14 categories. After completing a 2-week orientation training, they were assigned to their respective units to undergo a 6-month period of probation. If they passed the probation, they were qualified to become an employee of Taipower.

Each unit set up learning goals for the new employee's tentative assignments and selected proper sectors for probation. In addition, according to their career planning, the company provided them with long-term training and assistance. Under the system of talent cultivation, the employees who partake in multiple training programs will be better equipped to grow with the company's business.

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 2010: 54,796 employees participated in on-the-job and off-the-job training, 17 went for overseas research, 94 went for overseas study, and 9 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 2010 there were 217 participants. Taipower helped 1,829 employees to obtain various professional certificates.

Conducting Executive Training

Each level's executives play a key role in promoting and implementing Taipower's management strategies. In order to continuously add new talent to executive levels, in 2010, 329 employees with good performance participated in supervisory training; 198 participated in intermediate supervisory training and 220 participated in senior supervisory training. These training sessions together with other diversified on-the-job training sessions are beneficial to manpower reserve and utilization.

Establishing Knowledge Communities

Taipower established a "knowledge communities" system to provide a platform for its employees to share and exchange work experience and professional knowledge. Through these interactions, employees' loyalty was also solidified. The measures included:

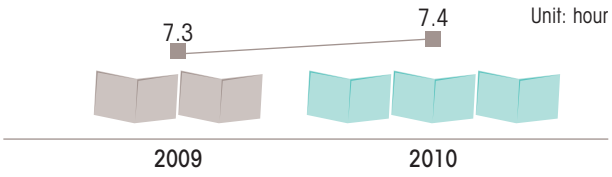
Knowledge Management System	• Taipower blogs: providing employees' daily work review, experience, living information, etc. • Quick place: providing each unit's business and documents, unit entrance, project management, etc. • New Taipower Think Tank System (Taipower Think Tank): providing knowledge communities, knowledge documents, expert directory, employees' proposals, etc.
Knowledge Management Content	• 59 quick places. • 239 knowledge communities. • 7,586 knowledge experts. • 14,113 knowledge documents.
Strategic Knowledge Management (SKM) Mechanism	By studying international benchmarks and gaining internal knowledge, Taipower customized its knowledge management activities or followed common communication agreements on a case to add value and revitalize the existing knowledge bank, which serves as a reference for employees' work and applies to the focuses or strategic project activities that the operation units are concerned with.

Establishing Taipower E-Learning School

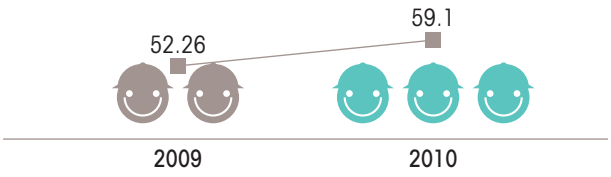
Riding the wave of the knowledge economy, Taipower plans to continue promoting the lifelong learning concept and integrating resources, such as various practical training and Taipower's internal E-Learning School (ELS), to form a learning type organization to strengthen employees' competitiveness.

In 2010, Taipower ELS offered 514 on-line courses and opened outside learning websites to provide employees with an environment of unlimited time and space in which to conduct voluntary on-line learning. In 2010, the average number of hours spent reading per employee on ELS was 7.4 hours. The average number of on-line and off-line reading hours per employee was 59.1. These two figures were higher than the targeted times.

The average no. of reading hours per employee on ELS



The average no. of on-line reading hours per employee



Establishing an Employee Proposal System

Taipower established the "implementation guidelines of employee proposal system" in 1994. This system provides a platform for the employees to openly demonstrate their potential and creativity and offered suggestions for improvement in a spirit of team work. Employees can propose concrete implementation projects to pursue improvement and innovation for the company's management and operation.

In 2010, there were in total 6,041 proposals, of which 2,862 were awarded at an amount of NT$4,747,000. This indicated that the employees were enthusiastic about participating in this innovation proposal program.

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 public 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.

Having Executives Set Examples 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.

Enhancing Work Discipline and Upgrading the Company's Corporate Image

In order to substantiate the tasks of random checks and issue rewards and punishments at the right time to raise the effectiveness of incentives and alerts, working discipline and the record of rewards and punishments should be taken into consideration when conducting employees' work evaluation, promotion, training and rotation.

Operating in Accordance with the Law and Adhering to Moral Integrity

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

Creation of a Fair Employment Environment

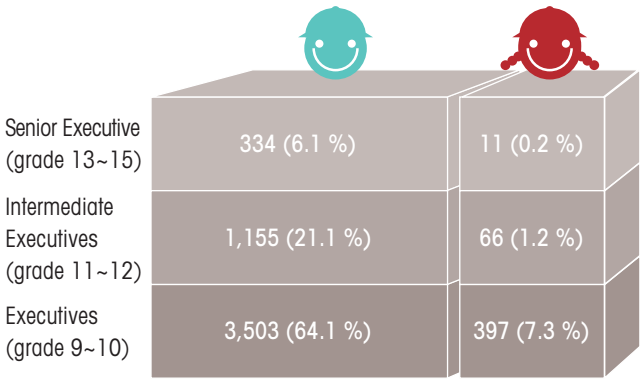
As personnel regulations are significantly related to employees' rights and interests, Taipower has made necessary changes according to the situation. Taipower provides the latest and the most comprehensive information service to its employees. All personnel-related regulations are displayed in FAQ style on the webpage of the Department of Human Resources.

Gender Equality

Male and Female employees are equally Taipower's most precious assets. Taipower always adheres to the spirit of gender equality in its recruitment, in its entrance test design and in its career planning for employees without any respect to gender.

The distribution between male and female executives

Total: 5,466



Employment of Disabled and Aboriginal People

To guarantee equal employment opportunities for minorities, Taipower has abided by the regulations stipulated in the People with Disability Rights Protection Act and the Indigenous Peoples Employment Rights Protection Act.

In 2010 Taipower employed 842 employees with disabilities (3.11% of Taipower's total number of employees, higher than the legal requirement of 3%), including 46 who passed the test in a special project in 2009 and were officially employed in 2010, and 161 employees of aboriginal descent (0.59%).

2010 Resignation and Retirement (RR) Rate

Executives/Non-Executives		Senior Executives		Intermediate Executives		Executives	
Gender	Unit						
No. of RR Personnel (incl. retirement and non-natural causes)	Persons	3	38	3	93	12	123
RR Rate (%) (based on the no. of total employees)	%	0.01	0.14	0.01	0.35	0.04	0.46
RR Rate (%) (based on the no. of each level's executives)	%	27.27	11.38	4.55	8.05	3.02	3.51

Labor-Management Relations

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 2010, the headquarters units and 75 subunits held 432 meetings, and 234 proposals were sent to the headquarters for processing. For important labor-management issues, Taipower will hold timely negotiations with the Taipower Union and offer explanations to them. There were in total 20 meetings held to solve the differences between labor and management in an accurate and timely manner, thereby achieving effective communication.

Executive-Employee Communication Meetings

In order to build up relationships based on mutual-trust and mutual-reliance to enhance its team work, Taipower set up "guidelines of enhancing communication with employees" to urge each unit's head to enhance communication and interaction with his/her members. Attention was specifically focused on employees' rights and interests.

To inspire good communication between the management level executives and their workers, Taipower gives out 3 awards each year to the units with the best-rated labor-management relationships to encourage each unit to continue strengthening the harmonious relationship between labor and management.

Group Wedding

In 2010, under the theme of "Taipower promotes harmonious unions for endless true love", Taipower and the Employees' Welfare Committee co-hosted the "31st Taipower Employee Group Wedding". Chairman Edward K.M. Chen was invited as the witness, and high-ranking officials served as ceremony officiators and introducers. With the blessings of the chairman, colleagues and others, 49 couples walked down the red carpet of happiness to fulfill a romantic, warm and memorable wedding.

Employee Assistance Program Mechanism (EAPs)

Purpose	Internal and external resources were integrated and applied to help employees solve the difficulties or problems in their work, lives, emotions, and health. A Taipower employee supportive network system has been established to raise the performance of the employees and the organization.
Status	Currently, 75 Heart-to-Heart Counseling Programs have been established. There were in total 628 counselors responsible for holding various employee assistance program activities, caring for colleagues and talking with them.
Projects	• Peace of Mind Service Project: Based on the concept of prevention is far better than remedy, the promotion of a stress-reduction group, occupational disaster crisis management and suicide-prevention activities were held. • Long-term Care and Health Enhancement Project: In response to the increasing average age of employees, the project helps employees avoid aging-related health issues and helps them care for their elders in ways that won't affect their work. • Other initiatives include a New Employee Assistance Project, an Employee Body and Mental Health Improvement Project, Employee Financial Consultation Project and a Legal Consultation Assistance Project.
2010 Achievements	• Over 1,000 employee assistance activities were held in 2010, including topical speeches, reading clubs and basic-level workshops. The number of first-time participants totaled 4,573. • Taipower's EAP effort was selected by the Ministry of Economic Affairs as an outstanding personnel benchmark and a role model for human resources management. • Taipower was invited to share its EAP strategies, methods and accomplishments in the " Government Employee Training Coordination Report Meeting and National Training Agencies Learning Activitity". • In January 2010, the cover of Teacher Chang Monthly featured "With Heart-to-Heart (bimonthly), Taipower is not afraid of Foxconn (suicide) incidents". The article introduced the origin and history of the EAP developed by Heart-to-Heart magazine. • Online media such as Yahoo News, Yam News and UDN News also reported on Taipower's longstanding support for employee psychological counseling and success in employee assistance.

Occupational Safety and Health

Taipower pays close attention to work safety and health management of its employees and contractors. According to the relevant Labor Safety and Health regulations, Taipower promotes and implements various work safety measures to establish a healthy and quality work environment to protect its employees' work safety. In 2010, Taipower participated in Workplace Safety and Health Week Series Activities and was awarded a place in the national and private enterprises group A.

Employees

To ensure that safety and health management strategies can be effectively put into practice, Taipower proactively implements various action plans and employee-related safety and health measures to maintain employees' work safety and health.

Establishing Labor Safety & Health Organization	• The Department of Industrial Safety & Health is the designated unit to promote industrial safety work. • The Labor Safety and Health Committee was established. Taipower's president serves as the chairman of the committee. There are 33 members (including one chairman, one vice chairman and 31 committee members), among them, 14 are from the Taipower Union, accounting for 42% of the total, a percentage that's higher than the legal requirement.
Establishing Taiwan's Occupational Safety & Health Management System (TOSHMS)	Assistance was offered to each unit to establish a TOSHMS. As of the end of 2010, 52 Taipower units, including generation, repair & maintenance, nuclear power, power supply, business, construction, etc., passed TOSHMS certification.
Signing Safety Commitment Statement	All of Taipower's employees signed a safety commitment statement to declare their determination to actively implement all work-safety related measures.
Promoting Training and Incentives	• The following tasks were undertaken: educating new employees about occupational safety regulations, strengthening the promotion of industrial safety among employees, and reeducating employees on industrial safety regulations and professional skills. In 2010, the participants totaled 43,000. • Regular and special physical check-ups were offered. Assistance, counseling and health management were provided for the follow-up of conditions listed in the physical check-up reports. • The employees with outstanding performance in promoting industrial safety work were openly recognized and awarded.
Enhancing Disease Prevention and Health Awareness	• Health seminars, consultations and free on-site screening services were conducted. • Taipower Clinic hosts health seminars every Saturday to raise employees' and contractors' awareness of disease prevention and health promotion issues.

Ensuring Contractor Safety

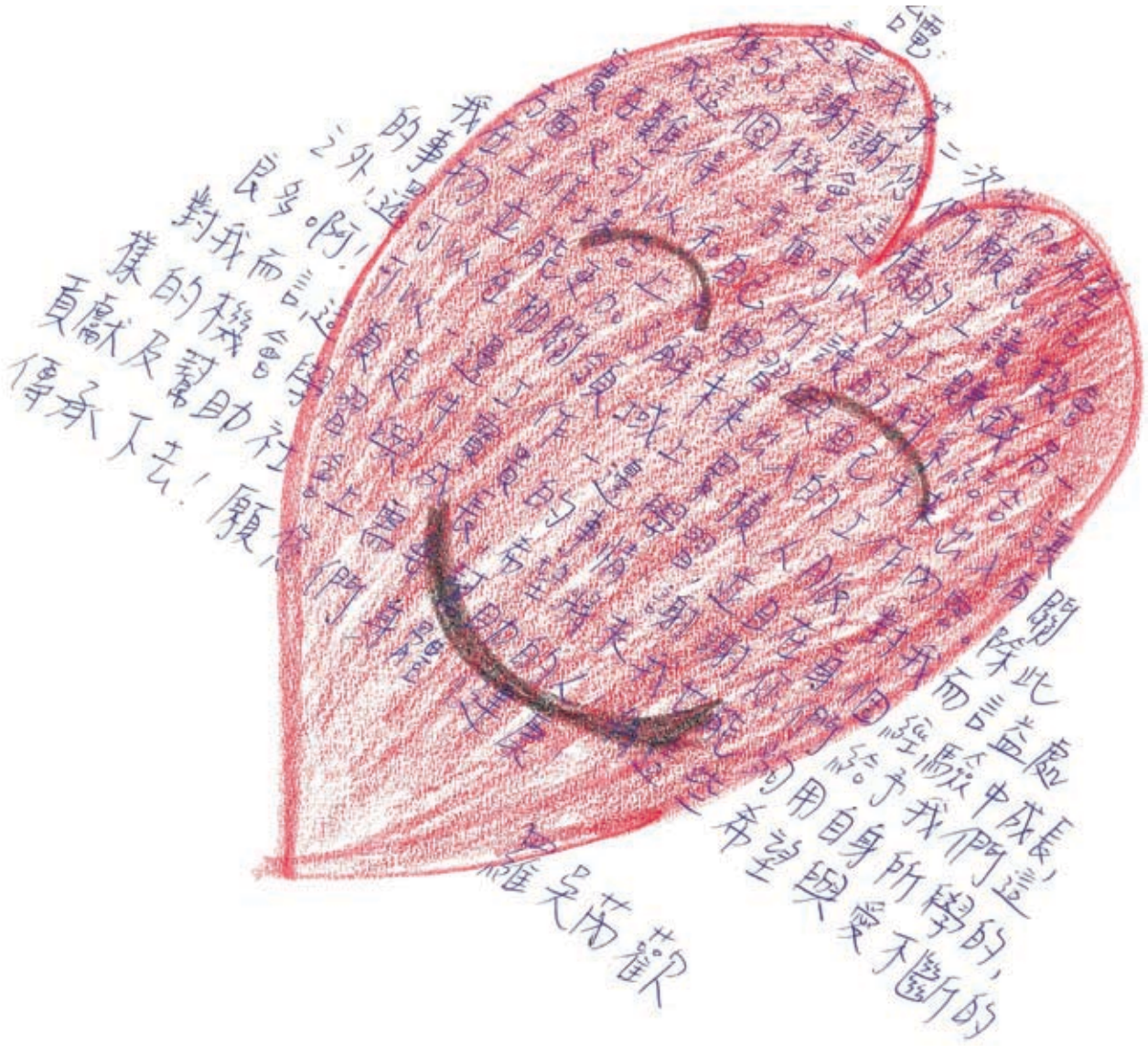
According to statistics collected on the types of occupational injuries, falls and electric shocks received during construction work account for about 70% of occupational injuries among contractors. To reduce contractor injury incidents and protect their safety, Taipower has adopted a strategy focused on 3 areas: assistance, checks, and promotion. Apart from actively assisting contractors with safety management and safety audits, Taipower has also strengthened its promotion of work safety measures, and reinforced contractors' consciousness of work safety. The relevant measures included:

Strengthening Safety Awareness	• Ensuring the security of safety & health facilities on work sites and strengthening workers' safety & health awareness. • Using contractors' penalty fines to host safety & health education sessions for contractors in each region to boost their safety awareness.
Implementing Tool Box Meeting (TBM) and Risk Prediction System (KY)	Encouraging site supervisors to explain to workers the task content, sequence, guidelines, risk factors and prevention measures by site supervisors before the start of each task. Records must also be kept.
Promoting Industrial Safety Responsibility Area System	Defining industrial safety responsibility areas and designating supervisors based on the characteristics of the project to strengthen checks to prevent unauthorized contractor work.
Conducting Assistance and Audits	• Strictly controlling contractors' working IDs, personnel roster, machines and tools and sending inspectors to the site for random checks. • Implementing regional joint disaster prevention tasks in open construction sites and reinforcing assistance to contractors to boost their self-management capabilities. • Designating staff to supervise high-risk work areas and strengthening assistance to contractors for their self-management on industrial safety. • Ensuring the effective implementation of the "7-3 Industrial Safety Measures" : 3 protections on industrial safety, 3 implementations on safety and health, 3 musts on electric safety, 3 measures for preventing falls, 3 requirements on zoning, 3 facilities on excavations, and 3 yields on traffic.
Promoting Industrial Safety Concepts	• Jointly hosting disaster prevention promotion campaigns with labor agencies. • Giving out the "7-3 Industrial Safety Card" to frontline contractors. Contractors are required to carry the card and follow the standard operation procedures to protect their lives and safety. • Enhancing promotion and urging contractors to strictly observe various industry safety regulations during peak industrial incident times, such as Chinese Lunar New Year season and the summer months, to reduce the risk of incidents.

Despite the joint efforts of Taipower employees and contractors, in 2010, there were 2 serious industrial safety incidents that led to the death of 2 employees. Taipower has conducted a thorough review of the incidents and formulated prevention measures across the board to avoid repeating them. There were 11contractor-related occupational incidents resulting in 5 death and 11 injuries. Taipower is committed to the concept of "life is priceless" and will continue to strengthen contractor management measures to realize our goal of zero incidents.

Social Participation

Taipower has always committed itself to being 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 in order to fulfill its commitment to creating a win-win situation with its stakeholders.



Unit: NT$ million

Community Care	Local Public Projects	Culture & Educational Activities	Local Industry Development	Sports Activities
24.11	2,713.07	64.71	12.60	30.49

Total Community Investment in 2010: $2,844.98

Dancing Girl

"Dancing Girl" was formed by 13 young and vibrant new employees. They represent a brand new image of Taipower - youth, health, professionalism and vitality. They come from different departments of the company and practice as a club after work. They promote Taipower's image with their young vitality and reach out to the people through love and smiles.

In 2010, Dancing Girl performed for the first time at the "Conference of the Electricity Power Supply Industry" hosted by Taipower. Their performance won the applause of international visitors and successfully marketed Taiwan's image.

In the future, Dancing Girl will take part in Taipower's charitable activities including: Firefly, Children's Reading Plan – giving presents to the after-school students, Seeds of Hope Program – expressing thankfulness to the aboriginal young people, and Light of Love – offering blessings to the elders that live alone. Dancing Girl brings warmth to society and has become Taipower's good-will ambassadors, loved and trusted by the people.

Local Industrial Development

In order to promote local prosperity and local industrial development, Taipower assists local governments in the towns and villages surrounding the power facilities by 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 is then established to promote local prosperity and the development of other industries and businesses.

In 2010 Taipower helped promote industrial and location-themed activities in the following 12 villages: Pingsi: Sky Lantern Festival, Yungan: Grouper Cultural Festival, Cheting: Ocean (Mullet Roe) Cultural Festival, Mituo: Milkfish Cultural Festival, Gangshan: Lamb Cultural Festival, Luju: Tomato Cultural Festival, Jinshan: Sweet Potato Cultural Festival, Sanchih: Waterwheel Cultural Festival, Shimen: Kite Cultural Festival, Gongliao: Gongliao Ocean Music Festival, Shuangsi: Chinese Yam Cultural Festival, and Hengchun: Flying Fish Cultural Festival.

Care-Free Bicycle Tour

Cycling is not only a healthy form of exercise but can also serve as an option for low-carbon transportation. To promote the concepts of LOHAS, energy conservation and carbon reduction, Taipower partnered with the "Taiwan Cyclist Federation" to organize the "2010 Taipower Care-Free Bicycle Tour". With the slogan of "Riding for fun and making the earth more beautiful", the activity encouraged the general public to pursue a healthy and happy low-carbon lifestyle.

The activity started from the 3rd Nuclear Power Plant. The bicyclists rode along the highway, passing the Old Hengchun City Gate and arriving at the National Museum of Marine Biology & Aquarium. From there, the bicyclists rode along the coastal line, passing the scenic sites of Wanlitong, Hongchaikeng and Baisha and then returning to the 3rd Nuclear Power Plant. The total riding distance was 37 km. This activity was highly and unanimously praised by the more than 13,000 participants and spectators. To fulfill the event's educational purpose, an energy-conservation booth was installed and prizes were offered to the winners of energy conservation and carbon reduction questions. Other performances included an African drumming band and a Moon Qin (a 4-stringed musical instrument) band from the Daguang Elementary School as well as hot dances and cocktail bartending from the Hengchun Vocational High School. Taipower hopes that the activity will encourage the participanpts to treasure energy and save power consumption. In summer time, people should turn off unnecessary power sources and go outdoors to enjoy fresh air and embrace the great outdoors.

Reading Center and Reading Room

To cultivate a reading society and welcome the coming of the knowledge economy era, Taipower was the first state-owned enterprise to establish reading centers in 2003. As of the end of 2010, there were 25 reading centers and rooms located in the Taiwan and Penghu areas, providing more than a thousand seats for students. These centers and rooms not only provide a location for sharing enterprise resources but also raise the spirit of the public.

Light of Love – Year-End Senior Citizens Attentive Care

Chinese New Year is a 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 launched the power of love and gathered manpower and funds to jointly host the "Light of Love – Year-End Senior Attentive Care" activities with Taitung Christian Hospital and the A Kernel of Wheat Foundation.

In 2010, 20 volunteers from the Taitung Branch invited 132 seniors to the Chinese New Year Eve dinners. Taipower employees accompanied them to do festival shopping trips, and new year's supplies were also sent to 168 disabled seniors through home delivery. Thus, the lonely seniors were able to feel the warmth of the society and have a happy new year.

Taipower Sports Teams

Taipower has spared no effort to promote sports activities. Taipower has established baseball, soccer, volleyball, basketball and badminton teams and has cultivated many talented athletes for the country. The team players have often used their free time to hold demonstration games in each level of schools, conveying basic ball-playing concepts and skills to promote a sports culture. They have also participated in community charitable activities, a fact which is highly appreciated by local residents.

Seeds of Hope

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.

The program provides low-income aboriginal college students from Hualien, Tatung and Pingtung counties with job opportunities in their hometowns in the summer time. This is done in an attempt to encourage them to cultivate their hometowns, while working to earn their tuition.

In addition to taking part-time jobs in social welfare medical agencies, the students were allowed to enter communities to offer tribal service including: tribal health census, meal delivery, housecleaning and daycare for the elders who live alone, and after-school classes for disadvantaged elementary students. 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 2010, 75 summer jobs were provided to local aboriginal college students.

Firefly, Children's Reading Plan

As educational resources in the Tatung and Hualien regions are very limited, lots of students there are in great need of assistance. Taipower and the A Kernel of Wheat Foundation continued to jointly promote the "Firefly, Children's Reading Plan" in 2010. 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.

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. There were in total 240 students who attended these classes.
Mobile Book Carts	Mobile book carts went to the tribes in the remote mountainous areas and communities every two weeks. There were in total 234 times with 17,584 participants.
Summertime Growing Reading Camps	Thirteen summertime growing reading camps were held with 100 participants.
Little Angel Heroes Gathering	The activity was held in Taitung Christian Hospital. The students were encouraged 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.

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 2010 Taipower saw a loss of NT$5.1 billion.

Energy Conservation Service

To comply with the government's energy conservation and carbon reduction policy and to cope with the global energy shortage crisis, Taipower provided a free power-saving promotion service to communities. This was done to advocate accurate power-saving skills and the use of high-efficiency energy conservation products, and offer suggestions for the improvement of public power consumption facilities.

There were two kinds of community energy conservation service provided – consultation and diagnosis. Assemblies were used to promote power-saving efforts and share power-saving related knowledge and experience. In 2009 and 2010, 365 community service events were held, covering each area of the country (north, central and south) and offshore islets. A total of 19,000 residents participated in community power-saving promotion seminars. Enthusiastic responses were obtained from participants in every community.

Beach Clean-up Activity

To encourage employees to engage in environmental protection activities by themselves and to encourage more people to get involved in environmental protection and eco-conservation, Taipower continued to hold its beach clean-up activity, which entered its 17th year. Each year, Taipower will call for its employees and local residents to join together in cleaning up the coastal areas (beaches) near where power plants are located and at off-shore islet areas. This is done with a mindset of caring for the environment by restoring the shoreline to its pristine state and leaving a clean living environment for future generations.

Subsidies for Local Charitable Activities

In order to strengthen the welfare of the residents living in areas near power facilities, Taipower established the Approval Committee of Power Development Foundation (APDF), a body in charge of distributing subsidies for local construction projects. In 2010, Taipower offered a total of NT$2.815 billion 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 of APDF in 2010 included: proactively planning the landscape surrounding the power plants, assisting the government agencies and schools to switch to power-saving lighting equipment, conducting a low-carbon island energy conservation balancing GHG emissions demo project, and assisting World Vision, Taiwan, by holding "brighten Taiwan with love and help the emergency families" activities.

Amount of Subsidies

Unit: NT$ billion

2008	2009	2010
2.718	2.563	2.815

Volunteer Service

The Implementation Plan of Taipower Volunteer Service Team was set up in 2010. The plan included: education on energy conservation and carbon reductions, promotion of power consumption safety, participation in local community charitable activities, service to disadvantaged groups, emergency help, social care, environmental protection, etc. This will ensure the implementation of all volunteer services related to humanitarian assistance and environmental protection.

Taipower is actively planning new charitable activities. New employees are encouraged to join the volunteer services team and take part in volunteer activities in their spare time. In 2010, 504 employees completed basic volunteer training.

Student Scholarships

Each year, Taipower holds scholarship award activities to encourage the disadvantaged students from low-income families who live in the areas nearby power plants.

In addition, in 2010, a "special scholarship" was also offered in northern, central and southern Taiwan to the high school and college students from families living nearby power facilities who had suffered economical difficulties and other serious incidents that needed emergency assistance.

To see how students fared after receiving assistance, the 10 power plants in northern, central and southern Taiwan jointly held a "Current Living Status of Special Scholarship Awarded Students" activity. Through a one-day trip, the students became acquainted with each other and enhanced their interpersonal relationships. There were in total 240 students and their family members who participated in this activity.

During the activity, Taipower also interviewed students and their families one-by-one to learn more about the students' recent living conditions. For the eighty-some students who were still in economical difficulties, Taipower helped them to get through the Lunar New Year with the action of "giving warmth in the winter time".

2009	2010
Amount: NT$54.55 million Students: 18,739	Amount: NT$59.78 million Students: 18,260

Homes Built with Love and Care – Reconstruction of Shanlin Great Charity Houses in the Typhoon Morakot Flood Area

When Typhoon Morakot devastated southern Taiwan in 2009, Taipower immediately launched emergency repairs and recovery tasks as part of its social responsibility to help disaster survivors rebuild their lives. In 2010, Taipower continued to participate in reconstruction efforts. Complying with Kaohsiung City's permanent housing project, Taipower offered assistance in the power infrastructure project.

By actively participating in the meetings between the government, builders and non-government organizations, Taipower monitored the progress of permanent housing construction and streamlined administrative procedures to finish the power-supply facilities for over 700 permanent houses in time. With love and care, Taipower provided people with warm and safe houses that prevailed with brightness and hope. Taipower's efforts gained enthusiastic response from the communities and the people.

Communication between Taipower and Stakeholders

Taipower's operation and business activities are closely linked with its stakeholders, including customers, shareholders, the government, employees, etc. Stakeholders' opinions and requirements help improve the quality of our service and operation.

Customer Service

"Customer-first, satisfying customers' requirements" is Taipower's service philosophy. It is also the key factor that helps Taipower continuously win its customers' recognition and build a mutual trust with them. Taipower activates various customer service mechanisms and provides a transparent communication platform to ensure that customers' voices can be heard and responded to, thus improving our service efficiency and creating new service opportunities.

Communication with Stakeholders

Through various interfaces, Taipower communicates with its internal and external stakeholders. In addition to enhancing management efficiency and upgrading service quality, the most important company goal is to ensure that its stakeholders' voices and requirements can be received and responded to. Through conversation, participation and cooperation, Taipower solves the issues that are of concern to the stakeholders, and establishes a state of co-prosperity and win-win situations with its stakeholders.

Key Sustainability Issue	Commitment	Goal
Promoting Reasonable Tariff Schedules	Continuing to disclose all operating cost information to enhance the public's understanding; establishing a reasonable tariff schedules adjustment mechanism and promoting a list of reasonable tariff schedules.	Setting up reasonable tariff rates to reflect power supply costs, offering guidance to customers for effective use of power through sending out correct pricing signals, avoiding cross-subsidy of power consumption, to set up a list of effective and fair tariff schedules.

Customer Service

Taipower's website provides useful information for customers, such as electricity and life, electricity library, service locations, customer service information, tariff schedules, information related to electromagnetic fields, and website counter services. Each year Taipower publishes the Taipower Customer Service White Paper to show its commitment to integrity, caring, innovation and service. The White Paper can be downloaded at http://www.taipower.com.tw".

Process of Complaints

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

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 Taipower service offices and/or use the Taipower website's customer suggestion box (service@taipower.com.tw) to ask for assistance.

In 2010, 2,713 complaints were recorded, of which 1,658 were received via e-mail. Most complaints related to areas such as line relocation (752 cases, 27.7%), bill collection (361 cases, 13.3%), and power supply quality (338 cases, 12.5%).

Customer Complaints

Unit: cases

2008	2009	2010
2,985	3,056	2,713

Customer Satisfaction

Customers' opinions are very important to Taipower. Since 2002, Taipower has entrusted an outside professional agency to conduct periodical customer satisfaction survey with regular customers and medium and large customers (more than 100 KW). The overall customer satisfaction rate has remained above 85 percent over the past 3 years.

To fulfill customers' expectation for service quality, in the future, Taipower will continue to review and improve various ways of providing convenient service to customers and strengthen its communication with customers as well.

Customer Satisfaction Scores over the Past 3 Years

Unit: %

2008	2009	2010
86.3	86.0	86.1

Continuous Research into Ways to Reduce Inconvenience

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

Whenever the power cannot be reconnected on time due to problems with facility installation, Taipower will make an honest effort to inform the customer and look for ways to resolve the issue. Taipower is committed to providing high-quality power.

In order to reduce the inconvenience caused by power outages, Taipower strengthened its maintenance inspection procedures to reduce incidents and promoted feeder automation projects and improved distribution lines to reduce the frequency and duration of power outages.

Confidentiality of Customer Information

To meet the regulations of the Personal Information Protection Act, Taipower conducted an inventory check on personal information files and systems in 2010 to review the necessary fields and amend related business regulations. 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 Agreement with contractors and a Statement of Information Confidentiality with the employees of contractors to ensure the company's information security.	Inputting customers' detailed personal information for their applications, inquires and bill payments to ensure customer information security.

Information Security (IS)

To deal with the increasingly rampant activities of hackers and to prevent them from illegally tampering with information related to Taipower's customers, Taipower conducts e-mail social engineering drills each quarter to strengthen employees' understanding of safe e-mail practices. The results of the drills have all met the regulations set at the National Information Security Meeting.

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

As of the end of 2010, the units with IS grades A and B continued to retain their ISO 27001 IS management system certifications.

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. According to this plan, Taipower completed all of the program revision tasks and tests to ensure that the operation of all facilities and information system would remain incident-free.

Unified Counter Service

The counters at Taipower's branch service centers and Taipower's Service Offices can handle all applications through a shared system. In addition, Taipower has provided multiple channels for processing power applications: in person, on the Taipower website, by telephone, via fax and through mail, etc. to save customers' time and energy.

E-Application Channels and E-Mail Notification Service

To facilitate customers' 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. In 2010, there were about 53,000 applications processed through the Taipower website, accounting for 2.4% of the total number of applications.

To simplify operation flow and to accelerate efficiency, the application process has been completely opened to the use of citizen digital and business certificates. Furthermore, to cope with the requirements of the internet era, Taipower originated an e-mail service especially for high-voltage customers that provides information on such items as power bills, business regulations, payment deadlines, power supply recovery deadlines, forced outages, scheduled outages, etc. The service content will be expanded according to customer needs.

Multiple Bill Payment Service

Taipower has 12.58 million customers. To satisfy customers' requirements for multiple channels for making bill payments, excluding the Matsu area, where the bill payments of the nearly 2,000 customers are collected by Taipower personnel, Taipower offers the following bill payment measures:

- Bank and post office accounts, and credit cards.
- Financial institutions, post offices and convenience store counters (applicable to meter-lighting and low-voltage customers).
- Telephones, cell phones, ATMs, the Taipower website, and the MOD (Multimedia on Demand) system (applicable to meter-lighting and low-voltage customers).
- Taipower service units.

Call Center Service

A call center system was installed in northern and central Taiwan. With the telephone number of 1911, the Call Center offers 24-hour service including applications, tariff rates, power line repair and maintenance, complaints, etc.

Special Customer Service

To establish a 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 done in an attempt to win the customers' support and trust.

Number of Special Customer Visits

2008	2009	2010
90,927	74,370	71,763

Customer Opinion Box

Taipower's e-mail inbox on the Taipower wbsite provides a channel for customers to express opinions directly through the wbsite. 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 2010, 6,290 e-mails were processed. This e-mail system has become an important communication channel between Taipower and its customers.

Number of Suggestions Received

2008	2009	2010
5,813	7,166	6,290

Promotion of Reasonable Tariff Schedules

Owing to government policy, tariff schedules cannot completely reflect power supply costs. These long-term low prices have led Taipower to suffer continuous losses and an increasing rate of debt year by year. Wrong pricing signals are unable to cultivate energy conservation habits for the general public. Therefore, in order to raise energy use efficiency and promote energy conservation and carbon reduction, the tariff schedules should reasonably reflect the costs of power supply.

To maintain the sustainable operation of the power industry, in the future, Taipower will work toward "relaxing the restrictions of tariff rates reflecting fuel costs provision" and establishing "a comprehensive tariff schedules review mechanism". These efforts will be done in the hope that tariff schedules can effectively reflect operation costs and lead to reasonable profits to maintain sustainable operation of the power industry.

Relaxing Restrictions of "Tariff Rates Reflecting Fuel Costs Provision"

In 2008, Taipower, based on the decision to adjust tariff schedules in two phases, formulated a "tariff rates and fuel prices provision mechanism", which was approved by the MOEA. The company plans to make quarterly review on fuel costs and tariff schedules. However, due to the consideration of economic conditions and other factors, this adjustment mechanism had yet to start as of the end of 2010.

Comprehensive Tariff Schedules Review

- The current fuel provision mechanism only considers the fluctuations in fuel prices, whereas 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, trading cost for carbon credits, etc. are not taken into consideration. To make tariff schedules more closely match the ideals of social responsibility and fairness, energy conservation and carbon reduction, and the principle of consumer-funded energy, a long-term "comprehensive tariff schedules' review mechanism" should be established and it should follow the regulations stipulated in the Electricity Act: "The formulation of tariff schedules must be: the revenues of the power industry should compensate the necessary costs."

- In accordance with the decisions made in the National Energy Conference and Electricity and Natural Gas Pricing Consultation Meetings, Taipower submitted a "review on overall tariff schedules" to the Energy Bureau in 2010. Taipower presented its analysis and suggestions on the following issues: Taipower operation status, future financial concerns, study on the operation of the current tariff schedules mechanism, proposals for an overall tariff schedules structure, information disclosure, public supervision, etc.

As Taipower is a state-owned enterprise, its electricity pricing should not only reflect costs, but also comply with government policy, consider its impact on the economic environment and commodity prices, care for the burden of disadvantaged groups, and take into account the county's competitiveness and social acceptance. In the future, complying with the government policy, Taipower will continue its efforts to promote the livelihood of the island's economy and maintain social welfare.

Comparison of Electricity Pricing in Taiwan and Other Asian Countries

Unit:NT$/KWh

Country	Average Residential Electricity Rate	Country	Average Residential Electricity Rate
Malaysia	2.5928	South Korea	2.0733
South Korea	2.7155	Taiwan	2.3592
Taiwan	2.7343	Malaysia	2.6983
Thailand	3.2375	Thailand	2.9093
Hong Kong	3.9171	Hong Kong	3.0283
Singapore*	5.9882	Philippines*	4.3502
Philippines*	6.1419	Singapore*	4.4439
Japan	7.5353	Japan	5.2218

Notes: 1. Source: International Energy Agency (IEA), Electricity Information (2010 Edition) and Malaysia's TNB power utility's 2010 statistics.
2. Exchange rate set as US$1.0 = NT$33.0495 (average exchange rate in 2009).
3. * : data as of 2008.

Communication between Taipower and Stakeholders

2010 Participation Status of Taipower's Stakeholders

Stakeholder	Communication Interface	Issue	Participation Status
External Users of the Sustainability Report	• Designated contact window • Telephone	• Content of the Sustainability Report	• Sustainability Report is published and uploaded on the Taipower website each year for stakeholders to read or download.
Domestic IPP Partners	• On-site inspections and seminars	• Technical symposiums on different topics	• IPP power plant inspections are held at least twice a year. Taipower operation and maintenance units and contractors jointly discuss operation and maintenance-related issues.
Government	• Ministerial meetings	• Electricity pricing issues • Budget review by Legislative Yuan • Energy policy • Environmental impact assessment	• Taipower reports to the MOEA "Electricity and Natural Gas Pricing Consultation Committee" each quarter on the results of the "weight average cost per KWh of fossil fuels in power generation and power purchased". • Taipower budget review was completed in line with the review agenda of the Legislative Yuan. • Major changes or new measures of energy policies were announced. • Taipower conducted Environmental impact Assessment.
Shareholders	• "Shareholder area" on the Taipower website • Shareholder opinion box • Shareholder proposals presented in shareholders' meetings • Market observation post system (MOPS)	• Financial status • Share dividends • Shareholders' meeting information • Share transaction problems	• Set up "Shareholder Area" on the Taipower website to disclose the relevant information of the issues that the shareholders and the general public are concerned about. • All the information of shareholders' meetings, shareholder proposals, dividends and shareholding changes among Taipower personnel are disclosed on the MOPS.

Results	Unit/Contact Telephone
• Chinese and English versions of the Sustainability Report were completed in July and October 2010, respectively. 	• Dept. of Corporate Planning 02-23666463
• Inspections were implemented once in Mailiao and Hoping IPPs. 	• Dept. of System Operations 02-23666614
• MOEA convened 4 times for tthe "Electricity and Natural Gas Pricing Consultation Meeting". • Taipower's budget review was in compliance with the agenda of the Legislatlure Yuan. • 8 public promotion and communication meetings were held. • 3 public workshops were held on the subject of environmental impact assessment. 	• Dept. of Accounting 02-23667311 • Dept. of Accounting 02-23667311 • Dept. of Power Development 02-23667534 • Department of Environmental Protection 02-23667205
• One "Standing Shareholders' Meeting" was held. 	• Dept. of Finance 02-23666831

Stakeholder	Communication Interface	Issue	Participation Status
Employees	• Labor-management meetings held in headquarters units and subunits • Labor-management communication meetings on important issues • Group agreement negotiation meetings • Executives and employees communication meetings • Labor safety & health committee meetings	• Labor-management relationships • Major labor-management issues • Group agreement negotiation meetings • Basic level employees issues • Labor safety & health issues	• Labor-management meetings are held regularly in the headquarters units and subunits. • When encountering major labor-management issues, both parties will make appropriate communications. • Group agreement negotiation meeting is held periodically. • Basic level employees communication workshops were held to care for the employees and solve their problems. • Labor Safety and Health Committee held regular meetings.
Customers (incl. corporate customers)	• Visits to large customers in person • 1911 service hotline • 0800 service hotline • E-mail service	• Actively understand customer needs and their behavior and provide consultation on power consumption techniques • Provide service on tariff rates and business inquiries, handle applications for power supply and repair and maintenance of power supply facilities, and customer complaints	• Special customer service: The designated Taipower employees will periodically visit high voltage (over 100 KW) customers and village offices. • A call center was installed in northern and central Taiwan offering 24-hour service. The customers on the main island can dial the phone no. 1911 to access various services. • Customers can call 0800 hotline to respond to and inquire about various business strategies. • E-mail was used to notify service, send out information of power bills, revisions of business regulations, power consumption exceeding contracted amount, payment deadline, forced power outage, etc. • "Customer Opinion Box" and "Online Customer Satisfaction Survey" provide customers with multiple channels for expressing their opinions. • The "weight average cost per KWh of fossil fuels in power generation and power purchased" is regularly posted on the Taipower website.
Academic Agencies	• Opinion surveys • Seminars	• Survey on customer satisfaction on technical service • Survey on customer satisfaction • Promotion of R&D accomplishments • Exchange of technologies at home and abroad	• Taipower Research Institute provides technology and research service. The service satisfaction is understood through customer satisfaction survey. • Taipower participated in various power-related technology seminars and reported Taipower's R&D achievements to the participants.

Results	Unit/Contact Telephone
• 432 Labor-management meetings were held. • 20 labor-management meetings on major issues were held. • 12 group agreement negotiation meetings were held. • 210 basic level employees communication workshops were held. • 6 Labor Safety & Health Committee meetings were held. 	• Dept. of Human Resources 02-23667355 • Dept. of Industrial Safety and Health 02-23667216
• No. of special customer visits: 71,763. • Over 1.85 million calls were received by 1911 and 0800. Average call waiting time was 5.52 seconds. • 1,658 e-mails were processed. • 1,085 on-line customer satisfaction surveys were conducted. 	• Department of Business 02-23666672 02-23668472 • Department of Accounting 02-23667267
• No. of responses on the survey of technology service: 63. • No. of responses on research plan: 29. • Participation in "2010 Taipei International Invention Show & Technomart". • "Next Generation Green Energy Technology" at the 23rd Modern Engineering and Technology Seminar. 	• Taipower Research Institute 02-23601174 02-23601176

Stakeholder	Communication Interface	Issue	Participation Status
Community Residents	• Energy conservation service • Charity and good neighbor activities • Promotion meetings and seminars	• Energy conservation service • Participation in local charity and good neighbor activities • Promotion campaigns and public seminars such as: · Dry storage facilities at the 1st Nuclear Power Plant · Public seminar on the "Wanli Hydro Power Project" · Public seminar on the "Environmental Impact Statement of Linkou Thermal Power Plant Units 2 & 3 Expansion Project"	• Free power-saving consultation and diagnosis service are provided to community residents. • Community charity and good neighbor activities are actively attended. • A large-scale promotion meeting was respectively held in 47 villages in four counties: Chinshan, Wanli, Shimen, and Sanchih. • One large-scale promotion meeting was held respectively in the four counties. • A public seminar was held on the "Wanli Hydro Power Project". • A public seminar was held on the "Environmental Impact Statement of Linkou Thermal Power Plant Units 2 & 3 Expansion Project".
Contractors	• Industrial safety seminars and promotion meetings • Contract content workshops • Casework assistance	• Promotion of safety & health • Contract articles • Labor safety & health issues	• Contractor safety and health promotion meetings were held in northern, southern and central Taiwan. • Seminars were held from time to time. • Assistance was given to contractors to enhance their capability for self-management on work safety.
Industrial groups (trade unions, associations)	• Business forums • Personal visits	• Power consumption service measures and exchange on business matters	• Taipower held a forum with the Taiwan Electrical Contractors Association.
Media	• Press conference • Interview reports	• Status of the promotion of renewable energy • Introduction of Taipower's smart grid meter infrastructure • Taipower' management achievements in 2010 • Tariff schedules	• Taipower provided print and electronic media interview reports.

Results	Unit/Contact Telephone
• Provided energy-conservation services to 331 communities, such as: • The Kinmen-Matzu Construction Office took part in the Labor Day welfare promotion hike and model workers awarding activities hosted by the Lianjiang County. Government. • A total of 51 promotion meetings were held. • A public seminar was held in the Hualien Wanrong Elementary School on December 3, 2010. • A public seminar was held in the Hongfu Temple in Linkou, New Taipei City on December 17, 2010. 	• Dept. of Business 02-23667661 • Dept. of Public Relations 02-23667437 Different units are responsible for relevant work according to the nature of the projects.
• 11 safety and health promotion meetings were held in the 3 areas. • Assistance was offered 69 times. 	• Department of Industrial Safety and Health 02-23667216
• One forum was held. 	• Dept. of Business 02-23666670
• 3 press conferences were held. • 66 interviews were given by Taipower spokesperson or relevant units. 	• Dept of Public Relations 02-23666340

Taipower Outreach

Taipower actively responds to activities and initiatives launched by various domestic and international organizations to learn about the latest developments in sustainability and emerging technologies. This will help Taipower to think about and improve its sustainability strategy and enhance the quality of its sustainability actions. Taipower's interactions with outside organizations range from supporting proposals, research promotion and strategic alliances to the development and innovation of power technologies. Taipower believes that these cooperative relationships are crucial to Taipower's sustainable development. Following are some of the organizations that Taipower supports as well as Taipower's important partners.

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

Taipower joined the BCSD-Taiwan in 2003 and has since continued to support the organization's initiatives and actions. This includes the "Taiwan Enterprise Sustainability Forum" platform established by representative enterprises in Taiwan. Through learning from other industries' sustainability issues, and the integration and implementation of action plans used by similar trade industries, Taipower and its partners work together to become a sustainable development enterprise.

In 2010, Taipower took part in the "All people joining the one event movement for a Healthy and Low-Carbon happy life". The movement encouraged people to live a healthy and low-carbon lifestyle by making small changes in their lives. One day each month was set as Health Day, and people were encouraged to eat more fruit and vegetable and less red meat to alleviate the pressure of global warming.

World Safety Organization, WSO

The WSO is an international exchange platform focused on safety & health policy, academic research, information and equipment. Members come from key industries around the world. The WSO shares information with its members about the latest international development trends and practices, management tools and technologies.

Taipower joined the WSO in 1991 with the purpose of acquiring more information on environmental safety and health maintenance, and technology, experience and equipment that's useful for preventing injuries. Apart from attending annual meetings and activities, Taipower also joined the annual team meeting at the invitation of the Council of Labor Affairs to share and exchange experience on work safety reinforcement and technologies.

World Association of Nuclear Operators, WANO

WANO is an international association organized by power companies that operate nuclear power plants around the world. There are currently 36 operators, and the association serves as an important channel that transcends political barriers for the exchange of experience between nuclear power plant operators. The publications and the database of WANO are some of the most credible references in the nuclear power industry. Its member states 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 recurring.

To enhance nuclear power operation safety and performance, Taipower joined WANO as a member. Taipower can communicate with all of its fellow members around the world, participate in relevant activities and interact with other nuclear power operators to maintain its nuclear power operation performance and keep up with worldwide nuclear industry progress.

Institute of Nuclear Power Operations, INPO

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

INPO has international members from 16 countries. Since the nuclear generation units owned by Taipower are all American-style units, learning from American companies can help us increase the reliability, performance, and safety of our nuclear power plant operations. As an international member of INPO, Taipower can directly interact with U.S. nuclear power operators and nuclear power plants.

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

AESIEAP was established in 1975. It is a non-government organization founded by electricity providers in East Asia and the West Pacific. Its mission is to promote cooperation of electricity providers in the area and to provide a platform for the exchange of experience and technology. Its biennial Conference of the Electric Power Supply Industry (CEPSI) has become the region's largest conference and exhibition for electric power providers.

Taipower hosted AESIEAP's activities for 2009 and 2010.The AESIEAP 2009 CEO Conference was held in Kaohsiung from Oct.14-16, and the AESIEAP's 18th Conference of the Electric Power Supply Industry, CEPSI 2010, was held at Taipei International Convention Center from Oct. 24-28.

Association of Industrial Relations, R.O.C

Taipower has been a member of the Association of Industrial Relations since 1984. This association has helped to develop harmonious relationships between domestic labor and management.

2010 Conference of the Electric Power Supply Industry (CEPSI 2010)

Taipower hosted AESIEAP's activities for 2009 and 2010, including the CEO Conference in 2009 (Oct. 14-16) and the 18th CEPSI, with the theme of "Challenges and Opportunities of the Electric Power Industry in an Uncertain Era", in 2010 (Oct. 24-28).

The biennial electric power industry conference hosted by AESIEAP features keynote speeches, expert forums and panel discussions, so members can learn about how the electric industry in the Asia-Pacific area deals with energy, market competition, technology and business-related issues. The knowledge can then be used as a reference and example for pursuing electricity industry developments in each country and region.

The electricity technology exhibition was held at the same time, enabling the members to understand the latest development trends in power technologies. This is beneficial to the planning and implementation of power technology studies and facilities retrofit projects.

The Purpose of Hosting CEPSI 2010

- Enhancing the nation's overall image, promoting the development of the power and energy industries, and demonstrating the government's strong attention to power and energy and its determination to connect with the world.
- Upgrading Taipower's international popularity in the East Asia and West Pacific area, expanding power business operation and strengthening cooperation with international power industries.

  Hosting various conferences and power technology exhibitions so local industries can learn about new power technology developments knowledge from foreign exhibitors. The promotion of Taiwan's local culture and economic development will also help create business opportunities.

Achievements of CEPSI 2010

- Participation

  1,208 people registered for the conference, including 64 accompanying staff. A total of 15 members from the council and executive committee attended this conference. The attendance rate was 75%.

- Panel sessions and technical sessions
  1. 9 panel sessions: 38 experts from 16 countries were invited as speakers.
  2. 52 technical sessions: 269 papers were presented.

- Discussion topics

  Green energy & emerging energy, smart grid power transmission technology, carbon reduction strategy and technology, improvement of the efficiency of existing power generation technology, information & communications technology, smart grid power distribution technology, smart and efficient power generation, advanced smart meter infrastructure, development of advanced nuclear power generation technology, etc.

- Poster presentations: 112 papers

- Exhibitions
  1. No. of exhibitors: 44 (incl. top international companies such as ABB, IBM, AREVA, ALSTOM, Mitsubishi Heavy Industries, etc.)
  2. Exhibition area: 3,582 sq. m, 230 booths
  3. No. of visitors: 22,585

2010 Awards

Best Operation & Maintenance Project in Asia

In 2010, the "Second Nuclear Power Plant Installing a 360-Degree Work Platform over Reactors" in its reactor overhaul project was a breakthrough in terms of traditional operation restrictions. The maintenance of the reactor core was carried out in multiple points at the same time, greatly raising overhaul efficiency and reducing the number of overhaul days. This outstanding achievement won a gold medal as the "Best Operation and Maintenance Project" in the Asian Power Awards held by *Asian Power* magazine in Singapore.

Best Asian Transmission & Distribution Project of the Year

The total length of Taipower transmission lines, 16,153 ckt-km, reaches every corner of the country. As the transmission lines have been exposed on the natural environment for a long time, the damage caused by salt, fog and thunder, as well as accidental contact by wild animals such as monkeys and birds, led to power supply interruptions. Discovering the location of the faults is an extremely difficult and time-consuming process.

To overcome this problem, Taipower integrated the subsidiary function of the 345 KV transmission line system with the network communication technology to develop a "345 KV transmission line fault location reporting system", which can immediately detect the fault location and eliminate worry. In 2010, inspection patrol distance of the faults was reduced by 5,028.63 ckt-km, adding greatly to power supply stability. This system was awarded a gold medal as the "Best Asian Transmission and Distribution Project of the Year" in the Annual Asian Power Awards held by *Asian Power* magazine in Singapore.

2010 Outstanding Public Construction Awards

Taipower received three awards for outstanding construction quality in transmission and substation projects as well as an award for best personal contribution in 2010.

- Annan-Fuchen 161 KV Underground Cable Turnkey Project received an outstanding award in the civil engineering category.
- The Kaokung-Wuchia-Kaohsiung 345 KV Underground Cable Turnkey Project received an outstanding award in the civil engineering category.
- Shewan Primary Distribution Substation Turnkey Project received an outstanding award in the facilities category.
- Mr. Fang-nan Guo's (a section chief) strategy for the promotion of upgrading the overall distribution construction quality received a gold medal award and an outstanding personal contribution, category 2, award.

Taiwan Corporate Sustainability Report Award

To encourage domestic corporations to keep up with global trends, and 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 accomplishments to the public in the three categories of economy, society and environment. In 2010, Taipower won a silver award in the 2010 Corporate Sustainability Report Awards.

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EN23	Significant spills	None
EN24	Movements of hazardous waste	36,59
EN25	Habitats affected by discharge and runoff	58
EN26	Environmental impact mitigation	51
EN27	Packaging materials	Not applicable. Taipower is a public power utility.
EN28	Non-compliance sanctions	59
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LA2	Employee turnover	Nearly all workers retired at mandatory age.

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EU3	Length of above and underground transmission and distribution lines by regulatory regime	15,30
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	30-32
EU6	Demand-side management programs including residential, commercial, institutional and industrial programs	38-39
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EU8	Provisions for decommissioning of nuclear power sites	34
EU9	Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime(MW)	15,29
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EU11	Electricity saved from demand-side management programs(MWh)	25, 38-39
EU12	Average generation efficiency of thermal plants by energy source and by regulatory regime	27
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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	14,61
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	82-87
EU19	Approach to managing the impacts of displacement	None
EU20	Contingency planning measures, disaster/ emergency management plan and training programs, and recovery/ restoration plans	21,37
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	30,32
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	67
EU25	Percentage of population unserved in licensed distribution or service areas	None
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