

2006 Chubu Electric Power CSR Report



#### C O N T E N T S

#### 2006 Chubu Electric Power CSR Report

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#### **Editorial Policy**

This report describes our efforts to help achieve a sustainable society, and the results of our initiatives. Since 1994, we had been publishing the Chubu Electric Power Annual Environmental Report. Starting this year, however, we are publishing the CSR (Corporate Social Responsibility) Report, with even more content describing our many initiatives in the fields of management and economy, the environment, and society.

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#### **Report Period**

FY 2005 (From April 2005 to March 2006)

#### **Date of Previous Report**

June 2005 (2005 Annual Environmental Report)

#### Organizations Covered by This Report

As a rule, the performance of Chubu Electric Power Co., Ltd. is reported on a non-consolidated basis. In some instances, the performance of companies in the Chubu Electric Power Group is reported.

#### **Guidelines Referenced**

Sustainability Reporting Guidelines 2002 issued by Global Reporting Initiative (GRI)

Environmental Reporting Guidelines (FY 2003 Version) issued by the Ministry of the Environment

#### **Contacting Us**

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#### About the Symbols in this Report

#### Look! P00

URL

Page numbers for reference or related information

#### http://www.

Links to detailed/related information on our Website or other sites

Schematic Diagram of Chubu Electric Power System

## **Corporate Profile**

Chubu Electric Power Co., Inc.				
1 Toshin-cho, Higashi-ku, Nagoya 461-8680, Japan				
Phone +81-52-951-8211				
President	Toshio Mita			
Established	May 1, 1951			

#### Corporate Profile (as of end of March 2006)

Capital	430.7 billion yen
Total Assets	5,488 billion yen
Interest-Bearing Debt	3,101.1 billion yen
Number of Outstanding Shares	782,153,165
Number of Shareholders	347,931
Service Area	5 prefectures in the Chubu re-
	gion: Aichi, Gifu (excluding
	some areas), Mie (excluding
	some areas), Nagano, and
	Shizuoka (all areas west of the
	Fujigawa River)
Number of Customers (excluding c	
Light	8,962 thousand
Power	1,337 thousand
Total	10,299 thousand
Electric Power Sold	130.6 TWh
Total operating revenues	
(Parent Only)	2,069.3 billion yen
Total operating revenues	
(Consolidated)	2,150.5 billion yen
Ordinary Income	,
(Parent Only)	205.9 billion yen
Ordinary Income	,
(Consolidated)	219.6 billion yen
Shareholders' Equity Ratio	28.0%
Power Generation Facilities	
Thermal	22.369 G W (11 locations)
Hydroelectric	5.22 GW (182 locations)
Nuclear	4.997 GW (1 location)
Total	32.586GW (194 locations)
Power Transmission Facilities	· · · · · ·
Transmission Line Route Length	n 12,149 km
Transforming Facilities	
Number of Substations	935 locations
Capacity	120.110 million kVA
	300,000 kW*
Linkage Station	1 location
Capacity	300,000 kW
Power Distribution Facilities	• -
Distribution Line Length	134,498 km
Number of Employees	16,245 people
. ,	

\*: For frequency conversion facilities (capacity: 100,000 kW), please refer to other pages

#### **Primary Business Areas**

Electric utility and related enterprises Gas supply, thermal storage brokerage Distributed generation systems Overseas consulting & investment Real estate management service IT business Etc.



#### **Electric Power Sales Trend**



#### Breakdown of Generated Output by Source



## Chubu Electric Power Group

We are committed to creating a sustainable society by making the best use of our technology and expertise.



#### 52 Group companies Fumio Kawaguchi Consolidated subsidiaries (32 companies) Affiliated companies subject to the Equity Method (20 companies)

LNG Chubu CORPORATION C ENERGY CO., INC. Chita L.N.G. Co., Ltd. S-energy service Co., Ltd. CJIA ENERGY SUPPLY COMPANY, LTD. Nagoya Energy Service Co., Ltd. Compañía de Generación Valladolid, S. de R.L. de C.V. Hamamatsu D.H.C. Co., Ltd. Hokuriku Erunesu Co., Ltd. A.T.Biopower Co., Ltd.

Chuden CTI Co., Ltd. Chubu Telecommunications Co., Inc. Network Support Service Company, Incorporated CHUBU CABLE NETWORK COMPANY, INCORPORATED Hamaoka Cable Television

**Electricity and Energy** 

**Real Estate** 

Telecommunications

Logistics

Toshio Mita

Eiraku Development Co., Ltd. **C-TECH CORPORATION** Chubu Greenery Co., Ltd. Chubu Plant Service Co., Ltd. TOENEC CORPORATION

Chubu Electric Power Construction

Service

Manufacturing

GLYENCE Co., Ltd. COMRES CORPORATION CHUBUSEIKI Co., Ltd. AICHI KINZOKU KOGYO Co., Ltd. AICHI ELECTRIC Co., Ltd. Chita Tansan CO., Ltd. Chubu Liquid Oxygen CO., Ltd. TOKAI CONCRETE INDUSTRIES Co., Ltd.

EIRAKU AUTO SERVICE Co., Ltd. Chita Berth Co., Inc. Chuden Wing Co., Ltd. CHUDEN KOGYO Co., Ltd. CHUDEN BUSINESS SUPPORT Co., Ltd. Chuden Bldg. Co., Inc. Chuden Disaster Prevention Co., Ltd. Chuden Transportation Service Co., Ltd. CHUBU HOME WARANTEE CORPORATION Chubu Cryogenics Co., Ltd. Techno Chubu Co., Ltd. TOHO Industry Co., Ltd.

Toho Oil Co., Ltd. NITTAI Co., Ltd. LiveNet Co., Ltd. Kiray Yu Co., Inc. Chubu Electric Power Company International B.V. Chubu Electric Power (Thailand) Co., Ltd. Chubu Electric Power Company U.S.A. Inc. KASUMI BERTH CO., INC. SHIN-NIHON HELICOPTER Co., Ltd. NIPPON MALENIT CO., LTD. Compañía de Operación Valladolid, S. de R.L.de C.V de C.V. CHUBU Ratchaburi Electric Services Co., Ltd.

#### CSR Declaration Fulfilling our responsibilities and meeting society's expectations.

#### Formulation of our CSR Declaration

We have worked actively to fulfill our responsibilities as a good corporate citizen through our initiatives to establish a compliance system and resolve global environmental issues. We will continue to fulfill our corporate social responsibility (CSR) by working in good faith to meet the expectations of all our stakeholders, including our customers, shareholders and investors, local communities, business partners, and employees; communicating our initiatives in a clear and easy-to-understand manner; and continually improving them with the help of feedback from our stakeholders.

Although our CSR philosophy has already been incorporated into our Basic Management Policy, we have formulated our CSR Declaration – "Fulfilling our responsibilities and meeting society's expectations" – in order to create a more unified CSR message within our company to further promote our initiatives, and to communicate our message more clearly and concisely to our stakeholders. We are determined to carry out this declaration through our business activities.

#### **General Management Policy**

Recalling the origins of our business and creating a future of joint advances with our customers.
 .....Creating the future with our customers
 Contributing to the global community as a good corporate citizen.

ontributing to the global community as a good corporate citize ......Forming a part of the global community

3. Generating new vitality through commitment to the principle of self-responsibility

#### **CSR** Declaration

Fulfilling our responsibilities and

meeting the expectations of society

Chubu Electric Power is committed to: Contributing to the development of a sustainable society as a general energy service company by giving top priority to safety and striving to both provide a stable supply of energy and protect the global environment;

Managing our businesses in a fair and sincere manner by observing laws, regulations, and social rules, and respecting corporate ethics; and

Giving priority to dialogue with all our stakeholders and maintaining high levels of transparency and openness in our business activities.

*Customers* We are committed to providing our customers with safe, reliable, convenient, and inexpensive energy services.

Shareholders and investors We are striving to maintain and increase profits for our shareholders and investors through efficient management and effective investment.

Local communities We are determined to contribute to sustainable local development in partnership with local communities.

> *Business Partners* We promise to deal fairly with our suppliers as equal business partners.

*Employees* We respect individuals, and are endeavoring to create a cheerful and motivating workplace.

## Fulfilling our responsibilities and meeting society's expectations

Contributing toward a sustainable society



Fifty-five years of community trust and our determination to maintain this trust

On May 1, 2006, Chubu Electric Power proudly marked the 55th anniversary of its founding. Since then, we have worked tirelessly to reduce costs and ensure a stable supply of energy, in order to fulfill our mission as an energy supplier of providing continuous and reliable access to inexpensive, high-quality energy services.

Japan's electricity business is currently in the midst of great change. In April 2005, we began new initiatives in response to the increasing competition resulting from the liberalization of the electric power services market, which has expanded the scope of customers that are allowed to select electric power providers to those using at least 50 kW of power, such as small manufacturing plants and buildings. This liberalization has increased competition in all energy markets including gas market, breaking down barriers between industries and businesses.

Meanwhile, as public sector entity, our stakeholders' interest in our corporate social responsibility (CSR) has increased considerably. Under these circumstances, we believe that, as a general energy service company, we must offer services that meet our customers' needs, fulfill our corporate social responsibility, and increase the level of trust we enjoy from local communities, in order to receive the support of our stakeholders.

It is the understanding and cooperation of local communities in particular that enables us to install our power plants and many other facilities, and smoothly operate them. In order to respond to the support of these communities, we must have an unwavering commitment to safety. We give top priority to ensuring safety during our equipment operations and all other business activities.



#### Constantly improving, while responding sincerely to expectations

As a public utility company in the field of energy, CSR is not new to us: we have been committed to fulfilling our corporate social responsibility since our founding. In order to communicate our CSR philosophy in a clearer and more effective manner, we have created our CSR Declaration – Fulfilling our responsibilities and meeting society's expectations.

As stated in this declaration, we are committed to meeting the expectations of each of our stakeholders and pledge to constantly improving ourselves through our business activities.

We are also determined to fulfill our responsibility and accountability by disclosing information about our actions. In addition, it is our belief that avoiding complacency and constant selfscrutiny by keeping our initiatives in the public eye will eventually lead to further improvement.

## Preserving our irreplaceable earth for our children

We consider resolving global environmental issues to be one of the top priorities for the entire Chubu Electric Power Group, and the entire Group is united in its commitment to resolving environmental issues. In keeping with this commitment, in 2004 we issued the Chubu Electric Power Group Environmental Declaration, stating a common environmental philosophy and vision for the Group.

We are particularly making efforts to combat global warming. The entire group is not only working to improve power-generation efficiency, but is also partnering with our electricity customers in initiatives such as proposing devices with low environmental impact and ways to use energy efficiently.



The 21st century has been called "the century of the environment," and at Expo 2005 Aichi Japan, the first World Fair held in the new century, we had the opportunity to reflect on the environment with the children who will be the major players in the future. We were very successful in increasing international awareness of the need to protect the global environment for the next generation. We are committed to carrying on the spirit of Expo 2005 to do even more to fulfill our CSR as a good corporate and global citizen.

## Advancing into the future by responding to stakeholder feedback

We had long published our Annual Environmental Report; this year, we began publishing our CSR Report to provide expanded content, emphasizing our initiatives and achievements in sustainable growth that is in harmony with society.

We have built our company on a foundation of sincerely responding to feedback from our stakeholders. It is our hope that this report will help us communicate with even more stakeholders, and improve our CSR initiatives for the future. We continue to value your feedback as we move forward with new initiatives.

Ighin mi

Toshio Mita President

# 2005 Highlights

# People and Technology Initiatives for



acility inspection at Kawagoe Thermal Power Station. Advanced technologies and human skills help ensure a stable supply of electricity.

## Highlights of FY 2005 Initiatives

We are active in a number of initiatives to fulfill our CSR, including efforts to ensure a stable supply of energy, protect the environment, and contribute to local development. Here we present the highlights of our initiatives in FY 2005.

Highlight 1 – Leveraging technology to contribute to the environment

Highlight 2 – Contributing to society through communication

Highlight 3 – Providing satisfaction by helping to make living environments more pleasant

# 2005 Highlights

## Highlights of FY 2005 Initiatives 1 Leveraging technology to contribute to the environment

## Active commitment to developing environmental technologies

Research and development is a key tool for resolving management challenges. To further promote our R&D initiatives, we select strategic topics for R&D from a holistic perspective.

The environment is a major focus in the field of stable electricity supply. In addition to research into such topics as improving efficiency, reducing loss, and reducing CO<sub>2</sub> emissions, we also leverage the technical capabilities of all Group companies in a wide range of efforts to develop solutions to global environmental issues.

> Norio Ooiwa Energy Engineering Group Electric Power Research & Development Center



The Stirling engine I am researching uses an external heating technology, which makes it possible to generate electricity using heat from such sources as the sun, and incinerated waste and biomass. Until now, it was difficult to utilize waste heat, but this technology enables us to capture waste heat as electricity. I will continue to work on commercial applications for highly energy-efficient electricity technologies that are friendly to the global environment.



Visitors are fascinated by the Stirling engine (Techno Fair 2005)

#### Developing a compact biomass power-generator system The challenge of commercializing the Stirling engine

Biomass is a resource of biological origin, such as lumber from tree thinning. It is gaining popularity as a new energy source which when incinerated will not increase levels of CO<sub>2</sub> in the atmosphere. Until now, however, there have been a number of difficult technical challenges to the use of biomass for power generation. One such challenge was the need to gasify the fuel. Our attention was drawn to the Stirling engine as we searched for a way to create a compact power-generation system that could use biomass as-is, in its solid form.

While an ordinary internal combustion engine operates by injecting gasoline or another fuel into a cylinder and combusting it, the Stirling engine is an external combustion engine: heating and cooling from an external source expands and contracts gas inside a sealed cylinder, which in turn drives a piston. The use of an external heating system makes it possible to use a wide range of heat sources, including biomass. Although the system is theoretically capable of high heat efficiency, there have been almost no successful commercial applications of this technology to date.

> We have developed a high-efficiency, smallscale power generation system based on direct injection and combustion of biomass using the Stirling engine, and are currently conducting testing aimed at commercial applications. We are currently testing sawdust as a fuel for the system, in a joint research project with the New Energy and Industrial Technology Development Organization (NEDO). We are highly confident that if we can develop a commercially viable application for this system, we can help reduce CO2 emissions through its use as a small-scale distributed power system fueled by wood biomass.

High-efficiency small-scale power generation system based on direct injection and combustion of biomass





#### Developing the Eco Cute instantaneous direct-heating system **Successfully** reducing size of heat-on-demand water boiler

The Eco Cute is more energy efficient and economical than gas water heaters, and is gaining popularity as a water heater with low CO2 emissions. Conventional Eco Cute systems require space for a hot-water storage tank, because they heat water during the nighttime hours when electricity is cheapest, and store it for use throughout the day. Our goal in this project was to develop an instantaneous direct-heating version of Eco Cute that would heat water on demand, in order to reduce the amount of space required by the system. Increasing the heating power of the heat pump and developing a technology to control it in accordance with usage conditions made further space efficiency and miniaturization possible, enabling us to develop a space-efficient tank. We jointly developed this product with the Kansai Electric Power Co., Inc., and Hitachi Appliance, Inc. It won the Chairman's Grand Prize for Energy Conservation of The Energy Conservation Center, Japan (ECCJ) for FY 2005.

Mari Miyata Customer Technology Group **Energy Applications** Research & Development Center



My job is to develop more efficient and compact home water-heating systems. In cooperation with our sales team, we have researched how people are using their water heaters in order to design systems that match our customers' lifestyles and are easier to use. I feel great satisfaction in my work because I am helping make people's living environments more comfortable, while developing products with outstanding environmental features. My ultimate goal is to develop an ultra-compact wall-hanging water heater that will supply all the hot water you could want.

#### Winning 2006 Aichi Environmental Prize

In February 2006, we won the 2006 Aichi Environmental Prize in recognition of our efforts toward environmentally-conscious electricity supply and environmental conservation. Organized by Aichi Prefecture, the prize rewards companies, foundations, and other groups who Receiving award from Masaaki Kanda, have made pioneering and



governor of Aichi (right)

effective efforts to reduce environmental impact. We won this year's Grand Prize for our efforts to deliver world-class environmentally harmonious electricity supply and promote environmentalism.

# 2005 Highlights

## Highlights of FY 2005 Initiatives 2 Contributing to society through communication

#### Carrying on the spirit of Expo 2005 Aichi Japan

We are actively carrying out environmental efforts in partnership with local communities and society.

In FY 2005, we set up many venues for communication through Expo 2005 Aichi Japan, which was focused on the global environment.

We made special efforts to create opportunities to discuss environmental and energy issues with the young people who will play a key role in the future.

We are committed to carrying on the spirit of Expo 2005 to protect the global environmental through communication with our stakeholders. In the part led by Chubu Electric Power, elementaryschool children acted in plays and sang songs about ways that everybody can help the environment and other topics, gave presentations using computer images and other tools, and communicated environmental messages.

Before this event, we provided learning opportunities to about 240 elementary-school children in order to deepen their understanding, including a traveling classroom\*2 and a tour of a power plant. These efforts tied into presentations on the importance of energy resources and new energy, and created a common awareness among the participants. In order to continue to take advantage of this invaluable effort, we are planning to independently organize talk sessions

> between local elementary-school children and our directors starting in FY 2006.

\*1: The Environmental Partnership Organizing Club (EPOC) is an organization promoting environmental awareness established in February 2000 by Chubu Electric Power and 13 other local companies (as of end-FY 2005, it has 314 corporate members). Its activities include forums and social events.

\*2: Traveling classroom: We have a long-standing "traveling classroom" program. Under this program, our employees visit elementary schools, junior high schools, and others at their request to hold environment and energy classes, where students learn about such topics as energy resources and global warming, and electricity laboratory classes, where experiments are conducted using electricity from situations familiar to the students. We also work actively to create other opportunities to deepen interest in environmental and energy issues, including tours of our power plants and other facilities.

The EPOC Eco-Talk Session was very worthwhile

Masanori Hashimoto Elementary schoolteacher Seto Municipal Dohsen Elementary School



There are limits to the amount of specialized learning materials that the school can provide. That is why Chubu Electric's "traveling classroom" is a great help; its employees provide equipment for experiments, and speak on the subject as experts.

The information in textbooks and other sources tends to be superficial. Experiments generating electricity and tours of actual facilities create new discoveries and surprises.

As our children prepared to give presentations on what they had learned to a large audience at the Eco-Talk Session, Chubu Electric's support was very valuable because it helped us dig deeper into our topics. I am looking forward to more opportunities for partnerships between schools and companies.



#### Discussing the environment and energy with elementary-school children EPOC Eco-Talk Session

The EPOC Eco-Talk Session was held at the Expo 2005 Aichi Japan venue from June to July 2005. Organized by the Environmental Partnership Organizing Club (EPOC)\*1, this event brought together about 2,650 students from 26 elementary schools in Aichi prefecture to discuss the environment with the top management of 12 private-sector companies, including the president of our company.

#### Children's World Summit for the Environment and Field Tour in Gujo

In July 2005, the Children's World Summit for the Environment 2005 was held at the Expo 2005 Aichi Japan venues and elsewhere. Advocated by the United Nations Environment Program (UNEP), this event has been held around the world. This was the first time the summit was held in Asia. About 480 children from 55 countries around the world gathered for the summit, where they studied and exchanged views on the environment. As a result of their efforts, the children announced their own Aichi Declaration directed worldwide. Since our company's president chaired the executive committee, we were actively involved in and assisted the event in order to make this local summit a success.

After the summit, 27 children from four countries who had participated in the summit were invited to the city of Gujo, in Gifu Prefecture, for an event named "Field Tour in Gujo." In collaboration with the Gujo City Executive Committee, the children joined in a social gathering with local residents, and participated in events bringing them in contact with nature at our Uchigatani Forest. We were able to extend our circle of cooperation to children from other countries through the experience of Japan's rich natural environment and culture.



#### Paving the way for future activities: Field Tour in Gujo

Jin Ishikawa Environmental Planning & Administration Group Environmental Affairs Department



Through this event, we were able to build a broad network with NPOs and other community members. Expo 2005 Aichi Japan and the Children's World Summit for the Environment has increased interest in the environment, and I will work to tie this interest to future activities.

We have to value our irreplaceable Earth

Smitha Ramakrishna



My name is Smitha Ramakrishna. I am a 14 year-old girl from Arizona, in the United States. The greenery in Gujo takes my breath away; it is in stark contrast with my home town, which is in the desert.

I participated in the Children's World Summit for the Environment and Field Tour in Gujo because I want to become a leader in increasing local communities' awareness of the environment. As soon as I get back from my trip to Gujo, I plan to start visiting local elementary and junior high schools to this end.



Elementary students received instruction in a traveling classroom before participating in Eco-Talk Session



Chubu Electric Power's exhibition booth at the Children's World Summit for the Environment

# 2005 Highlights

## Highlights of FY 2005 Initiatives 3

## Providing satisfaction by helping to make living environments more pleasant

As our customers' lifestyles change, their needs also become more diverse, including need for safety, convenience, economic efficiency, and low environmental impact.

We believe that our customers can improve economic efficiency as well as help prevent global warming by using more highly efficient devices in their homes that use clean energy without waste. Therefore, we offer solutions for a convenient and safe lifestyle through electricity.

#### More customers are choosing all-electric homes 250,000 homes in our service area are all-electric

An all-electric home uses electricity for all the home's heating, cooling, kitchen, and hot-water devices, such as IH cooking heater and Eco Cute water heater. Allelectric homes provide an efficient, clean, and safe living environment. More and more customers are choosing all-electric homes because the E-life Plan (lights in three-hour slots) and other fee plans can greatly reduce





lighting and heating costs. Over the past few years in particular, these homes have been highly rated for their friendliness to seniors and the environment, which is increasing the number of customers who have built new homes as well as remodeled existing homes to be all-electric. As of the end of April 2006, more than 250,000 homes in our service area were all-electric.

#### Proposals by "Smile" - our all-women sales team

Our Gifu branch has an all-women sales team named "Smile" that encourages home and kitchen builders to go all-electric. One of the strengths of this team is that all its members are homemakers, who actually use all-electric appliances every day. The team fully leverages this knowledge and experience to propose solutions suiting each of our customer's lifestyle. It also is engaged in a wide range of other activities, including planning for exhibitions at events and demonstrations at various occasions. In this section, we report on the activities of "Team Smile."



A showroom demonstration. It is vital to get people to actually see the products.

#### Safety first Very economical, too

A couple planning to build a new home (residents of Gifu City)

*Wife:* I'm using a combination-type cooking heater now, but I hadn't realized there had been so much progress. It looks like the heating power has improved; I bet this will make cooking more enjoyable. I was relieved to learn how to clean and care for it. I'm thinking about going with an IH cooking heater in our new house.

Husband: I had thought that an all-electric home was expensive, but it's not as much as I expected. I learned that when you take your electricity bills into account, all-electric homes are very economical. Also, since my parents will be living with us, safety is the most important consideration. I'm going to talk to our architect right away about planning a new home that doesn't use any open flames and is also friendly to the environment.

#### At event venues

## Amazed by the heating power; convinced by the ease of cleaning

On this day, the team was to promote the IH cooking heater to customers in a newly opened showroom of a home fixtures manufacturer.

All customers there were actually considering building a new house or remodeling an existing one, and the team had been nervous since morning. Many customers were current users of the IH cooking heater, and a large proportion of their questions dealt with how to clean the top plate. A team member gave a tip that cleanser cream and plastic wrap would get the plate sparkling, and the customers were delighted at the prospect of maintaining a hygienic kitchen. Naturally, the team also pitched the product's economic efficiency.

Incidentally, the demonstration on that day was pasta. The pot full of water came to a boil right away, and before you knew it, the pasta was ready. The customers were amazed at this. One woman commented that the heat was much more powerful than she expected: "I bet you could cook with a wok on that as well." On that day, the team successfully deepened the understanding of all-electric homes among customers.



Members of the Smile team share their knowledge to create proposals that will benefit their customers.

#### **Comments from Team Smile**

Our job is to communicate the benefits of all-electric homes to a wide range of people, from retailers to end-users. Although members of the team have different career histories, they all have two things in common – they are all homemakers, and they can talk about the benefits of all-electric homes from their own experiences. We love being able to help make our customers' lives more comfortable through our advice. When we recommend our products, we always focus on the fact that seeing is believing. We first get them to use the IH cooking heater and experience it for themselves. Our team's motto is "we will discover the real benefits of our products by ourselves."

## 2005 Highlights

#### Highlights of FY 2005 Initiatives 3

Providing satisfaction by helping to make living environments more pleasant



A junior sales representative from a homebuilder also participates in the hands-on learning at the seminar

#### Proposals to homebuilders Persistent effort is vital with sales

Although demonstrations at events are a good opportunity to hear what our customers have to say directly, it is also vital to continually sell our products to home and kitchen builders. On this day, we visited a homebuilder that has a local exhibition site. We told them about a new program that allows customers using the environmentally friendly Eco Cute to receive subsidies from their city governments and other agencies. The homebuilder asked us to help out in an upcoming event, and we decided to propose a project that promotes all-electric homes.

#### Working to make more homes all-electric

The activities of "Team Smile" have expanded to include seminars for junior sales representatives at homebuilders. This is because the team believes that by getting these junior employees to experience all electric, they will in turn increase our customer base.

Our other branches and offices are also engaged in the types of proposal activities highlighted here. We are committed to ensuring customer satisfaction by making people's lives more pleasant while contributing to the environment. All-electric making customers' dreams come true



Shunjiro Furuhama Office manager Legal Dept., Gifu Housing Office Daiwa House Industry Co., Ltd.

Recently, more and more customers have been building all-electric homes, and I sense that interest is getting even higher. Not so long time ago, we had to promote all-electric homes to our customers, but recently our

customers ask us such questions as "Could you explain about the IH in detail?" and "Are all-electric homes really more economical?" I am attending Chubu Electric's seminars because I want to answer those questions appropriately. I really learned a lot from practical lectures given by "Team Smile".

We have also added a Chubu Electric All Electric Plaza in our tour course. When customers are considering building a new home, IH demonstrations and the like turn their vague thoughts of building a home into a concrete image of a comfortable and safe home. It really is vital to experience things first hand.

I hope to continue our collaboration with Chubu Electric Power in helping to enrich our customers' lives through the provision of safe and secure all-electric homes.

We recommend all-electric homes from our customers' perspectives





In my sales area, the number of customers choosing all-electric homes is skyrocketing. This increase has been due to the customer seminars we conduct jointly with Chubu Electric Power and the all-electric lectures by "Team Smile" that has been attended by all our sales staff.

We have learned two things: that customers are very interested in all-electric homes; and how to recommend all-electric homes to such customers. The lectures by "Team Smile" are particularly valuable because they are from the viewpoint of users. They have enabled us to give appropriate advice, including information that our customers want to know and are not yet aware of.

# Management Economy

Management and Economic Performance

> Four Pillars of Management Corporate Governance

Stable Supply and Safety

## Four Pillars of Management

## Four Pillars of Management

- 1. Business Activities Aimed at Satisfying Customers
- 2. Stable and Continuous Provision of Affordable and High-quality Energy Services
- 3. Sustained Growth through Higher Resiliency and Strategic Utilization of Business Resources
- 4. Positive Actions to Fulfill Our Corporate Social Responsibility

As a total energy supplier based in the Chubu region, we are committed to delivering new value grounded in energy to our customers and achieving sustained growth for our entire Group.

Toward this goal, we are accelerating our initiatives to increase our corporate value under the four management pillars stated above.

#### **Management targets**

#### **Electricity sales target**

Additional demand equivalent to 2.4 TWh by the end of fiscal 2007 through promotion of all-electric energy systems and utilization of electricity for air conditioning, cooking, and industrial processes

## Targets for the gas, LNG, and distributed generation businesses

Total sales of 45 billion yen in the gas, LNG, and distributed generation businesses by fiscal 2010

#### **Financial targets**

Achievement of the following targets through Group synergy

Item	Non-consolidated targets	Consolidated targets	Target year
Return on assets (ROA) *1	over 4.5%	over 4.5%	
Ordinary income	over 160 billion yen	over 165 billion yen	Average of three years
Capital investment	less than 170 billion yen	less than 200 billion yen	from FY2004 to FY2006
Free cash flow *2	over 350 billion yen	over 360 billion yen	
Balance of interest-bearing liabilities	less than 3 trillion yen	less than 3.1 trillion yen	At the end of FY2006

\*1: ROA = business profit (ordinary income + interest paid) / term-beginning and -end average total assets

\*2: Free cash flow =operating cash flow - investment cash flow

## **Business Activities Aimed at Satisfying Customers**

## Offering energy services chosen by our customers

As a total energy service supplier, our Group aims to be the choice of our customers, contribute to the development of local communities, and help enrich our customers' lives, by offering a wide range of energy services that meet our customers' demands.

In fiscal 2005, we set a new target: additional demand equivalent to 2.4 TWh by the end of fiscal 2007 through promotion of all-electric energy systems and utilization of electricity for air conditioning, cooking, and industrial processes. We are currently working to reach this goal ahead of schedule by enhancing our services and actively proposing solutions, and quickly, accurately, and sincerely responding to our customers' diverse needs.

#### Enhancing services and actively proposing solutions that meet diverse needs

#### Household sales activities

All-electric houses have many advantages: they are hygienic, safe, comfortable, and economical. We actively work to help make our customers' lives richer and more comfortable through all-electric homes and other electricity solutions.

#### (Look! P10 ~ 12)

Business sales activities As business partners, we offer the energy services best suited to each of our customers, by responding to their specific needs and combining electric power

with gas and distributed energy.

#### Provision of solution services\*1

In coordination with other companies in our Group, we are avidly developing total energy solution service for our diverse clientele, including cost reduction, increase in power supply quality, environmental measures, and energy facility management.

\*1: advice and proposals for problem solving



#### Offering gas, LNG, and distributed energy services

As environmental awareness increases, there is a shift underway in the energy market from heavy oil to natural gas. A market fusing gas and distributed energy systems is also forming, as customers increasingly adopt gas cogeneration systems fueled by natural gas.

In order to meet our customers diverse needs, we are rolling out a variety of energy businesses, including: gas sales harnessing the gas conduits around our power plants; LNG sales using tanker trucks; and distributed-energy services such as installation, operation, and administration of our customers' in-house generation systems. In fiscal 2005, our total sales from these businesses were approximately 25 billion yen.

In July 2006, we established the Energy Division to provide comprehensive services meeting our customers' needs. In the future, we will offer even broader and more sophisticated energy solutions.

#### Four Pillars of Management

#### Actively developing international energy businesses

We have developed overseas energy businesses to effectively harness our accumulated technical capabilities, people, and other management resources and to gain new sources of revenue, while simultaneously contributing to local communities and conservation of the global environment, as well as maintaining and preserving power technologies.

We consider the next five years until fiscal 2010 as our period to develop overseas energy businesses. During this period, we will aggressively develop overseas businesses based on the expertise and alliances we have built during our past efforts, by making our businesses more efficient while fully considering risk management.

## Future directions for business development

We will select business fields and areas, and concentrate our management resources on the best projects, based on our knowledge and performance to date, with a focus on power generation businesses that can ensure long-term, stable revenues, and environment-related businesses that can ensure revenues and help us gain CO2 emission rights.

In our power-genera-

tion business, we will begin in the countries where we already have an established track record – Thailand, Mexico, and Qatar – and roll out a phased expansion of businesses to their neighboring countries. Meanwhile, in our environmental business, we will develop businesses in countries that have ratified the Kyoto Protocol and are actively seeking approval for clean development mechanism (CDM) and joint implementation (JI) businesses\*1.

In our consulting business, we will focus on projects that can ensure revenues, while promising a synergistic ef-



A rice-chaff-fueled power generation facility in Thailand

fect with our domestic and international energy businesses.

We are also committed to enhancing our operational regime. As an example of our initiatives in this area, in February 2006 we opened an overseas office in the Thai capital of Bangkok, with the main goals of investigating and uncovering new business opportunities, and supporting existing projects.

\*1: CDM/JI business is a project to find, research, and launch clean development mechanism joint implementation opportunities with the goal of gaining CO2 emission rights.

#### **Examples of Projects Underway or Completed**

Project				Capacity	Overview
Overseas investment			Thailand Gas-powered thermal IPP project	1,400MW	Joined the project in fiscal 2001. Construction begun in Feb. 2006.
		Power generation	Mexico Gas-powered thermal IPP project	525MW	Joined the project in fiscal 2003 in partnership with Mitsui & Co., Ltd. and others. Test operation underway as of Jun. 2006.
		project	Qatar Power generation/de- salinization projects	1,025MW	Joined the project in fiscal 2004. Partial operation begun in May 2006; full operation planned for 2008.
	seas invest		United States Investment in existing IPP distribution project	-	Joined the project in fiscal 2004 in partnership with ITOCHU Corporation. To date, rights have been gained on three gas-powered thermal power plants.
	ment	Environment-related (CDM/JI) project	Australia Adelaide afforestation project	-	Joined the project in fiscal 2002 in partnership with Mitsubishi Paper Mills Limited and five other companies. Project continues to plant trees and purchase land.
			Thailand Rice-chaff-fueled power generation project	20MW	Began our first biomass power-generation project in fiscal 2003, in Thailand. Opera- tion began in December 2005, in Phichit.
			Asia Environmental fund	-	In fiscal 2003, joined a fund targeting investment in multiple small-scale projects, with a focus on ESCO businesses. Investments include a small-scale hydroelectric power project in India and a cogeneration project in Thailand.
Overseas consulting				-	Consulting business, with a focus on electric power infrastructure in Asian nations, which have been highly praised by the Japan International Cooperation Agency (JICA), the World Bank, and others. To date, the business has generated an annual revenue of about 400 million yen from more than 90 consulting contracts.

## Stable and Continuous Provision of Affordable and High-quality Energy Services

In 2001, we set a target of reducing costs by 20% under levels immediately prior to liberalization by fiscal 2005. We have succeeded in achieving this target through a unified commitment to reducing costs and streamlining management across the board, as well as by increasing efficiency when scrapping and building power-generation facilities.

We will continue to use our ingenuity to reduce costs in our facility design, operation, and procurement, as well as in our business activities. We also continue to plan our facility architecture and makeup over the medium and long term in order to ensure reliable access to energy into the future, including creating the optimum power-source architecture with full consideration for energy security and environmental conservation.





power from the power grid in June 2005.



Our capital investment peaked in fiscal 1993, at 742.4 billion yen. Since then, we succeeded in reducing our capital investment to 124.3 billion yen by fiscal 2005, through measures such as careful selection of investment targets. We continue to work toward our goal of a threeyear capital investment average of no more than 170 billion yen on a non-consolidated basis, and no more than 200 billion yen on a consolidated basis, between fiscal 2004 and 2006.

We are also committed to reducing our operation & maintenance costs and general expenses, and reducing our fuel expenses in order to increase our competitiveness in the power-generation field.



#### **Higher efficiency** in business operation

#### Achieving personnel targets

We were among the first in the industry to begin moving toward a leaner workforce, and by the end of fiscal 2005 we achieved our target of reducing our workforce to approximately 16,600 employees. We have the highest power sales per employee (an indicator of productivity) of any power company in Japan.

We will continue to streamline our business operations and maintain high labor productivity.

#### Trends in power sales per employee MWh/person 10.000 ---



#### Transferring telecommunications line-route facilities and related businesses

In January 2006, we transferred part of our telecommunications line-routing equipment and some related equipment maintenance and other operations, as well as related businesses (core-wire leasing and FTTH) to Group company Chubu Telecommunication Co., Ltd. (CTC), integrating these civilities within a single company, and thereby streamlining the operations of the Group as a whole and effectively utilizing its management resources.

Non-consolidated capital investment

#### Four Pillars of Management

## Initiatives to ensure future secure access to energy

Against a backdrop of industrial activity responding to the gradual recovery of the economy and rising popularity of allelectric homes, we expect a steady rise in the demand for power in the Chubu area.

In order to respond to this demand for power, we have formulated our fiscal 2006 power-supply plan with the following three key targets: (1) Ensure a stable supply; (2) Further streamline to outperform our competitors; and (3) Work actively to protect the global environment

#### **Electric Power Supply Plan for FY2006**

Sales plans

	FY2004 (actual)	FY2005 (actual)	FY2006	FY2007	FY2008	FY2009	FY2010	FY2015	FY'04-FY'15 annual increase rate
Power sales (hundreds of GWh)	1,267 (1,254)	1,306 (1,286)	1,270	1,274	1,285	1,299	1,313	1,388	0.8% (0.9%)
Maximum power (transmission end, tens of MW)	2,443 2,545*1 (2,545*1) [2,624]	2,556 (2,557) [2,634]	2,580 [2,658]	2,600	2,622	2,644	2,666	2,784	0.8% (0.8%)

Figures in parentheses are for levels after compensation for temperature.

Figures in brackets are for levels at the generation end.

\*1: Maximum demand for July

#### Maximum power supply and demand plan (transmission end)

	FY2005 (actual)	FY2006	FY2007	FY2008	FY2009	FY2010	FY2015
Maximum power (tens of MW)	2,556	2,580	2,600	2,622	2,644	2,666	2,784
Supply capability (tens of MW)	2,849	2,890	2,902	2,912	2,907	2,901	3,054
Supply reserve capability (tens of MW)	293	310	302	290	263	235	270
Supply reserve rate (%)	11.5	12.0	11.6	11.1	10.0	8.8	9.7

#### Major power facility plants

(Unit: tens of MW)

		FY2006	FY2007-2010	FY2011-FY2015	From FY2016
	Nuclear power				
Company	Thermal power		Shin-Nagoya No. 8 system:145.8 (2008/4-10)	Joetsu No.1 system:118 (2012/7-12)	Joetsu No.2 system:118
facilities	Hydropower		First Location:0.021 (FY2010)	Second Location:0.036 (FY2011)	
	New Energy (wind power)		Three Locations:6.8 (FY2008)		
Power from				Oma:20.4/138.3(2012/3) Tsuruga:No.3 61.52/153.8(2014/3) Tsuruga:No.4 61.52/153.8(2015/3)	
other companies	Hydropower		Kawakami:0.12 (from FY2008)	Tokuyama:15.3 (FY2014)	
			152.741	276.776	
	Total		Total of FY2006-FY2015 429.517	5	118

## Sustained Growth through Higher Resiliency and Strategic Utilization of Business Resources

The money and capital markets are becoming increasingly selective. In order to satisfy our shareholders and provide quality services to our customers on a steady basis, we must improve our ratings in these markets, and obtain financing from them at a low cost.

In our bid to increase the combined strength of the Group as a whole in a business environment that is increasingly harsh, we have set management targets for FY 2004-2006 on a consolidated as well as non-consolidated basis. To meet these targets and achieve continued growth for the Group as a competitive total energy supplier, we are working to increase our ratings in the money and capital markets and increase our corporate value by strategically focusing and reallocating our management resources into our core energy business.

#### Strengthening our bottom line

## Increasing our earning and growth capabilities

Our efforts to bolster our sales, reduce costs, and streamline our operations have resulted in a rise in our ordinary income at the Group level for the past several years, and our return on assets (ROA) also remains steady. Our free cash flow has also risen steadily for the past several years. Note that although our free cash flow momentarily declined in fiscal year 2005, this was due to special circumstances: the creation of an external reserve of 260 billion yen, in accordance with the enactment of the Law Concerning the Establishment and Management of Reserves for Reprocessing of Spent Fuel at Nuclear Power Plants.





Note: Return on assets (ROA) = business profit (ordinary income + interest paid) / term-beginning and -end average total assets





Note: The cash flow for fiscal year 2005 in green indicates the portion accounted for by our external reserve (260 billion yen) in accordance with a change in the nuclear-power back-end system.

#### Improving our financial position

We are actively working to reduce our interest-bearing debt, which has fallen to about 3,175 billion yen as of the end of fiscal year 2005. Our shareholders' equity ratio has also been over 20% since the end of fiscal year 2002. At the end of fiscal year 2005, it was 28.9%.

Management and Economic Performance

#### Trends in outstanding interest-bearing debt and shareholders' equity ratio (consolidated)



## Strategically re-allocating our management resources

We are committed to achieving sustained growth by strategically re-allocating the free cash flow generated through our management efforts into our key investment fields, such as our core business: energy. We will also create appropriately timed and formulated strategies to improve our financial position and return profits to our customers and shareholders.

#### Four Pillars of Management

#### Group management

## Rolling out and developing Group businesses

We are a total energy supplier, with energy as our core business, supplying electricity, gas, LNG, and distributed energy. We also offer environmental, social, and IT services in order to make our core business more competitive and profitable, and improve our brand value.



## Reinforcement of the Group business structure

We are reorganizing the Group companies to intensify resources and strengthen the management foundation. We intend to accelerate this reorganization to establish a more efficient structure for the Group as a whole.

#### Major cases of business development

Domain	Outline
Environmental and social services	Consultation for home construction Assessment and assurance of housing performance Real estate business Bathhouse operation Employment promotion business Production and sale of artificial zeolite Production and sale of fungus (Pleurotus eryngii)
IT	Services in portable community information provision ("poketchu!) Data center business Electronics authentication services

#### TOPICS 2005

#### "commuf@" optical fiber Internet

In November 2002, we began offering our "commuf@" service in the city of Nagoya. "commuf@" is an FTTH that leverages our optical-fiber cables to provide high-speed Internet connections of up to 100 Mbps.

In January 2006, we transferred our FTTH business to group company Chubu Telecommunication Co., Ltd. (CTC) in order to focus the management resources of our telecommunications business and accelerate their strategic utilization. Our goal is to roll out a new group telecommunications business. As part of this plan, in January 2006 we expanded our service area from Nagoya to include the Aichi-prefecture cities of Ichinomiya, Kasugai, and Nisshin, and the Gifu-prefecture city of Gifu. We plan to successively expand our coverage to include the major cities of the Tokai region.

We are actively expanding this business in order to make our service available to more customers. We aim to achieve a cumulative total of 90,000 subscriptions by the end of fiscal year 2006.

#### **Initiatives to strengthen Group companies**

October 2001	Establishment of the new Chubu Precision Machinery Co., Ltd. through combination of Chubu Keiki Kogyo and the former Chubu Precision Machinery
December 2001	Establishment of the new firm Chubu Cable Network Company Inc. through consolidation of Kasugai Komaki Communication Television, the CC Net Department of C-TECH Corporation, and Tomei Cable Television
October 2002	Establishment of the new firm Chuden Bldg. through combination of the former Chuden Bldg. and Uspac
October 2003	Establishment of the new firm Chuden CTI Co., Ltd. through amalgamation of CTI and Chuden Computer Service Co., Ltd.
October 2003	Reorganization of Chuden Engineering and Sales Service Shizuoka Co., Ltd. and Chuden Engineering and Sales Service Nagano Co., Ltd.
January 2006	Establishment of the new firm Chuden Transportation Service Co., Ltd. through combina- tion of Eiraku Transportation Co., Ltd. and Oigawa Transportation Co., Ltd.
January 2006	Transfer of our telecommunications line-route facilities and FTTH business to Chubu Tele- communication Co., Ltd. (CTC).

## Better supervision of Group management

In fiscal year 2005, in order to encourage steady achievement of our consolidated targets, we established a Group performance evaluation scheme to objectively and quantitatively evaluate levels of attainment of performance targets at these companies, and clearly define management responsibility.

We are also trying to increase the efficacy of management supervision by discussing target attainment measures during the strategic Group conference attended by executives from Chubu Electric Power and the Group companies.

## Positive Actions to Fulfill Our Corporate Social Responsibility

**CSR** Council

### Enhancing our CSR practices

In July 2005, we established a CSR Group in our Management Strategy Division in order to further enhance our CSR initiatives. Then in September 2005, we created a CSR Council consisting of the managers of each of our divisions. The council selects and prioritizes CSR topics

#### **CSR** Council

for management, and tracks and shares the progress of CSR policies in each division.

When implementing CSR, it is vital that we view and improve our actions from an outsider's perspective. We must listen carefully to the feedback we receive from our stakeholders, and periodically identify issues with our initiatives through ratings and other objective evaluations by third-party organizations. The CSR Council's objective is to examine remedies to these issues, and proactively launch new initiatives in order to respond to our stakeholders' medium- to long-term expectations of a high level of excellence.



#### TOPICS 2005

## Executive CSR Seminar raises awareness with top management

In December 2005, we held an Executive CSR Seminar for about 300 of our high-level managers, including management executives and the top management from our Group companies. We invited Toshihiko Goto, chair of the Environmental Auditing Research Group, to serve as lecturer. Mr. Goto's presentation covered the state of CSR in Japan and internationally, and what society demands from companies. Mr. Goto's clear explanations of CSR increased the participants' understanding. Notable comments included "For society, CSR represents what it expects of companies. For companies, it represents society's trust." and "corporate decision making is CSR."



Toshihiko Goto speaks at the Executive CSR Seminar

### Corporate Governance

## Reforming our Management Structure to Strengthen Corporate Governance\*1

#### Reforming our management structure

We identified fiscal year 2005 as the "Year of Management Reform" in order to further streamline our management, with the goal of improving corporate governance. After a general shareholders' meeting in June 2005, we reduced the number of directors on our board and reformed our management structure.

We are committed to further strengthening our corporate governance, making fairness and transparency even more central to our management, with the goal of earning the trust of our stakeholders in our management.

#### Main reforms to management structure

## Decrease in number of directors on corporate board

We have decreased the number of directors on our board in order to improve board review, speed-up management decision making, and enhance the board's supervisory functions The corporate charter was revised to decrease the number of directors from no more than 32 to no more than 20.

#### Introduction of executive-officer system and transfer of authority to division directors and general managers

We have introduced an executive officer system and transferred significant authority to division directors and general managers (executive officers), in order to separate management decisionmaking and supervision from execution, and speed-up business execution.

#### Shorter terms for directors and introduction of director retirement scheme

We have shortened the terms of directors and executive officers to one year and introduced a retirement scheme, in order to clarify directors' management responsibilities and executive officers' executive responsibilities, and build a management structure capable of responding instantly to changes in the management environment.

#### Clarification of procedures for appointing and determining remuneration of directors, auditors, and executive officers

We have clarified that the president will propose candidates for the board of directors after discussion between all representative directors, in order to ensure the fairness and transparency of appointments of directors, auditors, and executive officers. Full-time auditors will also participate in discussions between all representative directors regarding the selection of candidates for auditor, in order to enhance the independence of the board

#### Diagram of our management structure

of auditors. The same procedures will also be followed regarding remuneration of directors and executive officers.

#### Creation of an advisory board

We have created a Chubu Electric Advisory Board. The board, which consists of eight leading figures from different sectors including academia, financial, labor, consumer, and the media, serves as an advisory body to the president, in order to reflect the advice and recommendations of outside experts and opinion leaders on issues related to Chubu Electric Power and its Group companies.

\*1: Corporate Governance: The design of the decision-making system and organization, and creation and operation of a system of checks, in order to ensure the appropriate and efficient management of the corporation



First meeting of the Advisory Board, held in November 2005



<sup>\*</sup>Note: This structure separates specific decision making and supervision from executive management. In order to accomplish this, as a rule the president and vice president do not make executive decisions regarding specific fields or divisions below the division-director or general-manager level; instead, they focus on resolving management issues and supervising the executive actions of executive officers.

## Compliance

## Ensuring Compliance<sup>\*1</sup>

Chubu Electric Power Declaration of Compliance

Without compliance, there cannot be trust. Without trust, there cannot be growth.

http://www.chuden.co.jp/torikumi/compliance/chuden/sengen.html

The establishment of compliance is essential for winning the trust of our customers and local communities. For this reason, in December 2002 we created a Compliance Committee chaired by the president, which works to ensure the compliance of Chubu Electric Power and the Group as a whole.

We have created this CSR Declaration to publish our standards for fair and honest action in compliance with relevant laws and norms, and with a focus on corporate ethics, as our fundamental approach to business operations.

#### Ensuring compliance at Chubu Electric Power

We have created a company-wide compliance regime, and created such basic policies as the Chubu Electric Power Declaration of Compliance and The Eight Action Guidelines of Chubu Electric Power Co., Inc., in order to ensure that each division and facility acts autonomously with the oversight of the Compliance Committee.

The committee's mission is to raise awareness of compliance and ensure that it is practiced. In order to accomplish this mission, it carries out a wide range

> of awareness-raising activities, including distributing collections of compliance case studies, provid

ing case-method training to compliance leaders assigned to each workplace, and providing e-learning to all employees.

Additionally, starting in fiscal year2005, Compliance Chief Managers (CCMs), who are responsible for promoting compliance within their divisions, began circulating their thoughts on compliance to all employees in their divisions.

#### Ensuring compliance in the Chubu Electric Power Group

In April 2003, we created the Chubu Electric Power Group Compliance Council (with 35 member companies). The council's mission is to ensure the compliance of Group companies.

In the past, we have supported the autonomous initiatives of our Group companies, including sending instructors to company training courses. In the future, we will extend and strengthen our support tailored to each company's needs.

\*1: Compliance: Strict observance of all pertinent laws, regulations, in-house rules, and corporate ethical norms.

#### **Compliance Promotion System**



The Eight Action Guidelines of Chubu Electric Power Co., Inc. Becoming a "good corporate citizen" that is highly trusted and has the support of society.

#### **Thorough Compliance**

We comply with the law, CEPCO's rules and corporate ethics. Fair and Sincere Corporate Activities We treat our customers, business partners and local

communities fairly. Proper Information Management and Disclosure

We deal with information fairly, confidentially and accurately, and we disclose information required of CEPCO on time.

Establishing a Sound Corporate Culture

We respect human rights and provide for a sound business culture.

## Maintaining a Good Relationship with the Government and Authorities

We will take no actions that make people doubt our fairness in undertaking our business activities.

**Proper Management and Utilization of Assets** We administer and use CEPCO's assets in a proper fashion.

**Environmental Conservation** We make efforts to minimize the environmental impact of

CEPCO's operations.

Assuring Safety, Hygiene and Security

We strive to maintain a safe and healthy work environment and ensure the security of CEPCO' plants and infrastructure. Environmental Performance

## Stable Supply and Safety

Accomplishing our duty as a public utility to provide a stable supply of electricity requires the systematic construction and operation of not only power stations but also a unified system of transmission lines and substations. We continue our construction, maintenance, and operation of facilities in a steady and efficient manner with the understanding and cooperation of our customers. Safety is what makes these initiatives possible. We are fully committed to providing our customers with safe access to electricity, as well as ensuring the safety of our supply, so that typhoons, earthquakes, and other natural disasters do not cause electricity-related accidents or disasters. We also believe that occupational safety is extremely important, and are committed to preventing accidents and creating an environment where all employees and related personnel can work safely. We recognize that safe operation is only possible when all equipment and facilities are backed up by these safety initiatives. We fulfill our mission of providing a safe supply of electricity, by giving top priority to safety initiatives.

## Ensuring a Stable Supply of Electricity

## Initiatives to optimize the power mix

In order to ensure that our customers continue to have reliable, uninterrupted access to high-quality energy services into the future, we must develop our own power facilities. It is also vital to secure an optimum power mix, thoroughly comparing and contrasting a wide range of selections, including purchasing power from sources developed by other companies and purchasing from the wholesale electric-power market, while considering such aspects as efficiency, energy security, and environmental conservation.

In accordance with this fundamental philosophy, we plan to develop more than 4 GW of electric power over the 10-year period from fiscal 2006 to fiscal 2015, including power from other companies.

## Active commitment to nuclear power

Nuclear power is a superb source of electricity in several respects, including energy security and conservation of the global environment. We are working to take greater advantage of each unit of our Hamaoka Nuclear Power Station, with proper and timely inspections, repairs, and other maintenance. We are also committed to increasing the proportion of our electricity derived from nuclear power by actively utilizing power from other nuclear power stations, and facilitating the development of our own nuclear power.

#### Building flawless power transmission and distribution equipment

We also implement well planned-out measures to reduce the number of blackouts and brownouts due to our power transmission and distribution equipment, while reducing costs through the introduction of new technologies and design streamlining, with consideration for ensuring a stable supply of power, economy, and environmental conservation.

#### World's best supply of power

A quality supply of power is an indispensable aspect of a comfortable life, high levels of production technology, and the developing information society. Thus far, we have supplied high quality electric power, stably and continuously, without voltage or frequency fluctuation by adjusting output to correspond with customer demand, under a system integrating all processes from power generation to distribution to our customers. We have also strived to construct and maintain facilities so as to lessen occurrences of failure and outage due to lightning and other natural disasters. As a result of these efforts, our power supply ranks at the top worldwide.

## Average yearly hours of outage per customer



Source: Figures other than those for our company are from the Federation of Electric Power Companies of Japan. Figures for our company are for FY2004; France for 2001; and UK and USA for 2003.

Note: Average yearly hours of outage per customer for our company in FY2004 was two minutes longer than the previous year due to the impact of typhoons and other natural disasters.

## Safe facility configuration and operation



To make sure that our customers can use our power with complete peace of mind, we are working to achieve a highly disaster-resistant facility configuration for the entire energy supply process culminating in the daily delivery of electricity. We have also established a disaster prevention system to ensure prompt resumption of supply in the event of disaster.

Our service area is at risk of the occurrence of major earthquakes anticipated to strike in the Tokai, Eastern Nankai, and Nankai regions. We are making efforts to reinforce our disaster prevention measures with a focus on earthquakes.

**Disaster-resistant** configuration

#### System networking

Power systems in our service area form a web-like network consisting of the transmission lines leading away from power stations and other transmission lines connecting them in loops. Even if disasters or other emergencies put some transmission lines out of service, power can be swiftly transmitted to customers by other connecting routes.

#### Partnership with other electric power companies

Our power system is connected with those of power companies in adjacent areas. This enables mutual supply support in the event of shortages due to disasters, for example.

#### 24-hour monitoring system

Under a system of round-the-clock monitoring, our Central Load Dispatching Center and Load Dispatching Control Center adjust generated output to correspond with power use by customers, which changes every moment. They also monitor and control the flow of electricity delivered to customers

through transmission lines and substations.

In the event of an emergency, they make a smooth switchover of transmission systems to keep the scope and duration of outages to the minimum.

#### Multiplexing of power facilities

Generally, our transmission lines are composed of at least two cables, and substations are installed with two or more transformers. In this way, our facilities are multiplexed

for immediate supply of power through reliable alternative facilities if the usual ones are out of service due to failures.

#### Seismic measures for power facilities

We implement seismic measures for power facilities with consideration of their distinctive characteristics.

In the case of transmission towers, the burden imposed by typhoons or other high winds is greater than that imposed by earthquakes. The towers are designed with sufficient strength to withstand high winds, and therefore are strong enough to weather seismic tremors as well.

When installing substations, we prepare designs according to the results of in-depth studies of ground strength and the earthquake resistance of component equipment.

For the Hamaoka Nuclear Power Station, we have constructed many thick walls in precise layouts and adopted structures with low centers of gravity and other features. This creates extremely high stability. In addition, the foundation is directly attached to bedrock subject to few tremors.



We ensure proper operation of power facilities through periodic checks

#### Stable Supply and Safety

#### Construction for increased seismic tolerance<sup>\*1</sup> at the Hamaoka Nuclear Power Station

As the operators of the Hamaoka Nuclear Power Station, which is located in the region where the Tokai Earthquake is forecast to strike, we believe that ensuring the peace of mind of the local community is our most important task. Thus, when the national government considered revising its earthquake-tolerance guidelines, it spurred us to carry out a construction project to improve the plant's seismic tolerance, in order to increase the earthquake magnitude that the plant could withstand.

#### Seismic safety of the Hamaoka Nuclear Power Station

The safety of the Hamaoka Nuclear Power Station has been assured even in the case of seismic motion (bedrock tremors) on the order of 600 gals. It was equipped with this tolerance based on the magnitude of the earthquake anticipated to occur in the Tokai region (8.0) and the largest-ever earthquake in the region: the Ansei-Tokai Earthquake, which had a magnitude of 8.4.

#### Perspectives on seismic safety

We have always applied the latest knowledge to ensure the safety of the Hamaoka Nuclear Power Station in the event of earthquakes, and work to improve its reliability. We confirmed the seismic safety of units 1 and 2, which were constructed prior to the establishment of guidelines for earthquake resistance, and that of units 1 - 5 using a seismic motion of 395 gals forecast for the Tokai Earthquake by the Central Disaster Prevention Council in 2001.

#### Outline of construction

Aware of the importance of giving the Hamaoka Nuclear Power Station ample surplus tolerance, we have set target values for earthquake motion with adequate margin and are performing the construction necessary to meet them.

#### [Target values for earthquake motion]

We are outfitting the Hamaoka Nuclear Power Station with a tolerance of about 1,000 gals. We arrived at this figure by building some leeway into the level of earthquake motion (bedrock tremors) in the current standards (600 gals) to allow for short and long cycles, and then adding a margin of about 30% on top of that, in consideration for the earthquake motion forecast for the Tokai Earthquake by the Central Disaster Prevention Council. This is two to three times the estimate for the Tokai Earthquake made by the Central Disaster Prevention Council (395 gals).

#### [Details]

We will assess target earthquake motion for critical facilities for seismic-tolerant design, and perform necessary construction to improve the seismic tolerance. Currently, the following construction is either under way or scheduled.

- Modification of piping supports (unit 4)
- Modification of power-conduit supports (unit 4)
- Modification of rail guide for fuel replacement (unit 4)
- Modification of crane support materials for ceiling of reactor building (unit 4)
- Modification of oil tanks (unit 4)
- Strengthening foundation behind retaining wall (unit 4)
- Strengthening foundation around piping ducts (units 3-5)
- Modification of exhaust stacks (units 3-5)

#### [Construction period]

All construction on units 3-5 is scheduled for completion in the second half of fiscal year 2007. The construction on units 1-2 will be performed in conjunction with the replacement of the reactor-core shroud\*2. Since we expect construction to begin later due to the need for designs for the improvement of outdoor facilities and the like, we have extended the shutdown period of units 1 and 2, originally scheduled to last until March 2008, to March 2011.

Note: If, after deliberation, the national Nuclear Safety Commission revises the earthquake resistance guidelines, and construction beyond what is currently scheduled becomes necessary, we will respond as necessary in accordance with the guidelines.

- \*1: Seismic tolerance: The level of margin in earthquake resistance beyond the forecast earthquake strength
- \*2: Reactor-core shroud: A structure situated so as to enclose the fuel assembly (reactor core) inside the reactor pressure vessel; it functions as a separator for the flow of cooling water in the reactor.

#### Comparison based on seismic motion response spectra



\*Response spectra are graphic indications of the vibration imparted to structures by seismic motion

#### REPORT 2005

#### Maintaining power during heavy snowfall

From Dec. 2005 to Jan. 2006, locations throughout our region saw record-breaking snowfalls. This heavy snow caused damage to our equipment, due to such causes as trees falling under the weight of the snow.

Although most of the damage was concentrated in the northern area of our Nagano branch, we were able to quickly recover from blackouts thanks to support from other offices and Group companies, putting our full effort into removing falling trees, knocking snow off of utility poles, and other measures.

Knocking snow off of utility poles at our liyama office The work was done with painstaking care for safety



## **Disaster Measures**

## Disaster management system for early recovery

#### **Disaster Management System**

We issue three degrees of emergency conditions depending on the situation, and set up an emergency disaster management headquarters at each business site.

When an emergency is declared, predetermined disaster management personnel report to the company regardless of the time or day of the week, to perform their assigned duties.

If the "Tokai Earthquake Watch" or "Tokai Earthquake Warning" is issued, we will issue a company-wide earthquake warning and set up the Earthquake Disaster Management Headquarters.

We will closely communicate with national, local and public organizations, as well as other private organizations, to collaborate in the case of a disaster.

#### Measures for early recovery

Our group owns a helicopter that can be used to gather information, as well as to transport materials, equipment and personnel.

We are also equipped with our own communications network which includes a radio communication systems and fiber optic cables, in addition to a satellite communications network that connects major business sites and transmits information between regional offices and disaster management headquarters.

During blackouts caused by disasters, we transmit electricity immediately to important facilities, including hospitals and emergency shelters.

We are, in addition, promoting seismic measures for power stations, substations, and other buildings of vital importance during disasters so that they can perform their proper function.

#### **Issuance Standard for Emergency**

	Conditions	Issuance Standard	Disaster Management Headquarters	
	Emergency Level 1	A disaster is forecasted or is occurring		
Emergency Level 2		A significant disaster is forecasted or is occurring	Emergency Disaster Management Headguarters	
	Emergency Level 3	A severe disaster is forecasted or is occurring		
	Earthquake Disaster Management	"Tokai Earthquake Watch" or "Tokai Earthquake Warning" is issued	Earthquake Disaster management Headquarters	

#### Conducting disaster drills

Although each employee has an assigned role in case of emergency, we regularly conduct disaster drills under various scenarios so that every employees recognizes his/her roles and acts rapidly and precisely in an emergency.



Fire drill conducted by our own firefighters at the Kawagoe Thermal Power Station

#### Notifying blackout information to customers

## Emergency information on the company website

We try to provide blackout information rapidly through the mass media and other means of communication. We post blackout information emergency notices on our web page when a largescale typhoon or other disaster causes a blackout over a wide area.

#### Electricity Safety Handbook helps people use electricity safely

We have created an Electricity Safety Handbook in order to help our customers use electricity safely and conveniently. The handbook outlines what to do in the case of a power outage, fire, or disaster, ways to use electrical devices safely and efficiently in our day-to-day lives, and more. We are distributing it to our general customers.



Electricity Safety Handbook

Stable Supply and Safety

## Labor Safety

The safety and health of our employees are integral to our company's success. Therefore, we are striving to create more pleasant work environments.

#### Safety and well-being campaign policies

To promote comprehensive safety and well-being, we convene an annual adhoc committee\*1 to consult on and determine the direction of company-wide safety and well-being activities based on opinions from the regional offices and supervisory units.

In accordance with the committee guidelines, the regional offices formulate their own guidelines, and the locations make plans for implementation. Performance of the PDCA cycle on an annual basis is linked to more effective measures.

#### Company-wide safety and well-being campaign policies (FY2006)

#### 1. Safety

- 1) Employees
  - Eradication of traffic accidents at intersections
- 2) Outsourced workers (meter inspection) Eradication of falling and stumbling accidents
- 3) Contracted workers Eradication of accidents due to inobservance of basic rules

#### 2. Well-being

- Provision of better mental care
- Primary prevention (health enhancement and prevention of disease development)
- Secondary prevention (early detection and early treatment of disease)
- Tertiary prevention (promotion of swift reinstatement of workers and prevention of recurrence of disease)

## Group-wide safety and well-being activities

To promote the development of labor welfare throughout the Group, we organized a council on safety and well-being among Group companies and are taking various steps on this front.

Convened about four times a year, the council allows close communication among the Group companies and works to prevent accidents, disease, and injury through publicity and consciousnessraising activities about safety and wellbeing management.

## Steps to achieve zero accidents

We have established in-house rules, guidelines, and schemes related to safety and well-being, and are taking various measures in line with them.

## Driver's license for operation of company vehicle

In 1979, we instated an in-house system requiring employees to receive the prescribed training and obtain a license in order to drive company vehicles. After licensing, employees are given follow-up instruction at regular intervals to rigorously manage driving safety.

#### Safe driving trainers

At each location, we have posted chief safe driving trainers who have been specially educated to provide such training. As the key persons for instruction in traffic safety in the location, they take various measures to prevent accidents.

## Rigorous safety instruction for contractors

To eradicate accidents among contractors, we hold ad-hoc conferences composed of the units in charge of safety and those handling the execution of necessary work. We prepare guidelines to counsel contractors on accident prevention, and furnish them with thorough safety instruction.

#### Frequency rate\*1, Intensity rate\*2

	Freque	ncy rate	Intensi	ty rate
	Chubu Electric Nationwide Power		Chubu Electric Power	Nationwide
FY2004	0.18	1.85	0.004	0.12
FY2005	0.27	1.95 * <sup>3</sup>	0.232	0.12 *3

\*1: Frequency rate: An indicator of the number of deceased and injured missing at least one day of work due to labor accidents per million working hours; it expresses the frequency of accident occurrence.

- \*2: Intensity rate: An indicator of the number of labor days lost due to labor accidents per thousand working hours; it expresses the relative seriousness of accidents.
- \*3: Preliminary figures: Nationwide figures are based on the calendar year.

Figures for Chubu Electric Power for FY2005 increased year-onyear due to a fatal accident.

#### Promoting mental health

In fiscal year 2005, we continued to consider treatment of mental illnesses one of our top priorities. Specifically, we implemented secondary prevention (early detection and treatment) by having our industrial health staff visit workplaces, keeping track of information and responding as necessary, and tertiary prevention that provides support while employees are on mental-health leave and after they return. As a result, we were able to halt the rise in the number of mental-health patients in fiscal year 2005 (it had been continuously rising until then). In fiscal year 2006, we will expand our measures to include primary prevention (prevention of symptoms), while firmly establishing secondary and tertiary prevention.

# Environmental Performance

Chubu Electric Power Group Environmental Declaration

Regime for Protecting the Global Environment

Action Plan

Business Activities and Environmental Impact

**Environmental Accounting** 

Guideline 1: We will use resources effectively

Guideline 2: We will reduce our environmental load

Guideline 3: We will improve our level of environmental management

Guideline 4: We will promote environment-related communication and enhance cooperation with the community on a local and global level

Chubu Electric Environmental Forum

The Uchigatani Forest stands on Chubu Electric property in the city of Gujo, Gifu Prefecture This forest serves as the stage for forestry activities with civic involvement.

## Chubu Electric Power Group Environmental Declaration

Environmental Philosophy

We will conduct ourselves responsibly and in good faith as members of the energy industry, and strive to protect the global environment through local, regional, and international cooperation.

#### **Environmental Vision**

We will promote global environmental conservation and contribute to the development of local communities capable of sustainable growth.

Transforming ourselves into a corporate group that enables each member to share in the environmental culture

> Guideline 2 We will reduce our environmental load.

Guideline 1 We will use resources effectively.

• We will work toward the development and practical application of renewable energy. • We will promote the efficient use of energy.

• We will proactively reduce emissions of CO2 and other greenhouse gases. • We will aim for zero emissions and creation of a society dedicated to recycling. Environmental load

Offering a wide variety of energy-related products and services Society **Electric Power** 

Cooperation

Chubu

Group

Environment

We will promote environment-related communication and enhance cooperation with the community on a local and global level.

• We will improve interactive communication related to the environment and energy. • We will cooperate with people in a wide range of fields outside the conventional framework.

Guideline 3

Natural resources

#### We will improve our level of environmental management.

• We will clearly recognize the environmental impact of our operations and undertake thorough environmentally conscious administration. • We will cultivate personnel capable of independently taking action on environmental concerns.

## Regime for Protecting the Global Environment

#### Environmental Measures Promotion Council

The Council was instituted in April 1990 to actively respond to global environmental problems. It is chaired by the General Manager of the Plant Siting and Environmental Affairs Division, and composed of the company's various division managers. It engages in deliberation and coordination of basic policies, action targets, and specific measures related to preservation of the global environment.

The Council is engaged in activities related to the ongoing improvement of environmental measures through performance of the PDCA cycle. More specifically, it rates the degree of attainment of targets noted in the Action Plan. The Action Plan, which was formulated in April



31st Environmental Measures Promotion Council

#### **PDCA cycle** Do Plan Implementing ties and action plan on policies iding on polici nd action plans the Council nd dep C Action Check Suggestic ovements of acco nnlishment the Counci the Council

2004, contains concrete steps and time limits, and ensures that divisions and departments check each other's approaches to prepare for the next fiscal year.

#### Chubu Electric Power Environmental Forum

The Forum was established in 1993 with the view of raising the level of environmental management. Through it, external experts furnish their opinions on our environmental measures directly to our president.

The Forum is generally held twice a year. The appraisals, guidance, and advice on the nature of our environmental activities are then reflected in our environmental measures.



26th CEP Environmental Forum

#### **Global Environmental Measures Promotion System**

Chubu Electric Power Group Environmental Measures Committee

We instituted the Committee in April 2001 for the purpose of increasing group cohesion and reinforcing environmental measures among the members of the Group. Besides providing a venue for sharing information and opinions on environmental problems, the Committee promotes environmental measures by conducting environmental awareness tours and holding theme-specific study groups.



10th CEP Group Environmental Measures Committee



## Action Plan Guideline 1-2

Guideline		Long-Term Goals <up 2013="" fy="" to=""> Transforming into a Corporation that</up>	Mid-Term Goals <up 2008="" fy="" to=""> Promoting an Environmental Culture</up>
Action Objectives	Particulars	Promotes Environmentalism	in Chubu Electric Power
We will use resources effectively.			
Promoting Implementation and Development of Renewable Energy		<ul> <li>Promoting Implementation and Development of Renewable Energy#1         <pre>Ensuring the achievement of provisions in the Law on Special Measures for the Utilization         of New Energy etc. (RPS Law)         target for introduction: 1,780 GWh by FY2010         <pre></pre></pre></li></ul>	
Efficient Use of Energy	Promoting Nuclear Power Generation* <sup>1</sup>	Maximizing the Safe Usage of Nuclear Power Generation Facilities (85% utilization rate) and Promoting Safe Nuclear Fuel Recycling ◆ Implementing a plutonium thermal system (by 2010)	
	Improving Thermal Efficiency of Thermal Power Plants	Achieving Japan's Highest Level of Efficiency through Continuous Improvement (overall thermal efficiency of at least 41.9%) ◆ Reducing electricity usage inside our power station, Setting up world-class facilities	
	Reducing Transmission and Distribution Loss in Electricity	★ Maintaining a Power Transmission/Distribution Loss Rate of Less than 5%	
We will reduce our environmental load.			
Proactive Reduction of Emissions of CO2 and Other Greenhouse Gas	Reducing CO2 Emissions*2	Reducing the Base Unit by 20% by FY2010 $^{\#2}$ (compared with FY1990)	
	Improving SF6 Gas Recovery Rate	★ Maintaining a High Recovery Rate (over 99% at dismantlement, over 97% at inspection)	
Aiming for Zero Emissions*3 and a Sustainable Society		Promoting activities aiming for Zero Emissions	Reducing External Landfill Waste by Decreasing Waste, and Increasing Recycling and Reuse
Promotion of Environmental Conservation Measures at Power Stations	Reducing SOx Emissions* <sup>2</sup>	$\star$ Maintaining by far the best standard in the world	
	Reducing NOx Emissions* <sup>2</sup>	$\star$ Maintaining by far the best standard in the world	
	Reducing the Public's Effective Radiation Exposure	★ Maintaining a Level Less than 0.001 millisievert/year	
Thorough Management of Chemical Substances	Promoting PCB Treatment	Treatment All Devices Containing PCB	Promoting Comprehensive Treatment of Pole-Mounted Transformers Containing Low Concentrations of PCB
Expansion of Activities that Take into Account Nature	Promoting Nature Conservation Activities	Deploying Nature Conservation Activities Related to Our Domestic and International Businesses ◆ Planting trees at deserted coal mine	Actively Promoting Nature Conservation Activities around Our Business Territory ◆ Conserving Eco Park, forests owned by Chubu Electric Power Co., Inc.
	Promoting Tree Planting	★ Giving Away 16,000 Saplings per Yea	r
*1: Facility utilization rate varies every year depending on whether or not periodical inspection is held. In *3: Reducing volume of waste sent to external landfills (including land filling after intermediate pro-			

\*1: Facility utilization rate varies every year depending on whether or not periodical inspection is held. In order to eliminate this variance, the rate is calculated over a long period of time (averaged over 5 years). \*2: CO2 emission base unit is calculated per electricity consumed, while SOx and NOx emission base units are calculated per electricity generated.

<sup>\*3:</sup> Reducing volume of waste sent to external landfills (including land filling after intermediate processing), including waste to landfill by contractors (waste generated due to work ordered by us) to less than 1% of volume of industrial waste and by-products.
\*4: The 3 R's of waste: Reduce, Reuse, and Recycle
Management and Economic Performance

Social Performance

Self-evaluation Level 5:	Level 4:	Level 3:	Level 2: goal not yet	Level 1: need for	★: Maintenance/Manageme	ent Goal:
long-term goal	medium-term goal	goal for the fiscal yea		improvement	♦: Examples of Actual Appr	roaches
Results for FY 2	2005		Self evaluation	Future Initiatives		See page
other sources (wind, solar, biomass, Created plan to devel	O GWh through increased pu , waste, small-hydroelectric: c op in-house wind power plar peration of wind power plant	developed in-house and p nt		business use, small-hydroelectric ge economic efficiency and a stable sup	I introduce wind-power generators for nerators, and the like, while achieving	P38
Power Station No. 1 a	ate of 54.9% due to long-te and No. 2 units (FY2005: 63. lear power station units in Fy	1%)	ka Nuclear	Further increasing the utilization rate while giving top priority to safety Promoting recycling of nuclear fuel, i	e of nuclear power generation facilities, n line with Japanese national policy	P39
due to factors such as	rate plants efficiently, gross t s increased electricity demanc 9% for all 10 power compan	I during the winter mont		tion energy use	nt power stations, and reducing in-sta- bya No. 8 system (by FY2008) and Joetsu	P41
Reduced to 4.66% th for all 10 power comp	nrough efficient operation of panies in FY2004)	power distribution facili	ties (5.2%	Continuously maintaining high stand	ards	P41
factors such as the lor No. 2 units, and reduc	v only 2.4% from FY 1990 le ng-term shutdown of Hamaol ed hydroelectric power gener of 18% Reduction of Base U	ka Nuclear Power Station ration caused by the wate	No. 1 and r shortage	LNG thermal generator	hrough development of high-efficiency tion, including development of in-house to mechanisms	P42
	ismantlement and 99.2% at improved management tech		duction of	Continuously maintaining high stand	ards	P44
tons	dfill volume by 1,000 tons fro I ash through Circulash, Lanc		r to 8,000	Further promote 3 R's <sup>*4</sup> to reduce e nomic efficiency Expanding sales channels for Circulas	external landfill, while considering eco- h	P45
0.04 g/kWh for all po 0.06 g/kWh for therm (0.7-3.9 g/kWh in We		0.2 g/kWh in Japan in FY	(2004)	Continuously maintaining high stand	ards	P47
0.06 g/kWh for all po 0.09 g/kWh thermal p (0.6-2.0 g/kWh in We		0.3 g/kWh in Japan in FY	(2004)	, , ,		147
terials	ieverts/year through appropria naoka Nuclear Power Station)	-	active ma-	Continuous and rigorous control		P47
low levels of PCBs Started construction	e to problems with equipmer of facilities to treat pole-mo ans for treatment of PCB equi	ounted transformer conta	ainers and		with low levels of PCBs, construction of ed transformer containers and parts, and rels of PCBs	P48
nique to dismantle ste Started full-scale oper	rees cleared during construct eel towers. ration of landscape simulation tors and gave hands-on learn	ns	nt of tech-		tups that take into account nature and forest-conservation activities, with focus	P50 P57
Gave away 18,700 sa	plings (cumulative total of 28	38,600 since 1985)	٩	Continuously supporting developmer	nt of greenery-rich communities	P5C

#1: Change of target – promotion of implementation and development of renewable sources of energy: clarified target values #2: Change of target – Reduction of CO2 emissions: aiming at achieving long-term target only, since medium-term target (2005) has passed.

# Action Plan Guideline 3-4

	Guideline Action Objectives	Particulars	Long-Term Goals <up 2013="" fy="" to=""> Transforming into a Corporation that Promotes Environmentalism</up>	Mid-Term Goals <up 2008="" fy="" to=""> Promoting an Environmental Culture in Chubu Electric Power</up>
l	We will improve our	level of environme	ental management.	
	Undertaking Thorough Environmental Management by Recognizing the Environmental Impact of Our Operations	Thorough Environmental Management	<ul> <li>Promoting Environmental Management System (EMS) among Chubu Electric Power Group Corporations</li> <li>Utilizing EMS among Chubu Electric Power Group Corporations</li> </ul>	<ul> <li>Achieving a 100% EMS Implementation Rate*1 in the Chubu Electric Power Group</li> <li>Expanding group-wide environmental management activities</li> <li>Implementing more effective and efficient EMS</li> <li>Establishing an in-house environmental accounting system and environmental indicators that contribute to environmental management</li> </ul>
		Promoting Green Procurement	<ul> <li>Promoting Environmentally Friendly Products in Society through Green Procurement Cooperation</li> <li>Collaborating with other corporations to establish common indices</li> </ul>	<ul> <li>Promoting Green Procurement</li> <li>Achieving a 100% green procurement rate for office supplies</li> <li>Establishing environmental evaluation standards for materials and equipment</li> <li>Promoting green procurement among Group corporations</li> </ul>
	Cultivation of Personn Independently Taking Environmental Concer	Action on	<ul> <li>Cultivating Personnel Capable of Independently Taking Action on Environmental Concerns within the Local Community</li> <li>Training "Environmental Counselors" to act as leaders that actively pursue environmental activities at home and in the community</li> <li>Establishing a Forestry Volunteer Activity System</li> </ul>	<ul> <li>Promoting an Environmentally Conscious Business and Lifestyle</li> <li>Promoting environmentally conscious business activities and training volunteer leaders</li> <li>Improving environmental education at Group corpora- tions</li> <li>Promoting environmentally-friendly lifestyles among em- ployees</li> </ul>
	We will promote env	ironment-related (	communication and enhance cooperation w	vith the community on a local and global level.
	Improving Interactive on Environment and		Forging a Bond of Trust to Foster Unity with Society ◆ Cooperating with communities to address society's needs	<ul> <li>Improving Open, Interactive Communication</li> <li>Promoting active information disclosure, including by Group corporations</li> <li>Modifying the environmental report to also include social issues</li> <li>Holding a wide range of meetings to exchange opinions, including "Stakeholder Meetings"</li> <li>Giving tours of our workplace and facilities</li> </ul>
	Cooperating with People in a Diversity of Fields outside the Conventional Framework		<ul> <li>Working with the Local Community to Create Ecological Towns</li> <li>Cooperating with riverside areas through forest conservation activities</li> <li>Conducting consulting projects by utilizing our technology and expertise, and cooperating in Eco Town Projects</li> <li>Setting up environmental seminars for citizens</li> </ul>	<ul> <li>Conducting Activities with Diverse Groups of People through New Collaborative Organizations</li> <li>Establishing new collaborative organizations and carrying out forest conservation activities in cooperation with NPOs and other groups</li> <li>Improving children's environmental education</li> <li>Actively promoting an ecological lifestyle including efficient energy use</li> <li>Actively promote Chubu Electric Group Power technology through consulting business</li> </ul>
			Bringing Together the Expertise of the Chubu Electric Power Group to Pursue Global Environmental Conser- vation Activities around the World Initiating international projects related to global environ- mental conservation	<ul> <li>Contributing to Increasing Environmental Conservation in Other Countries Using Chubu Electric Power Group Technology</li> <li>Executing projects aimed at CO2 reduction in developing nations (CDM)</li> <li>Supporting methane gas recovery and use in power generation</li> <li>Supporting technological development of biomass-based power generation</li> </ul>

\*1: Certification/registration and self-declaration based on ISO14001 for Chubu Electric Power Co., Inc. Group corporations include environmental Activity Evaluation Program.

Self-evaluation Level 5: attainment of long-term goal Level 4: attainment of medium-term goal Level 3: attainment of goal for the fiscal year Level 3: attainment of goal for the fiscal year Level 3:	t Level 1: need for improvement	
Results for FY 2005 Self evaluat	" Future Initiatives	See page
Applied Redesigned EMS to all branches, and achieved 97% EMS introduction rate Five of our Group corporations (36) have newly created environmental policies (total 33 companies), and five have designed EMS (total 14 companies; introduction rate 39%) Created ECONP as Group-wide environmental logo	Creating environmental guidelines and action targets for all Group companies Striving to improve EMS introduction rate among Group companies Striving to establish environmental assessment methods and environmental indi- cators that contribute to environmental management	P30 P31 P51
Achieved 94% green-procurement ratio for office supplies Began environmental evaluation for equipment and materials, and published green procurement guideline	Further increasing awareness of green purchasing for office supplies Building environmental assessment database for equipment and materials Examining measures to improve green-procurement ratio of Group corporations	P52
Held Executive CSR Seminar for managers in the Chubu Electric Group Cumulative total of 1,920 have experience as environmental trainers, and 97% have taken e-learning courses Implemented Chubu Eco Point Program in order to encourage employee volunteering Distributed environmental learning materials to Group companies and held workshops	Examining ways to cultivate environmental activities in homes and communities, in partnership with consumers' cooperatives and others Expanding Chubu Eco Point Program Encouraging Group corporations to provide environmental education to their employees	P21 P53
Established CSR regime and prepared to publish CSR Report Held "backyard tours" to gain understanding through observation of business activities Helped run Wonder Circus – Electric Power Pavilion at Expo 2005 Aichi Japan as a member of the Federation of Electric Power Companies of Japan (3,740,000 visitors to venue) Held Family Eco Map Contest	Holding repeated stakeholder dialogues and backyard tours Independently organizing Talk Sessions in the five prefectures of the Chubu re- gion Continuously enhancing our Website content	P8 P21 P56 P75
Carried out forest program with civic involvement called "Invitation to the Forest" Provided participants in Children's World Summit for the Environment with opportuni- ties to experience Japan's culture and nature Taught 687 traveling classrooms, and gave 240 tours of workplaces and facilities Popularized Eco Cute (contracts for approx. 39,000 units; cumulative total approx. 94,000) Gave Backyard Tours and held Eco-Talk Session Group companies promoted environmental and energy conservation through ESCO project	Repeatedly implementing "Invitation to the Forest" civic-involvement program Developing Chuden Eco Partnership environmental event in partnership with civic organizations Continuously implem-enting programs in partnership with NPOs (such as gifts of tree-planting vouchers on anniversaries) Frequently holding traveling classroom programs and tours of workplaces and facilities Constantly promoting Eco Cute for efficient energy use Continuously supporting activities of Environmental Partnership Organizing Club Continuously promoting environmental and energy conservation measures through ESCO project	P8 P56 P68
Started operation of rice-hull power plant in Thailand (20,000 kW) Contributed to global efforts to combat global warming through the World Bank's Prototype Carbon Fund (PCF) and the Japan Greenhouse Gas Reduction Fund (JGRF) Carried out environmental forestation in coal-mining region of Australia and elsewhere Supported Children's World Summit for the Environment, organized by United Nations Environmental Program (UNEP)	Registering Thai power generation from rice hulls project with UN CDM Execu- tive Board Continuously funding PCF and JGRF, and contributing to global efforts to pre- vent global warming through projects to reduce greenhouse gas emissions in developing countries Continuously carrying out environmental forestation in coal-mining region of Australia and elsewhere	P8 P59

Social Performance

# Business Activities and Environmental Impact



# **Environmental Accounting**

We are pursuing expanded environmental accounting in order to increase understanding of our position on and actual activities for environmental preservation, as well as to achieve both higher levels of management efficiency and preservation of the environment.

**Environmental preservation costs** 

ronmental preservation investment and

Over the period in guestion, our envi-

expenses amounted to 18.7 and 163.3 billion yen, respectively. These amounts represented 15.1 % and 9.4 % of our capital investment and total operating expenses, respectively.

#### FY2005 Tabulation

#### Premises applied in tabulation

Tabulations were made by referring to "Environmental Accounting 2002" published by the Ministry of the Environment, and incorporated our views on categorization and calculation criteria. **Period covered:** April 1, 2005 - March 31, 2006 **Scope of tabulation:** All corporate locations

<u> </u>		Investme	ent (100 millio	on of yen)	Expenses (100 million of yen)			
Category	Main Items	FY04	FY05	Change over FY 04	FY04	FY05	Change over FY 04	
Global environmental preservation	Global warming prevention, and Ozone layer conservation	4	7	3	87	99	12	
Regional environmental preservation	Air pollution prevention, Water pollution prevention, etc.	8	22	14	674	629	- 45	
Resource recycling	Resource conservation, Industrial waste measures, and Radioactive ma- terial measures	27	27	0	207	217	10	
Purchase of low environmental impact products, etc.	Electric and low-pollution vehicles, etc.	1	3	2	2	2	0	
Management programs	Personnel costs related to implementation of environmental conserva- tion measures. Costs for obtaining and maintaining ISO 14001, etc.	1	1	0	24	20	- 4	
Research and development	Environment-related research and development	0	0	0	69	67	- 2	
Social programs	International cooperation, Landscape protection, Greening, Nature conservation, etc.	163	128	- 35	603	589	- 14	
Environmental damage countermeasures	Pollution impact levy under the pollution-related health damage compensation system	0	0	0	9	9	0	
Total		204	187	- 17	1,676	1,633	- 43	
Percentage of total capital investment	Percentage of total capital investment		15.1%	- 0.8%	-	-	-	
Percentage of total electric utility business expe	Percentage of total electric utility business expenses		-		9.8%	9.4%	- 0.4%	

\*: Totals may not agree because figures have been rounded down to the nearest 100 million yen.

#### **Basis for Calculation**

Investment and expenses for the prevention, reduction or avoidance of environmental burden; environmental impact reversal; and damage restoration are taken into account. • Investment is the amount of capital investment used for environmental protection.

• Costs associated with investment such as depreciation, equipment leasing, and maintenance and operating costs are calculated by taking into account factors such as useful life for each type of facility or equipment.

#### Environmental preservation impact

Our Basic Unit of CO2 emissions increased by 0.003 kg-CO2/kWh, while the volume of waste sent to external landfills decreased by 1000 ton, on a year-on-year basis.

Category		Items FY04		FY05
		Basic Unit of CO2 Emissions	0.450kg-CO2/kWh	0.453kg-CO2/kWh
Global Environmental Preservation	Global Warming Prevention	Power purchases from renewable energy sources	376.96GWh	470.02GkWh
		SF6 recovery rate (at inspection time)	99.3%	99.2%
Regional	Air Pollution Prevention	SOx emission (for all power stations)	0.03g/kWh	0.04g/kWh
Environmental Preservation	Air Foliation Frevention	NOx emission (for all power stations)	0.06g/kWh	0.06g/kWh
Resource Recycling	Industrial Waste Measures	Land Fill Waste at Outside Locations	9,000t	8,000t
, ,	General Waste Measures	Waste paper recovery rate	92.2%	91.7%
Social Programs	Landscape Protection	Total length of power distribution cables laid underground	58km	40km
	Greening	Green area at power stations	2.447 million m <sup>2</sup>	2.446 million m <sup>2</sup>

These figures indicate the levels of reduction and avoidance of the environmental burden associated with our business operations as well as environmental improvements made by Chubu Electric, and are limited to those related to environmental conservation costs.

#### Economic effects associated with environmental preservation measures

Category		Items	FY04	FY05	Change over FY 04
Global Environmental Conservation	Global Warming Prevention	Fuel cost reduction due to change in gross thermal efficiency of thermal power stations, etc.	-19	-17	2
Resource Recycling	Industrial Waste Measures	Sales income from recycled gypsum, coal ash, etc., and reduced expenses due to reuse of transformers and other equipment	66	80	14

These figures are changes in gains on recycling of gypsum and other waste and expenses related to environmental conservation.

(100 million of ven)

**Environmental Performance** 

## Guideline 1 We will use resources effectively.

Since the power industry consumes a great deal of natural resources, including fossil fuels, we view the effective use of resources as one of the critical aspects of our environmental conservation policy. We are working hard to promote the implementation and development of renewable energy, as well as the efficient utilization of resources.

# Promoting Development and Utilization of Renewable Energy\*1

Despite shortcomings such as a low energy density and unstable output, renewable energy helps to reduce consumption of fossil fuels and alleviate environmental load.

We are working to implement renewable energy in accordance with the Special Law on the Renewable Portfolio Standard (RPS Law)\* 2, which went into effect in April 2003.

- \*1: Energy sources that are not depleted through consumption, such as sunlight, wind, biomass, and water. While the amount of energy attainable in a set area is limited, we can use it almost indefinitely.
- \*2: This regulation requires electric power suppliers to utilize a certain percentage of renewable power sources, such as solar, wind, biomass, or small- to medium-scale hydroelectric (water channel type, less than 1000 kW) in their power generation operations.

## Wind power generation

As we move toward the development and introduction of wind-power generation for business use, we are surveying wind conditions at several sites, as well as the impact on the surrounding environment. We are aiming to bring three of these sites (68 MW) online by fiscal year 2008. Additionally, in February 2006, Group company C-Tech Corporation began commercial operation of the Wind Park Misato (16 MW) in the city of Tsu, in Mie Prefecture.

#### Installation of photovoltaic, wind power, and fuel-cell generation systems (as of end-FY 2005)

	Locations	Output (kW)
Photovoltaic	49	550
Wind power	3	267
Fuel cell	1	105

#### Hydropower generation

We are committed to making effective use of our water resources. We have 182 hydropower stations, which generate 5,220 MW of electricity. We also continue to develop new and efficient hydropower sources, using maintenance discharges and unused drop-offs.

# Biomass-fuel combustion testing

In fiscal years 2006 and 2007, we plan to manufacture biomass fuel from sludge generated from sewage treatment, and perform test combustion in a thermal power station, jointly with the prefecture of Aichi. It is expected that the spread of sewerage will increase the generation of sludge, and this project's aim is to promote its effective utilization.

The Kinuura East Purification Center in Aichi prefecture, carbonizes sludge and manufactures it into biomass fuel. We are currently testing factors such as whether the fuel will affect the generation boiler when combusted at our nearby Hekinan Thermal Power Station.

# Purchase of renewable energy

We are taking a variety of approaches to promote renewable energy. Besides

installing photovoltaic and other renewable energy systems in our locations, we purchase surplus power generated by photovoltaic, wind power, and other such systems.

#### Amount of surplus power purchased from photovoltaic, wind power, and biomass generation systems



# Fuel cell proving tests at Expo 2005 Aichi Japan

At Expo 2005 Aichi Japan, we conducted demonstration tests for molten carbonate fuel cells (MCFCs) and solidoxide fuel cells (SOFCs).

We participated in the Project for Establishing New Energy Visions at the Local Level (Large-Scale Field Test of Residential Fuel Cell System and Microgrid Demonstration Test at Aichi Expo 2005) carried out by the New Energy and Industrial Technology Development Organization (NEDO). We installed a 250 kWclass MCFC cogeneration system fueled by methane gas produced through the fermentation of food waste collected from restaurants at the expo venues, and supplied part of the electricity and energy for air conditioning to the Nagakute Nippon-kan and NEDO Pavilion.

These demonstration tests are being continued in Chubu Rinku City, which is adjacent to the Central Japan International Airport.

At the Wonder Circus – Electric Power Pavilion, we also installed a 30 kW SOFC cogeneration system, which supplied part of the pavilion's electricity and airconditioning energy. Despite the fact that the expo was an out-of-the-ordinary event, we succeeded in continuously and stably operating the system for nearly 4,000 hours.



MCFC Cogeneration System

#### Chubu Green Power Fund

In October 2000, we instituted the Chubu Green Power Fund. Under the Fund, we collect monthly 500-yen donations from customers who support power generation using renewable energy, and use these funds to promote its diffusion. As of the end of fiscal year 2005, we had received 426 donations from 490 customers. To assure transparency in receiving donations, the Fund is being managed by the Chubu Industrial Advancement Center.

We are publicizing the Fund over our website, and match the customer donations with contributions of our own.

#### The Chubu Green Power Fund Mechanism



## Efficient Utilization of Energy

We are proactively taking measures to ensure more efficient utilization of energy, by increasing the capacity utilization rate of nuclear power stations, recycling nuclear fuel, and improving the thermal efficiency of thermal power stations.

### Increase in the capacity utilization rate of nuclear power stations

We are striving to make efficient use of nuclear power station facilities while taking every safety precaution.

At the Hamaoka Nuclear Power Station, the capacity utilization rate for units 3, 4, and 5 was 87.2 % thanks to the units' smooth operation. However, the overall average capacity utilization rate was only 54.9 % over the last five years (63.1 % in fiscal 2005), mainly due to the long-term shutdown of units 1 and 2 to increase their seismic tolerance.

As our customers expect, safety will continue to be our top priority as we operate and run the Hamaoka Nuclear Power Station.



## Recycling of nuclear fuel

In Japan, nuclear fuel recycling is at the basis of the national policy on nuclear power.

Reprocessing spent fuel for efficient use of uranium resources can pave the way for long-term assurance of an energy supply through nuclear power. For Japan, with its scarcity of domestic energy resources, the recycling of nuclear fuel holds great value for energy supply stability. In addition, spent fuel reprocessing also reduces the amount of nuclear waste for disposal, because it eliminates the need for disposal of the entire volume of spent fuel, and extracts waste with a high level of radioactivity for separate disposal.

Guideline 1 We will use resources effectively.

### We are implementing a pluthermal program at our Hamaoka Nuclear Power Station, while giving safety top priority

#### Acting with the understanding of the local community

We plan to begin a pluthermal\*1 program at Hamaoka Nuclear Power Station Unit No.4 in fiscal year 2010.

In March 2006, we applied to the national government for a permit to modify our reactor core. This is a key procedure for a pluthermal program. Before submitting this application, our employees visited and spoke with every household in the four local cities in the station's area between September and December 2005.

The information provided by the employees included the status of the power station, and



A public discussion forum held in November 2005



Our employees visited and spoke with every household in the station's area

the importance of the pluthermal program. We also sought out a broad range of opinion, including holding a total of 90 local orientation meetings and public discussion forums. We will continue to proceed with our pluthermal program with the understanding of the local community.

#### The need for pluthermal

Japan is an energy-poor country, and at the same time a major consumer of energy. In order for Japan to ensure a stable source of energy into the future, while responding to such global environmental issues as reducing CO2 emissions, it is an absolute necessity to establish a nuclear fuel cycle and carry out a pluthermal program, in addition to the promotion of nuclear power generation. Pursuing a nuclear fuel cycle including pluthermal is Japan's basic policy on use of nuclear power.

#### Safety of pluthermal

The properties of the mixed oxide (MOX) fuel used in pluthermal programs are well understood. This fuel can be used safely in existing power stations. Even if up to about one third MOX fuel is used,

it is possible to ensure essentially the same safety design and evaluations as with current uranium fuel.

\*1: This term refers to mixing plutonium recovered through the reprocessing of spent fuel from nuclear power stations with uranium, and using it again as mixed-oxide (MOX) fuel in a light-water thermal reactor (this is the type of our existing reactors).

When we perform our periodic inspection of Hamaoka Nuclear Power Station Unit No.4 in fiscal year 2010, we plan to use MOX fuel as part of the new fuel. We plan to gradually increase the ratio, until the MOX fuel accounts for up to about one third of the total fuel.



\*2: Waste liquid with a high level of radioactivity left after reprocessing spent fuel and extracting uranium and plutonium, which is later solidified with glass.

#### **Recycling of nuclear fuel**

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### Increase in the thermal efficiency\*1 of thermal power station

An increase in the thermal efficiency of thermal power stations could result in a reduction in the use of fuel and curtailment of CO<sub>2</sub> emissions.

We are striving for higher thermal efficiency by installing high-efficiency combined-cycle generation systems and effectively operating high-efficiency thermal power stations.

The gross thermal efficiency of our thermal power stations was ranked first nationwide every year from fiscal year1997-2001, and continues to stay at a high level.

In fiscal year 2005, our total thermal efficiency came to 41.36 %.

\*1: Out of the thermal energy of the fuel consumed, the percentage of energy capable of transmission as electrical power; an indicator of the efficiency of energy utilization at a thermal power station.

#### Comparison of thermal efficiency of power generation facilitates in major countries (based on lower heating value) (2002)



Note: Outside Japan, it is common to use the lower heating value (LHV) standard. The Japanese data (higher heating value standard) was thus converted to LHV. LHV is about 5-10% higher than HHV.

Sources: Updated Comparison of Power Efficiency on Grid Level (2005) (ECOFYS); data from the Federation of Electric Power Companies of Japan

# Adoption of leading-edge combined-cycle power generation

In July 2005, we started the construction of the Shin-Nagoya Thermal Power Station No. 8 System fired with LNG, a leading-edge, high-efficiency facility. The system is scheduled to commence operation in fiscal year 2008. The system has a capacity of 1.458 GW, and is located in the city of Nagoya, Aichi Prefecture. In the interest of lower fuel consumption and curtailment of CO2 emissions, we adopted a combined cycle power generation system based on a gas turbine in the class of 1,500 °C with a generation efficiency of about 51 %.

In fiscal year 2012, we also plan to start the operation of the Joetsu Thermal Power Station No. 1 System in the city of Joetusu, Niigata Prefecture, as another LNG-fired high-efficiency facility with a capacity of 1.18 GW.



Conceptual drawing of the Shin-Nagoya Thermal Power Station No. 8 System upon completion (No. 8 System in the foreground and No. 7 System in the background)

# Reduction of transmission and distribution loss rates

To reduce such loss, we have been taking various steps, including an increase in transmission voltage and a shift to low-loss transformers. Since fiscal year 1993, our loss rate has been very low (less than 5 %).

In fiscal year 2005, our transmission and distribution loss rate amounted to 4.66 %, the best of the ten Japanese electric power companies.

# Comparison of transmission and distribution loss rates



Source: Statistics on Foreign Electric Power Industry, 2005 Ed., Japan Electric Power Information Center, Inc. Chubu Electric Power: FY 2005; Japan: FY 2004; Others: calendar 2003

# Trend of thermal efficiency of power generation facilities, and total thermal efficiency (higher heating value standard)



## Guideline 2 We will reduce our environmental load.

One of the most important challenges facing management is the fight against global warming. We have been actively pursuing a reduction in CO<sub>2</sub> emissions (per 1kWh of electric power consumed) by efficiently operating our power generation facilities. We are also striving to completely eliminate industrial wastes byproducts from our business operations, with the goal of creating sustainable society.

# Preventing Global Warming

### Reduction of CO<sub>2</sub> emissions

Reduction of CO2 emissions resulting from power use requires efforts both from the company supplying the power and from consumers who must use it efficiently. We consider it our duty to reduce the level of CO2 emissions per kilowatt-hour of power supplied to our customer in order to prevent global warming.

The Federation of Electric Power Companies of Japan has formulated an "Environmental Action Plan" for the Japanese electric utility industry, and in line with this, we have posted the target of reducing emissions by at least 20 % relative to fiscal year 1990 by fiscal year 2010. To attain this target, we are implementing a variety of measures.

# Reducing the CO<sub>2</sub> emission base unit

CO2 emissions from the use of electricity are calculated by multiplying the volume of CO2 emitted per kWh (CO2 emission base unit) by the amount of electricity used by customers.

The amount of electricity used is affected by factors such as the weather and our customers' usage. Our goal, therefore, is to reduce what we can control through our own efforts: the emissions of CO<sub>2</sub> per base unit.

In fiscal year 2005, we were only able to reduce CO<sub>2</sub> emissions per base unit by 2.4% from fiscal year 1990 levels, due to

## Chubu Electric Power voluntary approaches

- Increase in the capacity factor of nuclear power stations units
- Increase in thermal efficiency at thermal power stations
- Reduction of T/D loss
  Development and extensive use of alternative energy
- Incorporation of renewable energy
- Extensive use of the Kyoto Mechanisms
  Curtailment of non-CO2 GHG emissions

the long-term shutdown of Hamaoka Nuclear Power Station Units No.1 and No.2, and reduced hydropower generation resulting from low water levels. Our CO2 emission base unit was therefore 0.453 kg-CO2/kWh. Our total CO2 emissions were 59,110,000 tons.

We will continue to work actively to achieve our targets. We will improve the

#### CO2 emissions due to power consumption

Measures to prevent global warming

#### Measures to promote customer cooperation

 Purchase of power from renewable energy systems
 Support of efficient energy utilization
 Advocacy of energy conservation and eco-friendly lifestyle

utilization rate of nuclear power plants while giving top priority to safety, improve the thermal efficiency of our thermal power plants through the successful development of high-efficiency LNG thermal units, reduce transmission and distribution loss, introduce renewable sources of energy, and utilize the Kyoto Mechanisms.



#### Utilizing the Kyoto Mechanisms

We are actively utilizing the Clean Development Mechanism (CDM)\*1 and Joint Implementation (JI)\*<sup>2</sup> in order to combat global warming on a global scale.

Our project to generate electricity from rice hulls in Thailand, which was approved by the Japanese government as a CDM project, began operation in December 2005.

We are also investing in projects to reduce greenhouse-gas emissions in developing countries, including funding \$10 million each to the World Bank's Prototype Carbon Fund (PCF) and the Japan Greenhouse Gas Reduction Fund (JGRF), which is the first fund for the reduction of greenhouse gases in Asia.

- \*1: In CDM projects, a developed country joins a GHG emission reduction project in developing countries, and may count part of the resulting reduction as its own
- \*2: Under JI, a developed country (Annex 1) jointly implements a project for reduction of GHG emissions, and may count part of the resulting reduction as its own.

# Stable supply of electricity and the environment

Japan must import nearly all its energy resources from overseas. In order to ensure a stable supply of electricity, it must generate power using a combination of hydropower, thermal-power sources such as oil, coal, and LNG, as well as nuclear power.

In order to provide our customers with worry-free access to electric power, we develop an appropriate balance of these power sources, taking into account economic efficiency, environmental impact, and technical operating characteristics.

Nuclear power is the most effective way to prevent global warming, as it does not generate CO2 emissions.

Meanwhile, coal-fired thermal power stations generate large quantities of CO2, but coal is more abundant than other fossil fuels, and as a fuel, coal excels in ensuring a stable and economic supply. The effective use of coal will thus be essential in the future. We utilize coal with consideration for the environment, by employing technologies such as the latest high-efficiency generation facilities, and sulfur and nitrogen scrubbers in our stacks.

We are jointly researching a power generation system called the Integrated Gasification Combined Cycle (IGCC) with other electric companies. The goal of this joint research is to have thermal efficiency on a par with LNG thermal plants.

#### **Recoverable reserves**





Breakdown of CO2 emissions by type of power generation



CO2 emissions derived from energy consumption at all stages, from resource extraction and facility construction to fuel transportation, refining, operation, and maintenance, as well as fuel for power generation.

Figures for nuclear power generation include emissions associated with domestic reprocessing of spent fuel and use of a pluthermal system (assuming a single recycling) as now planned, and disposal of high-level radioactive waste. Source: Central Research Institute of the Electric Power Industry (CRIEP)

#### An environmental action plan for the electric-power industry

In November 1996, the Federation of Electric Power Companies of Japan Group of 12\*1 published the Electric Power Industry Action Plan, which lists their voluntary targets and efforts needed to achieve them. This plan was announced before the adoption of the Kyoto Protocol in December 1997.

The environmental action plan states "We will strive to reduce our end-use CO2 emissions per base unit by 20% below fiscal year 1990 levels (about 0.34 kg-CO2/kWh) by fiscal year 2010."

We are actively implementing measures as

an electric utility in terms of both electricity usage and supply, and we will continue to put our maximum effort into attaining this target by strengthening the following measures.

- Promotion of nuclear power energy committed to ensuring safety and regaining trust
- Examination of ways to further improve thermal efficiency of thermal power stations and to operate thermal power sources
- Utilization of the Kyoto Mechanisms
- \*1: The Federation of Electric Power Companies of Japan Group of 12 consists of the 10 members of the Federation of Electric Power Companies of Japan (Hokkaido, Tohoku, Tokyo, Chubu, Hokuriku, Kansai, Chugoku, Shikoku, Kyushu, and Okinawa Electric Power), Electric Power Development Co., Ltd., and The Japan Atomic Power Company.

CO2 emissions of by electric utilities



Note: Dotted line represents estimates without an effect of long-term shutdown of nuclear power stations from 2002 to2004.

Source: the Federation of Electric Power Companies of Japan

#### Guideline 2 We will reduce our environmental load.

# Reduction of non-CO2 greenhouse gases\*1

In June 1999, we established in-house guidelines for limiting utilization and emission of chlorofluorocarbons (CFC). In accordance with these guidelines, we are striving to curtail emissions, and recover and reuse global warming substances such as hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF6) as well as CFC and other ozone depleting substances.

HFC is used mainly as a refrigerant for air conditioning systems. We work toward limiting its emission into the atmosphere by preventing leakage during equipment installation and repair and by reusing recovered gas.

PFC is used in liquid form as a transformer coolant and insulating medium, and there is no risk of its emission into the atmosphere.

#### Rate of SF6 recovery during inspection



Emissions of HFC and SF6 (Substitute for CFCs)

Substance	Emissions
HFC	176 t-CO2
SF6	About 50,000 t-CO2

SF6 is used mainly as an insulating medium in electrical equipment. Its greenhouse effect is estimated to be 23,900 times greater than CO2. We have developed a recovery device and rigorously apply procedures for its recovery and reuse during inspection and repair. In fiscal year 2005, we worked for efficient recovery, and achieved a recovery rate of 99.6 % during removal and 99.2 % during inspection.

\*1: There are six types of Greenhouse gases: carbon dioxide (CO2) emitted mainly along with fuel combustion; methane (CH4) derived from fermentation of organic substances; dinitrogen monoxide (N2O) deriving from production activities at industrial plants; hydrofluorocarbons (HFCS), which are refrigerant alternatives to freon; perfluorocarbons (PFCS), also refrigerant alternatives; and sulfur hexafluoride (SF6), used for electrical insulation.

# Measures to reduce greenhouse gases from transportation

We are working to reduce greenhouse gases from transportation, by using highly fuel-efficient cars and other lowemission vehicles; strictly enforcing the prohibition against leaving the engine idling when stopped; and ensuring that all our employees use public transportation for commuting and business travel as a rule. We have reduced the fuel consumption of company vehicles by 13% below fiscal year 1998 levels.

We also strive to effectively operate our tankers when shipping fuel from overseas.

When shipping coal, we promote the use of large container ships, in order to improve transportation efficiency. In fiscal year 2005, we conserved about 10,000 tons of transportation fuel and reduced CO<sub>2</sub> emissions by 30,000 tons by promoting efficient transport.

LNG tankers use the boil-off-gas (BOG) from vaporized natural gas in the tanks during transport as fuel, so as not to waste it.



Our coal-carrier ship, Tatsuki-maru

### Promotion of resource and energy conservation at the office

We have strived to reduce the use of electricity, water, and other resources in the office by setting targets at each workplace. In fiscal year 2005, our efforts to conserve energy and resources made it possible to reduce our electricity and water usage by 9.8% and 9.6% respectively, compared with fiscal year 1998 levels,.

Additionally, in June 2005, we joined Team Minus 6%, which is a national movement to prevent global warming being promoted by the national government. Our president and two of our employees modeled at the Cool Biz Collection (event organized by the Ministry of the Environment) at Expo 2005 Aichi Japan.

# CO2 emissions from use of electricity in offices and fuel in vehicles

		CO2 emissions
(	Office electricity usage	About 50,000 t-CO2
1	Vehicle fuel	About 10,000 t-CO2



Then-president Fumio Kawaguchi and two of our employees modeled at the Cool Biz Collection



## Waste Reduction

## Targeting zero emissions

We set the target of zero emissions in fiscal year 2004, and have been engaged in various activities to meet this target based on the 3Rs of reduction, reuse, and recycling of waste, including waste produced by our contractors.

In fiscal year 2005, we produced 1.413 Mt of waste. Through 3R activities, the amount taken off company premises for disposal amounted to 8,000 t, a decrease of 1,000 t from the previous fiscal year.

We shall continue to study effective

Recycle

Reuse

Materials Fuel

#### Industrial Waste Processing and Recycling Flowchart

Coal ash (in-house construction material)
 Metal scraps (recycled power lines) etc.



# Trend of the amount of industrial waste and outside landfill waste



Note: The amount of coal ash and other waste increased in FY2001 and FY2002 due to the start of commercial operation of units No.4 and 5 at the Hekinan Thermal Power Station.





### Effective use of coal ash

As a material, coal ash has many outstanding properties, including making materials finer-grained, lighter, and stronger. We have a wide range of recycling methods, in order to effectively utilize our limited resources.

#### Circulash

(Unit: 10,000 t)

We manufacture artificial zeolite at our Hekinan Thermal Power Station (located in Hekinan City, Aichi Prefecture) with the goal of adding value to coal ash and using it in advanced applications.

Artificial zeolite is an inorganic material consisting of fine gray granules. It is made by adding caustic soda to coal ash, whose



Artificial zeolite products: powder and granule type

**Environmental Performance** 

#### Cable drum Packing materials Thermal insulation • Coal ash (cement material Gauges etc land-development material, etc.) Gypsum Amount Recycled 1.366.000 t (cement material, gypsum board, etc.) • Cement scraps OUT /aste .413.000 <sup>-</sup> (roadbed material, etc.) Asphalt (recycled asphalt, etc.) Metal scraps (metal), etc. Reduce Longer-lasting equipment Process improvement In-house landfill waste 33,000 t • Portion of sludge

Outside landfill waste 8,000 t • P • Portion of construction debris • Portion of discarded plastics etc.

Industrial waste, waste byproduct, and amount recycled (FY2005)

	Amount Generated	Amount Recycled	In-House Landfill*1	Outside Landfill
Coal Ash	93.1	93.1*2	0	0.0
Heavy / Crude Oil Ash	0.4	0.4	0	0
Gypsum	29.3	29.3	0	0
Sludge (including solidified sludge)	7.3	3.4	3.3	0.1
Waste Plastics	0.3	0.0	0	0.2
Metal Scraps	2.0	2.0	0	0.0
Glass and Ceramic Scraps	0.2	0.0	0	0.2
Construction Debris	8.3	8.0	0	0.2
Others*3	0.5	0.3	0	0.1
Total	141.3	136.6	3.3	0.8

\*1: Our in-house landfill is used as landfill material along with coal ash.

\*2: In the past, we had accounted for coal ash used in landfilling as in-house landfill, but the national government has deemed that coal ash from coal-fired thermal power plants used in a landfill in accordance with a plan in the Harbor Law counts as land-development material. For this reason, we have accounted for it as amount recycled.

\*3: Waste oil, waste alkali, etc.

Note: Total may not match because the figures are rounded off to two decimal places.

Guideline 2 We will reduce our environmental load.

main constituents are silicon and alumina, and performing alkaline treatment. It has a porous crystalline structure, and functions as an adsorbent, cation exchanger, medium, and more. It is used in a wide range of applications, including absorbing and deodorizing foul-smelling gases, purifying wastewater containing heavy metals, and soil amelioration and other environmental improvement.

We market the high-quality artificial zeolite we manufacture under the trade name Circulash®. It is used as household air purifiers, garden soil improvers, and others.

We have also developed an agricultural soil improver named Land Plus Z, which is now available on the market. This product is a mixture of artificial zeolite and clinker ash, which is a type of coal ash. Land Plus Z has the ability to retain fertilizer and water and to improve soil pH, and has excellent water and air permeability.



Edible chrysanthemums growing in a greenhouse. The plants on the left use Land Plus Z, and the plants on the right do not.

# Development of PLASH plastic/coal-ash mixture

We have jointly developed a product that effectively utilizes coal ash as an ingredient in plastic products with MITSUBISHI HEAVY INDUSTRIES, LTD. The product, named PLASH, has been manufactured and marketed since 2004.

We have also developed new products with added glass fiber for increased strength and products made from re-



cycled materials, with the aim of effectively using PLASH in a wide range of applications.

# Using fallen leaves washed into dams as humus

The Kawabe Dam Control Center, which is part of the Kamo Electric Power Center at our Gifu branch, has developed a device to mulch and separate fallen leaves washed into our dams to make humus. The center offers hums made from fallen leaves to members of the local community.

Fallen leaves, driftwood, and other detritus wash into our dams. We have manufactured humus from those otherwise useless materials. We distributed it at the Minokamo Environmental Fair organized by the city of Minokamo and gave rhinoceros beetles (a popular children's pet in Japan) raised in the humus to local elementary-school children. We also supplied driftwood as fuel for the Forest Power Station in the village of Shirakawa.

#### Management of radioactive waste

The term "radioactive waste" refers to the waste generated at nuclear power

#### Examples of processing of radioactive waste

Release rom exhaust pipes Measurement of radioactivity and confirmation of safety Filtering Gas Measurement of Release into the sea with coolant sea water Filterina radioactivity and confirmation of safety Liquid Evaporation/enrichment Rokkasho Low-Level Radioactive Waste Disposal Center Π Incineration Safe storage on station premises Hardening in drums Solid Compression Melting

stations which emits radiation. Radioactive waste produced at the Hamaoka Nuclear Power Station is treated with various methods adapted to the type and concentration, in order to prevent it from exerting any impact on the living environment.

Some of the gaseous and liquid radioactive waste is discharged into the atmosphere and the sea from exhaust pipes and ducts, upon confirmation of its safety through measurement of the radioactivity. We manage to keep the impact of this discharge on the surrounding area to no more than about one-fiftieth as high as the natural radiation (0.05 millisieverts/year).

As of the end of fiscal year 2005, we were safely managing 34,986 drums (in equivalent of oil drums) of low-level radioactive waste at the solid waste storage depot on the station premises. Since fiscal year 1992, we have sent a total of 19,693 drums to the Low-Level Radioactive Waste Disposal Center (operated by the Japan Nuclear Fuel Limited) in Rokkasho Village, Aomori Prefecture. There, the drums are stored underground (at a depth of at least 4 m) after the radioactive material is sealed in.

# Promoting Environmental Conservation Measures at Power Stations

We are paying close attention to the surrounding environment by implementing measures against air pollution, water pollution, noise, and vibration based on environmental conservation agreements with local municipalities, and we are monitoring the effectiveness of these measures.

At our power stations, we also carry out monitoring surveys of the surrounding area to verify that there is no impact on the environment.



### Environmental conservation measures at thermal power stations

Our thermal power stations take a variety of measures to protect the environment, including measures to protect the air, as well as to reduce wastewater, noise, and vibration. Our stations have the world's lowest levels of sulfur oxide (SOx) and nitrogen oxide (NOx) emissions per unit of electricity in the world.

# Comparison of power station SOx and NOx emissions in major countries



Source: Basics of Energy Learned from Graphs and Charts, the Federation of Electric Power Companies of Japan Chubu Electric Power: FY 2005; Japan: FY 2004; Others: calendar year 2002





### Observance of environmental laws, regulations, and agreements

In fiscal year 2005, we did not violate any environmental laws or regulations, but in one case we did exceed levels stipulated in antipollution agreements, and have taken measure to prevent a recurrence.

#### REPORT 2005

# Excessive coliform bacteria count in effluent from sewage treatment facility

In January 2006, it was found that the effluent from the sewage treatment facility at our Yokkaichi Thermal Power Station had a coliform bacteria count of 590 per cm<sup>3</sup>. This exceeded the limit of 200 per cm<sup>3</sup> we agreed upon with the city of Yokkaichi for pollution prevention.

We reported this finding to the relevant government authorities, and investigated the cause. We confirmed that our facilities were all functioning properly, and conjectured that it was highly probable that the sample had become contaminated. We thus devised measures to prevent foreign substances from falling into the water.

### Radiation control in the vicinity of the Hamaoka Nuclear Power Station

People are exposed to radiation and radioactive substances in daily life. Annual exposure to natural radiation in such forms as cosmic rays and radioactive substances in soil and food amounts to about 2.4 millisieverts<sup>\*1</sup> per person (average worldwide). Laws stipulate that radiation doses received from nuclear power stations by people residing in their vicinity must not exceed 1 millisievert per year.

The dose from the Hamaoka Nuclear Power Station, as estimated based on the amount of radioactive gaseous and liquid waste discharged from it, was less than 0.001 millisieverts for fiscal year 2005.

\*1: A unit designating the degree of radioactive influence on the human body

#### Guideline 2 We will reduce our environmental load.

# **Chemical Substances Management**

## Use of PRTR-regulated substances

We have always managed the chemicals used for water and wastewater treatment and chemical analysis at thermal power stations in accordance with manuals.

In 1997, prior to the July 1999 enactment of the Law for Determination of the Release of Specified Chemical Substances into the Environment and Promotion of Improved Control (i.e., the PRTR Law), we commenced PRTR studies on our own initiative and confirmed that their release was below prescribed levels.

We are committed to strict management of such substances based on inhouse manuals and other materials, and shall continue to work for lower release levels of PRTR-regulated substances through measures such as improving operating methods and shifting to alternative substances and technologies.

# Preventing emissions of dioxins

In order to prevent the emission of dioxins, we phased out 243 small-scale incinerators (since September 1997) by the end of fiscal year 2005, leaving only facilities for research purposes as specified under the Law Concerning Special Measures against Dioxins. These facilities are properly maintained and managed in accordance with the law.

#### Approaches to emission reduction

To reduce the release of toulene, xylene, and other pollutants contained in paint into the atmosphere, we are studying prospects for a switch to paint products that contain little or no such substances. We used paint with almost no toulene and xylene for some of the painting done in thermal power stations in fiscal year 2005. We shall further pursue these studies while also attempting to reduce emissions by means such as revising the frequency of painting.

#### Consumption & emission of PRTR-regulated substances (FY 2005)



#### PRTR-regulated substance survey results (FY 2005)

Substance		Americant Lineal	Amount D	Amount	
Substance	Main Use	Amount Used	Atmosphere	Water	transferred
Ethyl benzene	Contained in paint	6.0 t	6,000kg	0	0
Xylene	Contained in paint	11.7 t	11,700kg	0	0
HCFC 225	Dry cleaning	2.7 t	2,700kg	0	0
Styrene	Contained in radioactive waste fixation agent	5.4 t	0	0	0
Hydrazine	Boiler feedwater treatment	6.4 t	1.2kg	17.1kg	0
Halon 1301	Refrigerant for cryogenic power generation	7.7 t	0	0	0
Benzene	Contained in thermal power plant fuel	891.7 t	0.0	0	0
Trisphosphate	Turbine control oil	4.5 t	0	0	4,500kg
Dioxins	Emitted from small incinerators, etc.	-	0.20mg-TEQ	0	0.00016mg-TEQ

Note: Except for dioxins, figures are for Class I Designated Chemical Substances that are handled in amounts of 1 ton or more per year (0.5 ton or more for Special Class I Designated Chemical Substances) at company business locations.

Note: Since the toxicity of dioxins varies with the type of isomers, they were converted to toxicity equivalency quantities (TEQ) of 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin.

### PCB (polychlorinated biphenyl) treatment

We have devices both utilizing polychlorinated biphenyl (PCB) in high concentrations and pole-mounted transformers that utilize recycled insulation oil<sup>\*1</sup> with accidental admixture of PCB traces. We have stored this equipment under strict control since 1974, when a ban was imposed on PCB manufacture, import, and use.

To detoxify large quantities of stored insulation with low concentrations of

PCB, we built a insulation oil recycling center on company land in the No. 9 zone of the Nagoya port (located in Minato Ward, Nagoya City), and began its operation in February 2005. The center safely and reliably detoxifies this oil by the alkali catalytic cracking method, which is one of the dechlorination methods recognized under the Waste Disposal and Public Cleaning Law. After treatment, the oil is shipped by tank lorry for reuse.



Insulation oil treatment facility

To treat the casings and parts from the transformers containing low concentrations of PCB, we are building a facility on the premises of our Nishi-Nagoya Thermal Power Station (located in Tobishima Village, Ama County, Aichi Prefecture). Tentatively named the "Transformer Recycling Center," this facility is scheduled to commence operation in the latter half of fiscal year 2007. We also plan to outsource the treatment for the PCB-use devices (with high PCB concentrations).

\*1: This oil is used in certain pole-mounted transformers. Accidental admixture of PCB in trace amounts was detected in 1989 (this is the insulation oil with low PCB concentrations).



Transformers treatment facility (tentative name)

#### REPORT 2005

#### Fire at our insulating oil recycling center

On August 13, 2005, there was a fire at the facility for treating oil with low concentrations of PCBs at our insulating oil recycling center. At 9:40 am, the fire department confirmed that the fire had been extinguished. We conjectured that high temperatures and alkalinity wore and damaged the gasket\* in the connection between the container holding insulating oil with low PCB concentration for treatment and the outlet valve, causing a leak of this oil from the connector and leading to the fire. For this reason, we replaced the gasket with a product with high temperature and alkalinity resistance, and also isolated the connection so that even if insulation oil with low PCB concentrations should leak, it would not come in contact with the air, and filled the interior of the isolator with an inert gas (nitrogen). Note that this incident did not result in leakage of insulating oil outside our facility, nor did it cause any casualties.

Note: Gaskets are thin disks placed between connectors in order to prevent leaks of liquid from ductwork and other connectors.

#### Status of asbestos usage

We are committed to investigating and monitoring our asbestos usage, and publicize our asbestos initiatives in a timely manner.

We have used spray-on coatings containing asbestos in some of our buildings as soundproofing, insulation, and fireproofing materials, but we are currently implementing well-planned measures to remedy the issue, including asbestos removal. We have also used products containing asbestos in some of our generator facilities' heat insulation, shielding, and other materials, but as these are molded products, it will not disperse under normal-use conditions. For this reason, we plan to gradually replace these products with asbestos-free products when we carry out periodic inspections, improvements, and repairs.

We will continue to respond appropriately to asbestos issues, in accordance with national asbestos policy and relevant laws and regulations.

There have also been claims of workrelated accidents involving asbestos by the employees of our company and our group companies. One person's case has been recognized as a work-related accident involving asbestos, and there are two ongoing claims as of May 2005.

# Measures against soil pollution

We are committed to preventing soil pollution, and strictly complying with relevant laws and regulations. In fiscal year 2005, two new cases of soil pollution were confirmed, so we acted appropriately to remove the soil within the range of contamination in accordance with legal ordinances.

We are planning voluntary soil surveys based on our internal policy, in order to avoid soil pollution-related risk.

#### REPORT 2005

#### Soil surveys on our property

We surveyed the soil at our former Yada Minami Warehouse (located in Yada Minami, Higashi Ward, Nagoya) when we dismantled the building. The survey analysis detected levels of lead and lead compounds exceeding environmental standards. For this reason, under the guidance of the city of Nagoya, we removed and appropriately treated the soil in the affected area.

#### Guideline 2 We will reduce our environmental load.

# Environmentally-friendly activities

When building new facilities, we make various efforts to take into account the environment and landscape of the surrounding area, in order to preserve nature.

### **Greening measures**

We own about 2,300 ha of land covered in greenery, including forests and green spaces on our power-plant premises.

We green our thermal and nuclear power plants with the goal of forming forested areas similar to the natural state. When we green our plant premises, we strive to create a land ecosystem. We select trees that harmonize with the local plant life, and also include food plants favored by birds and other animals.

### Giving away saplings

We donate saplings to schools, parks, and other public facilities in order to support the creation of urban and suburban environments rich in greenery. As of the end of fiscal year 2005, we have donated a cumulative total of about 289,000 saplings.

Our Chita and Chita Number Two Thermal Power Stations cooperated with



Planting trees in the Okada Hokubu district of Chita City

tree-planting activities carried out in the Okada Hokubu district of Chita City. This was part of the Acorn Woods Project organized by the district's zoning association. Chita and Chita Number Two donated 400 saplings to the project.

## **Biodiversity initiatives**

# Establishing biotelemetry technologies

We are working to develop technologies to investigate the influence of our hydropower dams and other river structures on the habitats of river fish and other wildlife. As part of these efforts, we have developed a form of biotelemetry, whereby we tag fish with miniature transmitters, and use them to analyze their actions. One conventional method of tracking fish was to attach identifying tags to them, release them, and then catch them again, but the only information this provided was the point of release and the point of capture. Our biotelemetry technology, however, is able to track the movements of each fish in the river, around the clock. This survey is being conducted by Group company, Techno Chubu Co., Ltd.

#### Reducing tree logging by using helicopters to remove steel towers

Group companies, C-TECH CORPO-RATION and SHIN-NIHON HELICOPTER Co., Ltd. have jointly developed a transportation support system for removing steel towers. When dismantling a steel tower in mountainous areas, we had conventionally dismantled the structure piece by piece from the top down, and then removed the dismantled materials from the site using helicopters and cableways. This new system reduces the amount of working space on the mountain by suspending the tower in midair and carrying it down to level ground. As a result, we are able to reduce the amount of trees that must be cleared by as much as 80 to 90%. This also has



safety and cost benefits, including reducing the amount of work performed at high elevations.

Tower carried to level ground by a helicopter

## Landscaping considerations

When we build and maintain generators, transformers, power transmitters and distributors, and other power-supply equipment, we strive to achieve harmony with the local scenery, while taking into account economic factors.

We select the color and shape of stacks, buildings, and other structures in our power stations after evaluating them via a scenery simulation program.

When we pass power lines through areas with superb natural beauty, such as nature parks and picturesque sites, we employ a number of measures to achieve harmony with the surrounding nature, including using colored coatings and low-gloss treatment on our steel towers, and colored insulators.

We have also developed a scenery simulation system that makes it easy to visualize utility poles and other overhead distribution lines, and examine the impact on the surrounding scenery. We began full-scale operation of this system in the fall of 2005.

## Guideline 3 We will improve our level of environmental management.

In order for corporations to be committed to preserving the environment, it is critical to promote environmental management. We have been working hard to introduce an environmental management system, provide thorough environmental education to our employees, and promote green procurement.

Our aim is to elevate our level of environmental commitment even further.

# Environmental Management

For sustainable growth, it is important for companies to pursue environmental preservation and economic activities simultaneously.

We consider it part of our mission to ensure that our corporate activities show concern for environmental preservation well as provide a stable and low-cost supply of energy. The constant practice of this philosophy is what the term "environmental management" means to us.



To properly implement environmental management we have established an organizational structure headed by our president, to promote it across divisional and office boundaries.

## Implementation of environmental management system (EMS)\*1

Since establishing environmental management rules in January 1998, we have gone on to set up environmental guidelines and action targets at each location.

As a result, as of the end of fiscal year

2005, about 90 % of our locations had implemented EMS, and some had been certified under ISO 14001. EMS activities, such as environmental load reduction efforts and PDCA technique introduction, are gradually taking root.

# Locations with ISO 14001 certification (as of end of FY2005)

Head office	Chita/Chita No. 2 Thermal Power Station Hamaoka Nuclear Power Station Engineering Technology Center Research & Development Division
Regional offices	Shizuoka Regional Office (14 locations) Nagano Regional Office (14 locations) Okazaki Regional Office (13 locations)

In fiscal year 2004, we began redesigning our environmental management system, and had launched it at all branches by the end of fiscal year 2005.

When redesigning the system, we added the improved goal of achieving further efficacy and efficiency, by promoting environmental management directly linked to our business activities, and enabling each regional office to centrally manage the environmental management systems of all business locations under its supervision.

\*1: An organizational scheme enabling a company to ascertain the actual or potential impact of its activities, goods, and services on the environment; establish related guidelines and targets; and take independent action on them.

## Internal EMS certification system

Since fiscal year 1999, we have implemented an internal certification system for company-wide deployment of EMS. Techno Chubu Company Ltd., a subsidiary of Chubu, carries out examinations on par with examination and registration institutions.

This system allows us "to confirm company statements by a person or group outside the organization" (excerpt from JISQ 14001), recognized under the revised ISO 14001 of November 2004.

#### Internal EMS certification system



#### Transition in EMS completion rate



#### Guideline 3 We will improve our level of environmental management.

## Creation of the ECONP logo

In July 2005, we created an environmental logo and name in order to promote Group-wide environmental management and use it to build an environmental brand.

This logo is used at the business locations of Chubu and our Group companies that have obtained ISO 14001 environmental management system certification.



The name "ECONP" comes from the English word "eco", or the environment, and the Japanese word "onpu", or musical note.

#### REPORT 2005

# Research on quantitative assessments of environmental management activities

Since fiscal year 2003, we have been conducting research with the goal of developing methods to quantitatively and comprehensively ascertain the effects of our environmental management activities on our businesses.

In fiscal year 2004, we calculated an index of environmental impact per unit of electricity sold, by using a Japanese version of the Life Cycle Impact Assessment Method based on endpoint modeling (LIME) to assess the environmental impact of our business activities. We additionally calculated an index of environmental contribution per unit of electricity sold, by using the Contingent Valuation Method (CVM) to assess our contributions to the environment.

In fiscal year 2005, we improved the evaluation method of our environmental impact to more closely reflect our business activities in the indicator, by expanding the scope of assessment to include all fields, ranging from power generation to logistics. In fiscal year 2003, we inaugurated our green procurement system to continue the efforts our company and other companies involved in our business activities have taken to help create a recycling-oriented society. In fiscal year 2006, we plan to also take CSR into consideration when procuring our supplies.

Green Procurement

# Green procurement of office supplies

We conduct green procurement for copier paper, pens and pencils, and other general office supplies based on generally recognized evaluation criteria such as eco logos. In fiscal year 2005, our green procurement ratio was 94%. We are now aiming to further raise our employees' environmental awareness, and achieve a green-procurement ratio of 100% for office supplies.

#### Green procurement record in FY2005

Item	Green procurement ratio
Copier paper	100%
Printer toner	100%
Other office supplies*1	76%
Total	94%

\*1: Figures are for those purchased through electronic purchasing system.

### Survey of the status of environmental management among business partners

Since fiscal year 2002, we have conducted a survey with our business partners to ascertain the status of their approaches to the environment, and improve such approaches among all companies involved in our business. In fiscal year 2005, we conducted a survey of about 1,240 companies, regarding EMS implementation, chemical control systems, and other aspects of environmental management.

# Green procurement of electric-power equipment and materials

In order to reduce the environmental impact of our electric-power facilities, we facilitate green procurement of our electric-power equipment and materials. In July 2005, we published a Green Procurement Guideline. We are currently working to improve our products in partnership with our business partners, taking into consideration the environmental impacts of our electric-power equipment and materials.

As part of our efforts, we are soliciting from our business partners "green product proposals" on environmentallyfriendly electric-power equipment and materials. We received one proposal in fiscal year 2005, and certified it as a green product.

#### Record of green product proposals (Certified as green product) Company: Showa Denko K.K. Product: ECOANN Proposal details:

Switched part of the materials used to make liquefied ammonia (mainly used in thermal power stations) from fossil fuels to used plastics, increasing resource efficiency.

# **Environmental Education**

In principle, we offer environmental education to our employees through onthe-job training (OJT)<sup>\*1</sup> on a daily basis.

This is supplemented with instruction from environmental education trainers, and environmental education programs for new hires, as well as for all employees through e-learning.

In addition, each division has its own environmental education program as part of its collective training.

\*1: A method to educate and train personnel in the workplace

**Environmental education system** 



# Environmental education trainer system

Under the system, our Environmental Affairs Department holds seminars for environmental education trainers who are selected at each business location. These trainers apply the knowledge gained through these seminars toward educating the employees at their business location about the environment.

This system was established in fiscal year 1998. In fiscal year 2005, the seminar was held for a total of 218 trainers. A cumulative total of 1,920 trainers have attended the seminars thus far, and are capitalizing on the environmental **Environmental Education Trainer System** 



knowledge obtained in their own work and in guidance of their subordinates.

# Environmental education through e-learning

In fiscal year 2002, we began an environmental education program through e-learning for all employees. E-learning is education through the in-house communications network. It enables each of our employees to learn at their own convenience and to deepen their understanding through repeated review.

The program has been steadily heightening awareness of environmental education. In fiscal year 2005, it attracted the participation of 97 % of the employees.



E-learning for all employees

Chubu Eco Points

As part of the Global Warming Prevention Month initiatives in December, we implemented a Chubu Eco Points program, in order to encourage independent environmentally aware actions by our employees.

Under the program, employees receive points for the everyday environmental activities they engage in at work, in their communities, and with their families. Activities may include cleanup projects, environment-related household bookkeeping, environmental workshop attendance, and environment certification acquisition.

During the period of the program (from December 2005 to February 2006), 1,555 employees participated in the program (about 10%).

The results of the program were published throughout our company, and benches made during forest activities in Uchigatani Forest were given to the highest point earners as a prize.

We plan to continue this program for the sake of the environment.

#### Guideline 3 We will improve our level of environmental management.

# Approaches by our Group Companies

The Chubu Electric Power Group engages in the comprehensive energy service business, as well as in the IT and environmental and social service businesses. In all our business activities, we regard the prevention of global warming, the contribution to the building of recycling-oriented communities, and other components of environmental preservation as a matter of CSR. In keeping with this view, we are promoting environmental management through a concerted Group-wide effort.

## Environmental philosophy and vision shared by the entire Group

In April 2004, we formulated our Group Environmental Declaration, which consists of the environmental philosophy and vision shared by all Group members.

### Chubu Electric Power Group Environmental Measures Committee

We instituted the Committee in April 2001 for the purpose of increasing cooperation and improving environmental measures among Group companies. As of the end of fiscal year 2005, it had the participation of 36 firms, including Chubu Electric.

In fiscal year 2005, members of the Committee gathered twice to study the possibility of setting up environmental activity guidelines that can be shared by Group companies.

# Increase in the level of environmental management

# Formulation of environmental guidelines and action targets

To reach the goal of a 100 % rate of EMS implementation, we are having all of our Group companies formulate environmental guidelines and action targets adapted to their business.

As of the end of fiscal year 2005, 33 of our Group companies had set up such guidelines and targets (implementation rate: 92%).

In addition, 14 of our Group Companies had implemented EMS (implementation rate: 39%), an increase of 5 com-

# Implementation rate of environmental guidelines and action targets



Implementation rate of environmental management system<sup>\*1</sup>



\*1: Counted the number of our Group companies with at least one business location that is certified under ISO 14001 / ISO 14001 (self-declared), or has introduced environmental activity evaluation programs.

\*2: An environmental activity evaluation program created by the Ministry of the Environment based on ISO 14001. panies from the previous fiscal year.

#### **Environmental education**

In fiscal year 2005, we held an environmental education workshop in order to support environmental education for employees of our Group companies. We also provided e-learning and other environmental educational materials to our Group companies over our Group intranet, as well as distributed educational textbooks. In addition, we dispatched our employees as instructors to environmental training courses held by our group companies. As a result, the number of our Group companies implementing environmental education has grown by 15 from fiscal year 2005, to 32.

# Implementation rate of environmental education



# Green procurement of office supplies

As of the end of fiscal year 2005, 33 of our Group companies practiced green procurement of office supplies.

In fiscal year 2005, the green procurement rate among our Group companies reached 70%.

# Initiatives by our Group companies

#### **C-Energy**

Through its ESCO business, C-Energy supports environmental, energy-conservation, and other measures for its customers as a total energy service company. As of the end of fiscal year 2005, it had 83 contracts for 178,195 kW.

C-Energy helps its customers reduce their CO2 emissions and other environmental impacts by choosing systems harnessing new energy, such as natural-gas cogeneration systems, solar power generators, and fuel cells.



Cogeneration system

#### **TOENEC CORPORATION**

TOENEC CORPORATION is engaged in the ESCO business, offering comprehensive services, including energy-conservation assessments, design, installation, setup, maintenance, operation, and management of energy-conservation equipment, and project financing.

In January 2006, The Energy Conservation Center, Japan (ECCJ) presented the company with the Excellent ESCO Project Award Bronze Medal for the Bank of Nagoya Takabari Building ESCO Project, a joint project with the Bank of Nagoya. This project created annual savings of 12,873 GJ (equivalent to 337 kl of crude oil), and reduced CO2 emissions by 145.7 tons, through the introduction of energyefficient lighting and air conditioning units, as well as a cogeneration system.

### Environmental load of our Group companies (in FY2005, for 35 of our Group companies excluding Chubu Electric)

We began collecting data on environmental load of all our Group companies in fiscal year 2002. Each company is striving to reduce environmental loads based on its own target.

Utilization		FY2005
Electricity utilization Offices		66.63 GWh
	Plants	137.34 GWh
Water utilization		Tap water: 640,000 m <sup>3</sup> ; Industrial water: 130,000 m <sup>3</sup>
Vehicle fuel utilization		Gasoline: 4,400 kl; Diesel: 2,900 kl
Fuel utilization Petroleum		2,800 kl
Gas		9.67 million m <sup>3</sup>

Substance	FY2005
Industrial waste	Amount wasted: 65,000 tons; Amount recycled: 55,000 tons
Waste paper	Amount wasted: 1,687 tons; Amount recycled: 1,209 tons
SOx emissions	4.0 tons
NOx emissions	48.4 tons
CO <sub>2</sub> emissions	150,000 tons

Note: Calculated based on electricity utilization, vehicle fuel utilization, and fuel utilization

#### PRTR (actual)

Culture	Marine and Bandian	E (2005						
Substance	Main application		FY2004			FY2005		
		Amount handled	Emissions	Amount transported	Amount handled	Emissions	Amount transported	
Halon 1301	Thermal medium for cryogenic power generation	7.0 t	7,000 kg	0	9.1 t	9,100 kg	0	
HCFC 225	Product washing	2.5 t	2,500 kg	0	1.7 t	1,700 kg	0	
Toluene		8.2 t	7,400 kg	750 kg	10.6 t	9,900 kg	700 kg	
Ethylene glycol monoethyl ether	Contained in paint	1.7 t	170 kg	1,500 kg	1.8 t	180 kg	1,600 kg	
Xylene		5.2 t	3,800 kg	1,400 kg	4.8 t	3,500 kg	1,300 kg	
Styrene		1.1 t	160 ka	920 ka	1.3 t	190 ka	1.100 ka	

Note: Figures are for Type 1 chemical substances with a handling volume of at least 1 ton per year

(including Special Type 1 chemical substances with a handling volume of at least 0.5 t/ year) at our business locations.

## Environmental preservation costs of our Group companies (in FY2005, for 35 of our Group companies excluding Chubu Electric)

We calculated environmental preservation costs (amount of expenditures) of our Group companies

			(Unit:	millions of yen)	
Category		Major items	Expen	nditures	
			FY2004	FY2005	
Resource cycle	Industrial waste measures	Reduction and recycling	60	97	
		Disposal and treatment	683	705	
Ordinary waste measures		Reduction and recycling	85	39	
		Disposal and treatment	152	142	
Management activities Organizational measures		Personnel expenses for environmental preservation organizations, and environmental education/training	652	977	
Certification acquisition and maintenance		Acquisition and maintenance of ISO 14001, and internal certification	77	71	
Social activities Greening and nature conservation		Greening and nature conservation activities	118	111	
Total			1,827	2,140	
Average environmental preservation costs per company (expenditures)			51	61	

Note: Totals may not agree because figures have been rounded down to the nearest 100 million yen.

## Guideline 4 We will promote environment-related communication and enhance cooperation with the community on a local and global level.

We are working hard to make sure those around us can understand

and trust our environmental efforts through active information disclosure and interactive communication.

We need to cooperate with the local community as well as countries worldwide

in order to address global environmental issues.

We, therefore, strive to promote cooperation with the local communities

and actively pursue information exchange and overseas technological collaboration

with energy- and environment-related overseas research institutions.

# **Environmental Communication**

## "Eco Life Club"\*1

We began operating the "Eco Life Club" on our website in March 2003 to exchange ideas with our stakeholders about environmental problems and environment-friendly lifestyle.

The Club features essays by "eco-life experts", "recycled goods" made of ordinary items, recipes for waste-free cooking, and ideas for living environmentally-friendly lifestyles proposed by customers (in fiscal year 2005, a total of 876 such ideas were proposed). On average, the Club is visited about 19,000 times every month.

In August 2005, we ran a program called Eco Life Challenge. We sought 3,000 families to master the efficient use of home electrical appliances. The participants were highly impressed by the program. One participant stated that although she had conserved electricity before on her own, since taking part in the Eco Life Challenge, her family had started helping out.

 $^{\star}$  1: A lifestyle that is both environment-friendly and pleasant

Eco Life Club Website https://link.chuden.jp/ecolife/ In December, we organized the" Chuden Eco Kitchen Studio" at a department store in the city of Nagoya. At the event, we showcased a eco-friendly menu perfect for parties and entertaining using an IH cooking heater.



Chuden Eco Kitchen Studio

In January 2006, we launched the "Ecology Tour" on our website. The site features female reporters guiding eco tours, where visitors can learn about the environment in a fun way.

URL Ecology Tour Website https://link.chuden.jp/ecolife/ecotour/index.asp

### "Eco Land" website for children

In December 1999, we launched the "Eco Land" website for children, so that they can enjoy learning about environmental problems.

"Eco Land" provides straight forward explanations on various global environmental issues and features answers to questions received from children across the country. It also describes our environmental approaches and suggests how to reduce CO<sub>2</sub> emissions at home in a fun and easy-to-understand manner.

URL Eco Land Website http://www.chuden.co.jp/kids/ecoland/

#### **Backyard tour**

In March 2006, we gave a tour to consumer groups and students with the theme "using coal at Hekinan Thermal Power Station", in order to deepen understanding of our environmental efforts among our stakeholders. The tours showed the environmental measures taken from the point that coal is unloaded from ships until it is used to generate electricity. It also explained the entire process of recycling of the coal ash created from power generation. After completing the tour, we held a discussion session with the participants.



Backyard tour

URL

## Cooperation with the Local Community

### "Invitation to the Forest"

In Taiwa-cho, located in the city of Gujo in Gifu prefecture, we own a broad expanse of forest covering 11 million square meters, called Uchigatani Forest. Here, we conduct forest activities with civic involvement called "Invitation to the Forest." The theme of the program is "Co-existing with nature: Cultivating forests and people "

The activities provide a wide range of people with opportunities to help with forest conservation and experience nature so that as many people as possible actively get involved in environmental conservation activities.

In fiscal year 2005, we held 28 activities (with a total of 308 participants) in cooperation with groups such as "Lovers of Water and Greenery", an NPO comprised mostly by current and retired employee volunteers; and local NPOs "Komisisu Yamato" and "Friends of the Metasequoia Forest". Activities included training for forest volunteers and practical forest education classes.



Making picture frames

U

Lovers of Water and Greenery, NPO Tel: +81-52-880-6678

http://www.wa.commufa.jp/~m-midori/

# Collaboration with an environmental NPO

In collaboration with "Chubu Recycle Citizens' Organization," an NPO headed by Mr. Yoshiyuki Hagiwara, we have held environmental classes for elementary school students since 1999, and given away commemorative tree-planting certificates since 2001.

Chubu Recycle Citizens' Organization, NPO Tel: +81-52- 339-5541

#### http://www.es-net.jp

#### **Environmental Classes**

URL

Since November 2005, we have held a series of three environmental classes for 30 elementary school students in Nagoya and its vicinity. The students enjoyed learning about the importance of energy and the environment.

# Commemorative tree-planting certificates

As a part of the Chuden Heart-to-Heart Campaign, we gave away commemorative tree-planting certificates to 5,000 customers through a drawing.

The certificate can either be exchanged for a sapling to be planted by our customers or their family members on a commemorative day, or donated to citizen groups that plant trees in Japan and abroad. In fiscal year 2005, for example, some of the winners joined actual tree-planting activities in Nagakute Town in Aichi Prefecture and Shirakawa Village in Gifu Prefecture.



The seminar provides the opportunities for us to exchange a broad range of opinions on the environment with the young people who will lead the 21st century.

**Environmental Performance** 

In fiscal year 2005, we held 10 sessions with nine college and graduate students in Aichi Prefecture, and shared views on the environment and energy. The participants had positive comments about the seminars, including their appreciation for hearing directly from the people producing environmental reports and learning about environmental education in the company, as well as gaining the ability to hold their own opinions on environmental issues.



Environment and energy seminar

## Expo Eco Money

We participated and assisted with the Expo Eco Money voucher program at Expo 2005 Aichi Japan as a partner company. The program was a social experiment in environmental currency that is friendly to both people and the planet. We issued certificates that could be exchanged for Expo Eco Money vouchers to participants in environmental classes and other activities at the Electricity Museum.

Additionally, in November 2005 the program was re-opened in the Kanayama district of Nagoya city, and we continue to participate in and assist with the program.

#### Guideline 4

We will promote environment-related communication

and enhance cooperation with the community on a local and global level.

### Creating environmentallyaware communities in cooperation with local companies

In February 2000, we joined with 13 companies in our area in establishing the Environmental Partnership Organizing Club (EPOC). As of the end of fiscal year 2005, 314 companies were participating.

In fiscal year 2005, the club organized "Backyard Tour" and "Eco Talk Session" at EXPO and we actively participated in and supported these events.

Chubu Electric Chairman, Fumio Kawaguchi, served as a chairman of the club in fiscal year 2006.

### Promoting more efficient energy use by customers

CO2 emissions resulting from power use cannot be reduced without the cooperation of our customers. We are helping them make more efficient use of energy by recommending the use of highly efficient equipment and other measures.

#### Popularizing electrical heatpump air conditioners

The Plan for Achieving the Kyoto Protocol Targets lists heat-pump technologies as a decisive way to prevent global warming, and the public and private sectors are working in partnership to popularize this technology.

In our sales promotion activities focused on energy solutions, we recommend highly-efficient and environmentally-friendly electrical heat-pump air conditioners. In fiscal year 2005, we received 1,775 orders using about 190 GW.

#### Popularizing "Eco Cute"

Water-heating accounts for about one-third of the energy consumption in the home. We are working to expand the diffusion of "Eco Cute," an electric water heater that uses a heat pump with natural coolant (CO<sub>2</sub>). Eco Cute reduces energy consumption from water-heating and is also friendly to the family budget and global environment. Thanks to our aggressive sales activities and the support of our customers, we sold some 39,000 units from in fiscal year 2005. This brought the cumulative sales volume to about 94,000 units.



#### Developing a low-cost, multifunctional demand-management system

We have jointly developed a low-cost, multifunctional demand-management system with Hioki EE Corporation, combining a wireless load-curve<sup>\*1</sup> measuring device with monitoring and control software.

For customers, this system is particularly effective at conserving energy and saving money, because it is able to reduce peak electricity load during the summer, when electricity usage is highest.

\*1: A continuous display of customers' electricity demand over time, as it fluctuates according to the time of day and season





Wireless load-curve Hi measuring device A

High voltage meter Adapted to 50,000 pulses/kWh

### Getting people to use electricity efficiently

We take advantage of a wide range of opportunities to provide information about energy conservation to our customers. We ask our customers to use electricity efficiently in order to prevent global warming.

• Display electricity usage for the same month of the previous year on meter readings

- Distribute pamphlets such as "Q&A: Skillfully Using Electricity" and "Eco Report"
- Offer energy-conservation consulting as part of our customer solution services
- Exhibit energy-efficient devices at ENE-WAY and other shows, and organize energy-conservation seminars
- Develop public relations via our Eco Life Club, Eco Land, and other Websites



ENE-WAY 2005

# Cooperation with the World

We are helping to raise the level of environmental conditions in other countries through our consultation activities, by capitalizing on the experience and knowledge we have accumulated by implementing environmental measures at our thermal power stations. We are also actively involved in environment-related projects overseas.

## Participating in project to generate power from rice hulls in Thailand

As part of our overseas environmental projects aimed at acquiring CO2 emissions credits, we are participating in a project in Thailand to generate electric power from rice hulls. Under this project, multiple small-scale thermal power generators fueled by rice hulls are being built in the rice-growing belt of northern-central Thailand. In the province of Phichit (about 320 km north of Bangkok), where the project first started, a rice hull-fired thermal power station (20,000 kW output) went into commercial operation in December 2005. This was our first biomass power-generation project, in Japan or abroad.

## Overseas consulting business

We provide technical assistance to developing countries that are developing electric utilities through official development assistance (ODA) projects and others commissioned by international institutions.

More specifically, we assist in the preparation of power source development plans and in the design of electric facilities, and provide expertise in the areas of construction, supervision, operation, and maintenance of electric facilities and environmental management.

Since launching the overseas consulting business in 1996, we have executed a total of 94 projects in 31 countries as of the end of fiscal year 2005.

### Initiatives with fuel suppliers

In addition to environmental conservation measures at our power stations and business locations, we are also advancing initiatives with our fuel suppliers.

# Forestation at former coal-mine sites in Australia

We are currently researching a forestation project jointly with Toyota Tsusho Corporation, with the goal of increasing CO2 absorption and minimizing forestation costs. The site we are researching is a former coal-mining site in Camberwell, Australia, where our thermal power stations procure fuel.

In October 2005, we also conducted a volunteer tree-planting activity on the land adjacent to the former mining site. This effort was a continuation from 2004. A group of twenty-two individuals, including current and former employees and their family members, from Chubu and our Group companies participated in the planting of Eucalyptus saplings.



## Desalinization project in Qatar

We are currently carrying out a project to build and operate a natural-gas combined cycle power-generation facility with 1,025 MW of output, and a desalination plant with daily output of 273,000 tons, inside the Ras Laffan industrial zone, which is located 80 km northeast of the Qatari capital of Doha. Management and Economic Performance

Environmental Performance

The Middle Eastern country of Qatar is poor in rivers and groundwater, and depends almost entirely on desalinization for its water-resource needs. We purchase LNG from Qatar to fuel our thermal power stations, and hope to further strengthen our friendship through this project.



Part of the Qatari power-generation facilities went online in May 2006  $% \left( {{{\rm{D}}_{\rm{A}}}} \right)$ 

## Development of International Exchange

By accepting trainees from developing countries and dispatching instructors to these countries, we are promoting international exchanges in order to protect the environment, improve energy efficiency, and assure the safety of nuclear power generation.

# Acceptance of trainees and dispatch of instructors

	FY2005	
Number of trainee projects	19(137)	
Number of instructor projects	16(16)	
Note: Element is a solution of all states and be a first state of a solution of a		

Note: Figures in parentheses indicate number of participants.

We are also a member of the World Business Council for Sustainable Development (WBCSD), which brings together some of the world's leading environmental companies.

# Chubu Electric Power Environmental Forum

Since 1993, we have held the Chubu Electric Power Environmental Forum, which gives our president the opportunity to hear views on our environmental measures directly from outside experts.

#### 26th Chubu Electric Power **Environmental Forum**

In November 2005, we held our 26th Environmental Forum, where we heard opinions on the topic "Environmental Initiatives of Our Group Companies." We also observed the environmental initiatives of Group company, Chuden Wing Co., Ltd.

#### Views from the forum members

- When developing wind power, please conduct a thorough preliminary study, focusing on the impact on local community and birdlife (raptors and migratory birds).
- Regarding Guideline 4 (environmentrelated communication and cooperation), you should publicize your Group companies' initiatives in way that is easier to understand.
- Improving thermal efficiency and operating technologies has a significant impact on the environment. You should make sure you do well in these areas since they are the core businesses of an energy supplier.
- You should plan to bury power cables in partnership with other industries. This will reduce the amount of road construction needed and the impact on the lives of local residents.
- Having your president participate in the Children's World Summit for the Environment (the fact that your top management is involved) was a PR coup. You should consider making ef-



fective use of your existing resources for PR like you did here, rather than creating complicated PR strategies.

#### 27th Chubu Electric Power **Environmental Forum**

In May 2006, we held our 27th Environmental Forum, where we heard opinions on the results of our environmental conservation initiatives in fiscal year 2005

#### Views from the forum members

• Although your target was an 18% reduction in CO2 emissions per base unit, you only achieved a reduction of 2.4%. I think you will have trouble meeting your target of a 20% reduction by fiscal year

2010

• The utilization rate of your nuclear power station is low, but I think you should emphasize the fact that you are proactively shutting down units to increase their seismic tolerance to improve safety.



27th Chubu Electric Power Environmental Forum

#### Members of the Chubu Electric Power Environmental Forum (as of May 2006)

Nobuhiro Okuno (chair)	Professor, Graduate School of Chukyo University
Sayuri Ozeki	Executive Director, Chubu Chapter, Nippon Association of Consumer Specialists
Toshihiro Kitada	Professor, Department of Ecological Engineering, Toyohashi University of Technology
Keiko Kunimura	Director, Nagoya City Waterside Research Group
Kazuhiro Kuno	Professor, Faculty of Engineering, Aichi Institute of Technology
Koshin Kura	Executive Director, International Center for Environmental Technology Transfer
Naomasa Shida	Vice President, Shizuoka Eiwa Gakuin University
Akira Tajima	Editor-in-Chief, The Chunichi Shimbun (Newspaper)
Shinkan Tokudome	Professor, Nagoya City University Graduate School of Medical Sciences
Hiroshi Nakamura	Professor, Faculty of Education, Shinshu University
Park, Hye-Sook	Professor, Faculty of Humanities and Social Sciences, Mie University
Masanobu Hasatani	Professor, Aichi Institute of Technology
Tetsuo Hara (Vice Chair)	Professor, Applied Biological Science, Gifu University
Takeshi Horishita	President, Aichi Trade Union Confederation
Eri Mizuo	Associate Professor, Faculty of Human Studies, Meijo University
Ichiro Yamamoto	Professor, Graduate School of Engineering, Nagoya University

- I participated in the Chubu Electric Backyard Tour. I felt that actually seeing business activities gave a greater understanding and fomented trust.
- You are currently focused on the younger generation in your environmental communication activities, but with the baby boomers approaching retirement, you should also bring the elderly into focus.







Bluebonnet Nagoya Port Wildflower Garden

## Social Performance

## Communication with Our Stakeholders

We are actively committed to helping build a sustainable society, while responding in good faith to the opinions and expectations we learn through communication with all of our stakeholders, including customers, shareholders and investors, the community, business partners, and employees.

#### **Communication tools**

We use several tools to provide information to our stakeholders, including immediate press releases, as well as booklets and pamphlets. We also post useful information for our stakeholders on our Websites.



Management **Environment** 



CSR Report This report summarizes our CSR activities in the fields of management and economy, the environment, and society.



This annual management plan summarizes our current management status and future targets, as well as specific challenges and initiatives for the fiscal year. Published annually



#### Eco Report

This pamphlet summarizes environmental issues, with a focus on combating global warming.

Published annually

**Corporate profiles Newsletters** 



Published annually Way (corporate profile) This booklet summarizes our corporate

profile in a easy-to-understand manner. It is also distributed to students with an interest in employment at Chubu Electric. SELECTION Published annually



Koryu (exchange) This cultural newsletter outlines topics on local communities and culture. Published twice a year



enchanté

This lifestyle newsletter has celebrity interviews. seasonal recipes, and information about environmentalism and energy

Published four times per vea

## **Financial information**





#### Annual Report This report summarizes the status of our company, with a focus on management and financial data. Published annually

Investors' Data Book 2005

Investors' Data Book This report presents histograms of business and financial data Published annually



http://www.chuden.co.ip/

link chuden https://link.chuden.ip/

## Customers

### Aiming at improving customer satisfaction

We are intensifying a wide range of initiatives aimed at offering services that meet our customers' satisfaction. Our telephone support centers and sales offices are in direct contact with our customers, and they strive to provide friendly and polite service, perform their duties quickly and accurately, and offer personalized services tailored to each customer's needs.

In addition to publishing information, we are doing our best to listen to our customers' feedback, and improve both our services and business processes. We are also committed to protecting our customers' privacy.

## Utilizing our Customer Response System

We share the valuable feedback received from our customers with all employees over our intranet by utilizing our Customer Response System.

We use this system to improve our business processes and services, in order to achieve an even higher level of customer satisfaction.

When our sales representatives receive feedback from a customer, either in person or via the telephone, they enter it in

#### **Customer Response System**



the system. The feedback is then examined in detail at cross-divisional discussion meetings and by division representatives and the results of our studies are swiftly reflected in improvements in our business processes and services. The status of feedback examinations is always accessible within the company, which helps respond quickly.

Using this system allows our employees learn about our customers' needs and opinions, as well as share the results of our studies and responses.

### Redesigning our Website

In October 2005, we completely overhauled our Customer Website with the aim of making it more accessible and easier to use.

We have created a new Website called "link chuden," which is different from our main site that contains our corporate profile and other information. Readers of "link chuden" can register to view specific information about the services we offer. The site offers information and services that meet our customers' needs, including useful lifestyle tips, informa-

Voice on Site: comments from a customer representative Helping our customers over the phone

**Misako Nomura,** Senior Staff Nagoya Call Center

The Nagoya Call Center provides customer support in our Nagoya and Shizuoka Office sales departments. My main responsibility is to take telephone requests from customers who want to start or discontinue electricity service. I also offer first-line support for a wide range of other issues.

As an employee, my mission is to serve as a liaison between our telephone service contractors and our sales offices, working closely with each. I communicate with both sides on a daily basis, so when the need arises I can deal with situations without conflict. tion about events and free gifts. Some examples of site content are recipes and household cleaning tips.

# Conducting a customer feedback survey

In addition to our Customer Response System, we conduct ongoing surveys asking customers questions such as what they want from Chubu Electric and their impression of our company.

The questionnaires, which target about 1,000 customers living in all prefectures in our service area, ask customers their impression of Chubu Electric Power, and their opinions and requests regarding electricity bills and all-electric homes.

In our survey conducted in September 2005, 75% of respondents said they wanted us to lower our electric bills, 44% said they wanted quick recovery from accidents and disasters, and 27% said they wanted our active commitment to the global environment, especially the reduction of CO2. We carefully analyze the results of these surveys with the help of outside experts, and reflect them in our sales activities on a company-wide basis.



When I am speaking on the phone, I can't see the customer's face, so I think it is vital to put myself in his or her shoes as much as possible. I believe that a single phone call can have a major impact, and I put 100% into every call. One time, although I thought I had only given the level of service anyone would expect, I received a thank-you letter. That really moved me. Naturally we share information about problems, but we also share when we are praised or receive thank-yous. That really motivates everyone at the center.

#### Customers

# Protecting our customers' privacy

As a company whose mission is public service, we have a vital responsibility to appropriately handle and protect personal information. We have always been committed to protecting personal information and managing it appropriately.

In April 2005, the Personal Information Protection Law went into effect. We have responded to it by establishing a basic policy to further ensure that personal information is handled appropriately, creating a privacy-protection regime and internal regulations, and educating all employees on privacy issues.

#### Creating a basic policy

In April 2005, we established a Basic Policy for Personal-Information Protection, which clarified our basic stance regarding privacy protection. Based on this policy, we declare our active commitment to protecting personal information, and publicize the purposes for collecting and storing personal information as well as information disclosure procedures.

#### URL http://www.chuden.co.jp/info/privacy/

# Establishing a company-wide privacy-protection regime

We have built a company-wide regime for protecting personal information. Under the leadership of a Privacy Manager who is appointed by our president, the general affairs division of our head office serves as the information-management oversight center. Furthermore, an information management section is established at each division, regional office, and business location, and an information management leader is appointed at each business location.

#### Creating internal regulations

We have created regulations for the handling of personal information, including the Personal Information Protection Regulations, which went into effect in April 2005.

Additionally, in response to recent cases of personal information leaks, we are committed to creating an environment for the appropriate handling of personal information, and provide thorough coverage of rules, including the improvement of computer security and the restrictions on removal of information from company grounds.

#### Privacy issues education

We are striving to further raise our employees' awareness of privacy and thoroughly educate them on related matters via our in-house newsletter, intranet, and e-learning courses on personal information protection. Additionally, all or our employees carry an information management pocketbook summarizing our internal regulations on information management at all times.

Information management regime

#### Preventing personal information leaks and their re-occurrence

Regrettably, in fiscal year 2005, there were 16 cases in which personal information was lost or stolen from our company.

We immediately apologized to the affected customers and explained the situation. We also made announcements to the press in order to prevent the damage from spreading.

We are also committed to appropriately managing personal information by making all employees aware of the specific situation at hand.



Information management pocketbook



## Shareholders and Investors

We are committed to ensuring a high level of transparency, enhancing twoway communications with our shareholders and investors, and gaining their trust by appropriately disclosing information in a timely manner through our investor relations (IR) activities.

## Shareholder makeup

As of March 31, 2006, we have a total of 347,931 shareholders; 38.2% of them are individuals, and 41.2% are financial institutions.

#### Shareholder makeup



## **Disclosing information**

We disclose information in accordance with the Securities and Exchange Law and other relevant regulations and ordinances, and the rules for timely disclosure stipulated by the stock exchanges where we are listed. We also actively publish information that we deem will be useful to our shareholders and investors via a wide range of IR tools, including our Websites.

We prepare not only brief financial statements, but also "About These Financial Statements" as a supplementary document to disclose financial information in an easier to understand format.

We also disclose information with an eye to the convenience of our shareholders and investors. In addition to our Annual Report, which includes the status of our company with a focus on management and financial information, we also publish "Investors' Data Book" containing our business and financial data in chronological order.

We also send our biannual business reports to all of our shareholders.

In order to give all shareholders and investors equal access to the information we disclose, we strive to publish the notes to our financial statements, annual reports, and other major publications and data simultaneously in Japanese and English.



# Communication with our shareholders and investors

We maintain a dialogue with our shareholders and investors by holding quarterly financial briefings and having our managers individually visit shareholders and investors both in Japan and abroad.

In order to deepen the understanding of our business activities, we also provide tours of our power stations and other facilities, and specially tailored company orientations targeting individual investors, women, and other specific groups.

We not only disclose our management and financial information on our Website, but also accept inquiries from shareholders and investors via email.

URL http://www.chuden.co.jp/inguiry/index.html



A company orientation for women held in Shizuoka

#### Main IR activities (FY2005)

Financial briefings	Tokyo: 4; Nagoya: 2
Small meetings	2
Individual meetings	119 (31)*1
Facility tours	7
Individual investor briefings	10
Exhibits at IR events	10

\*1 Figure in parentheses is the number of foreign financial investor visits.

## Evaluation by SRI rating agency

Our stock is one of the 150 stocks added to the Morningstar Socially Responsible Investment index (MS-SRI), a socially responsible investment (SRI) index by Morningstar Japan K.K.



Management and Economic Performance

# Local Communities

As a company whose businesses are based in the Chubu region of Japan, we emphasize two-way communication with the Chubu community. We work

# Contribution to Society

## Offering information services that benefit local safety

With the recent upsurge in children being victimized by crimes, day-to-day safety has become a key issue in the community. We leverage the facilities and technologies of Chubu Electric Power Group to help improve community safety.

## School parents' network, Kizuna Net

In December 2005, we began offering a service called Kizuna Net. This service makes it easy to send email to the mobile phones of parents and guardians of kindergarten, elementary school, junior high school, and other children. Thanks to this service, schools can contact registered parents quickly by sending urgent information, such as notices that their children are leaving school earlier upon the issuance of a heavy-rain or other warning, and information about suspicious individuals.

### Providing localized mobile information services with Poketchu!\*1

# Expanding the service area of Patonet Aichi

Since 2005, we have been operating an accident and crime information service called Patonet Aichi ("Patrol Net Aichi") jointly with the Aichi Prefectural Police Department. In January 2006, we actively to benefit the community, and implement a wide range of initiatives in partnership with community members. We will continue to work to earn the

expanded the service area from the city of Nagoya and its suburbs to all of Aichi Prefecture. This service uses Poketchu! to send information about accidents and incidents occurring in their vicinities via email to users' mobile phones. This service contributes to community safety by alerting residents to crime waves and other incidents.

# Emergency information in Nagoya

In April 2006, we began offering an emergency information service in partnership with the city of Nagoya. Using Poketchu!, this service sends an evacuation, evacuation preparation, and other orders issued by the city of Nagoya, as well as disaster prevention and other useful information regarding safety, via mobile-phone email.

\*1: A website we run that sends useful information to residents of Nagoya and the Tokai area via mobile phone.

### Kokodenchu, a mobile-phone positioning service using utility poles

We have begun trial operation of Kokodenchu, a service that provides positioning information, maps, and other data to users who connect their mobile phones to the Internet and enter the



Kokodenchu

trust of the community, and help build a sustainable community.

control number displayed on a utility pole. We plan to run this trial from February 2006 to March 2007. The service is available free of charge throughout our service area.

This service is useful when giving directions and checking one's location.

## Helping keep communities safe through safety patrols

In May 2004, our Okazaki Regional Office worked with our Group companies to form a Chubu Electric Group Safety Patrol Team consisting of all of our business locations in each regional office's area and our Group companies. The teams conduct safety patrols in the local community to prevent crimes. During commuting, the employees of Chubu and our Group companies often travel through the community, both by car and on foot. For this reason, they make an organized effort to assist in preventing crime by quickly reporting crimes, suspicious individuals, and other relevant information to the police. In March 2006, the city of Okazaki commended these efforts by presenting us with an award as a Community Safety Partner.

Additionally, our Kariya Sales Office, Kariya Electric Power Center, and Tobu Substation have been registered with the police as a Children's Emergency House: a place where children can take refuge in emergencies.

Another way in which we are helping to ensure community safety and environmental conservation the is a memorandum of understanding signed between the city of Toyota and our ToyotaKamo office in Aichi Prefecture to report road damage, illegal dumping, and other incidents.

## Opening our facilities to contribute to manufacturing and welfare for the community

## **MOT School**

In November 2005, our Group company, Chuden CTI Co., Ltd. opened the Nagoya campus of the Management of Technology (MOT) School at our Higashi-Sakura Kaikan Hall\*2 in collaboration with isupport Co., Ltd.

MOT's mission is to train managers who are highly versed in both management and technology. In the Chubu region, which is famed for artisanship and hands-on engineering, interest in such a school is high, and we believe that by offering our facilities for the study of management for manufacturing companies, we are contributing to the development of the local economy.

\*2: A hall built to commemorate the 50th anniversary of Chubu Electric Power's founding, with conference rooms, galleries, and a gymnasium, which are open to the public.

### Gardening welfare initiatives using "Bluebonnet"

In April 2002, we opened part of the green area of our Shin-Nagoya Thermal Power Station to the public as the Bluebonnet Nagoya Port Wildflower Gardens. This new open-air garden has become very popular with local residents. There are 22 separate gardens in the park, all themed on wildflowers, offering suggestions on how people can incorporate flowers into their lives. In fiscal year 2005, about 100,000 people visited the gardens for rest and relaxation. We are active in the field of gardening welfare. Our gardening welfare activities harness the power of flowers and greenery to lift people's spirits and contribute to people's health and well-being. Bluebonnet received many visitors from social welfare centers, and we partner with day-service centers and facilities for the challenged to offer gardening and gardening welfare specialist training courses, as well as to host symposiums and events.

Another way we are harnessing the power of flowers and greenery is our efforts to develop health-promoting communities. We are working in partnership with local governments, social-welfare organizations, universities, private companies, NPOs, and others to expand our activities throughout Aichi Prefecture.



A flower arrangement class in partnership with a day-service center

## Partnerships with universities aimed at making multifaceted contributions in technology and other fields

### Industrial-academic collaboration agreement with Mie University

In September 2005, we signed a framework cooperation agreement with Mie University. The aim of this agreement is to contribute to the sustainable development of local communities by expanding our research collaboration with the university, currently mainly in the science and engineering fields of energy and the environment, into a wider

range of fields, including the arts and humanities.

We will further collaborate with the university in various areas by participating in the Mie University Cultural Forum and jointly researching wind power generation, while holding consultative meetings to decide in detail the areas for collaboration.

### Collaboration with Nagoya University's Ecotopia Science Institute

In October 2004, our Research & Development Division and Nagoya University's Ecotopia Science Institute signed a collaboration agreement for research and development with the aim of enhancing and accelerating each other's R&D efforts, and helping to develop researchers and engineers. Through this agreement, we have collaborated on a number of joint research and other projects. Management and Economic Performance

Environmental Performance

In fiscal year 2005, we conducted seven projects, including joint research and technical guidance.

## Activities of the "Fairy Lights Club"

The Club was organized in November 1991 as a part of our social contribution activities, and is open to all employees. It is engaged in a diversity of volunteer activities.

Since its organization, the Club has done volunteer work in areas affected by disasters and taken part in clean-up campaigns in the vicinity of our business locations as well as public facilities. In fiscal year 2005, many of our employees were involved in volunteer activities on the site of EXPO 2005 Aichi Japan. Local Communities

# The Leaders of Tomorrow

The future of a community depends on its children. Using our facilities, we provide a wide range of education and support programs relating to the environment and energy, in order to get children interested in environmental and energy issues, and encourage them to act.

## Traveling classroom

In response to requests from elementary and junior high schools, we send our employees to schools to hold classes devoted to electricity experiments, and on the environment and energy.

• Number of classes: 687 for 25,462 students (actual, FY2005)



Traveling classroom devoted to electricity experiment at Tokoname-Nishi Primary School

# Tours of workplaces and facilities

In response to requests from elementary and junior high schools, we conduct tours of sales offices, power stations, and other facilities.

Number of tours:

240 for 4,061 students (actual, FY2005)

# Tour of PR exhibition facilities

We have exhibition facilities where children can enjoy learning about the environment, energy, and science. These facilities are open to all the community members.



Children studying science at the Science Museum of Electricity

URL

Information on PR exhibition facilities http://www.chuden.co.jp/manabu/pr/index.html

Major PR exhibition and community-partnership facilities

# Electric Kids Series, wall posters

Ever since our founding in 1951, we have issued wall posters that focus on the hows and whys of science to help instill children with a scientific curiosity. Each year, we deliver 10 different posters to about 3,400 locations in our service area, including elementary schools and libraries.



(As of the end of May 2006)

Facility Names	Address and Phone Number	Hours Open to the Public	Days Closed
Science Museum of Electricity	2-2-5 Sakae, Naka-ku, Nagoya-shi, Aichi- ken 460-0008, Phone: +81-52-201-1026	9:30 a.m. – 5:30 p.m.	Mondays (if a holiday falls on a Monday, closed on Tuesday), third Friday of every month, year-end and New Year's holi- days (except spring and summer holi- days)
Hamaoka Nuclear Exhibition Hall	5561 Sakura, Omaezaki-shi, Shizuoka-ken 437-1695, Phone: +81-537-85-2424	9:00 a.m. – 5:00 p.m.	Third Monday of every month (if a holi- day falls on a Monday, closed on Tues- day), year-end and New Year's holidays
Kawagoe Electricity Museum "Terra 46"	87-1 Asaake, Kamezaki-Shinden, Kawagoe- machi, Mie-gun, Mie-ken 510-8587, Phone: +81-593-63-6565	9:00 a.m. – 4:40 p.m.	Mondays (if a holiday falls on a Monday, closed on Tuesday), third Friday of every month, year-end and New Year's holi- days
<b>"Hekinan Tantopia"</b> (Electricity Museum, Healing Garden, Eco Park)	2-8-2 Konan-machi, Hekinan-shi Aichi-ken 447-0824, Phone: +81-566-41-8500	9:30 a.m. – 5:00 p.m.* <sup>1</sup>	Mondays (if a holiday falls on a Monday, closed on Tuesday), year-end and New Year's holidays
Chita Electricity Museum	23 Kitahama-cho, Chita-shi, Aichi-ken 478-0046, Phone: +81-562-55-8311	9:00 a.m. – 4:30 p.m.	Mondays (if a holiday falls on a Monday, closed on Tuesday), year-end and New Year's holidays
"Bluebonnet" Nagoya Port Wildflower Garden* <sup>2</sup>	42 Shiomi-cho, Minato-ku, Nagoya-shi, Aichi-ken 455-0028, Phone: +81-52-613-1187	9:30 a.m. – 5:00 p.m.* <sup>3</sup>	Mondays (if a holiday falls on a Monday, closed on Tuesday), Marine Day, De- cember 24, December 27 to the end of February

<sup>\*1:</sup> Entrance to the Healing Garden and Eco Park ends at 4:00 PM.

\*2: Admission • Adults: 300 yen • 65 and older: 200 yen • Elementary/Middle school students: 150 yen • 6 and under No charge • Handicapped: 200 yen (10% discount for groups of 30 or more)

\*3: Varies according to season

#### TOPICS 2005

#### Collaboration with Aichi University of Education

In March 2006, we gave a seminar on teaching elementary-school children in collaboration with the Aichi University of Education at the Science Museum of Electricity, one of our PR exhibition facilities.

The university has introduced this seminar into its curriculum to improve students' practical classroom management skills. In the seminar, students taught classes using innovative teaching techniques under the guidance of several instructors.

This was the first time Aichi University of Education has given academic credits for a teacher-training course held at the PR exhibition facilities of a private company.

### Friends of Ergon, a science club for 3-6 graders

We operate a free, members-only club called "Friends of Ergon" for elementary school pupils in grades 3 – 6, to stimulate their interest in science and energy. We regularly send the members copies of the newsletter "Ergon" containing information on the latest scientific developments. We also hold club events in various places, focusing on themes such as electricity, energy, and the environment. • Club membership: 13,000

(as of the end of March 2006)

To join, access the following website.

```
URL
https://link.chuden.jp/kids/erugon/index.asp
```



Denjiro Yonemura's Fun Experiment Lab



Atsunori Noda, professor Aichi University of Education

The teaching seminar at one of the Chubu Electric Power's PR exhibition facilities was very exciting. The students taught with passion in a workshop format, using hand-made experiment kits and games themed on electricity and energy.

I think that this collaboration between the university and a private company was an excellent opportunity to develop teachers full of human charisma and energy.

#### Our rugby club coaches junior and senior high school students

Since 1996, our rugby club has invited local high-school rugby team members every year to provide technical guidance and go through workouts together as part of friendship and exchange events.

Few Japanese high schools have genuine turf-covered rugby fields to practice on. We continue holding this event to give high school students the opportunity to learn advanced techniques and experience the fun of rugby first-hand, through interaction with adult athletes in a positive environment.

In April 2006, we invited about 150 members of rugby teams from four Aichi



Teaching technique to local high-school rugby players

high schools to our Nisshin General Athletic Field, where our rugby club conducted a workshop and held practice matches. We also actively support the development of future local athletes. In fiscal year 2005, we began holding a Rugby School, which teaches rugby about twice a month to about 40 junior high-school students each time.

### Activities of the Chubu Educational Advancement Foundation

We established this foundation in June 2001 with the aim of helping the generation of children that will lead Japan in the 21st century to be physically, mentally, and emotionally healthy and sound.

We presented the Chuden Educational Grant worth a total of 14,850,000 yen and the Chuden Educational Awards for essays on educational achievements to 46 and 6 elementary and junior high schools nationwide, respectively. We also awarded 70 elementary school children in the Recycling Craft Contest and 4 outstanding writers with the Chuden children's Literature Awards in a nationwide contest. In addition, we held the Children's Picture Book Exhibition as part of our cultural and artistic activities. Note: Figures in parentheses indicate actual performance of FY2005.

4th Chuden Educational Award ceremony

URL

Chubu Educational Advancement Foundation Tel: +81-52-932-1741

http://www.chuden-edu.or.jp/

## **Business Partners**

We are committed to building a solid foundation of trust with our business partners through communication as well as fair and honest dealings, and carrying out CSR procurement activities in partnership with our business partners.

## **Basic procurement policy**

We have created a new basic procurement policy in order to give greater consideration to CSR during procurement. Our future procurement activities will be based on this policy.

# In partnership with our business partners

We consider our business partners as important partners that are aiming to develop and grow with us. We are also committed to fomenting a relationship of trust with our business partners, strengthening our partnerships, and collaboratively fulfilling our corporate social responsibility. For this reason, in addition to our own initiatives, we ask all of our business partners to practice the following six items after they have understood our basic procurement policy.

#### What we ask of our partners

- 1. Total Compliance
- 2. Safety Assurance
- 3. Mitigate Environmental Burden
- 4. Endeavor to Cut Costs
- 5. Maintain and Improve Quality and Provide Good Service
- 6. Work in Partnership

### **Basic Procurement Policy**

#### 1. Total Compliance

- We perform our work duties in strict compliance with all laws, rules and corporate ethics.
- We practice respect for human rights (prohibit child labor and forced and compulsory labor, avoid discrimination, etc.), carefully manage personal and confidential information, protect intellectual property rights, and so on.
- 2. Safety Assurance
- Understanding that safety takes priority over all else, we endeavor to prevent occupational accidents and injuries and ensure public health and safety.
- 3. Mitigate Environmental Burden
- Cooperating with our suppliers, we work to mitigate environmental burden by practicing green procurement, among other measures, and help to build and establish a recycling society.
- 4. Open Door Policy
- We provide access to both Japanese and foreign companies, based on our open door policy, so that we may do business with suppliers with superior technical expertise who can provide quality products and satisfactory service.
- 5. Fair and Honest Procurement
- We transact fair and honest business in the procurement of materials, equipment and so on, basing our decisions on economic rationality while assessing each supplier comprehensively for its prices, product quality, performance, safety, ability to meet delivery and construction deadlines, after-sale service, technical expertise, production capacity, business administration, safety management system and stance on corporate social responsibility (CSR), among others.
- 6. Work in Partnership
- At Chubu Electric, we regard each of our suppliers as an important partner with whom we seek mutual growth.
- Through open communication and fair and sincere transactions with our partner suppliers, we form stronger trust-based relationships and seek to cooperate with our suppliers to contribute to the sustainable development of society.

# Point of contact for purchasing materials

We have established a point of contact in our head-office procurement division, where business partners can consult with us about parts and materials transactions in general. The aim of this point of contact is to enhance the communication with our partners.

Please see Information on Procurement of Parts and Materials on our Website for details.

URL http://www.chuden.co.jp/corpo/shizai/ index.html



Meeting with our business partner at our head-office procurement division

## **Employees**

We employ a diversity of people in consideration for equal opportunity as well as individual capability and aptitude. We also strive to create a corporate culture that enables each of our employees to fully exercise his or her skills.

We have constructed an employment system aimed at harmony with the home and community, and offer support so each of our employees can work with peace of mind.

## Employment and Labor-Management Relations

### Respect for human rights

We are aiming at creating a corporate culture that tolerates absolutely no discrimination on the basis of sex, belief, physical conditions, social standing, or any other such attributes by deepening our employees' understanding of human rights.

For this reason, we strive to clarify our stance regarding respect for human rights through our CSR Declaration, Eight Action Guidelines on Compliance, and the like. As a part of our initiative to raise awareness of the importance of human rights, we provide in-house training on such human-rights issues as the Dowa issue (social discrimination based on ancestry) and sexual harassment, and we also actively utilize outside training.

We will continue to raise awareness as we work toward a future free of discrimination and respecting human rights.

## Open recruitment system

In April 2002, we established an open recruitment system allowing highly motivated employees to demonstrate their talents in new business fields.

In order to transfer our employees based on their desires and initiative, we implemented this system for the transfer to the sales field in February 2003, and to other divisions in April 2004.

As of the end of fiscal year 2005, there had been 540 applicants, and 260 of them had been transferred to other divisions.

# Employment of the challenged

We are actively committed to hiring challenged individuals, and support the independence of the challenged in society.

Group company Chuden Wing Co., Ltd. started business in April 2003. This company opens new employment opportunities for the challenged, and is certified as an "exceptional subsidiary"\*1. The 32 challenged\*2 employees and 12 other staff combine their capabilities in such businesses as design and printing, sales of novelties and gifts, gardening, and document delivery.

At Expo 2005 Aichi Japan, challenged employees at Chuden Wing were in charge of planting the flower garden in front of the Wonder Circus – Electric Power Pavilion (the exhibit of the Federation of Electric Power Companies of Japan). They delighted visitors to the pavilion during the expo, watering the garden under the hot summer sun, replanting, and doing other work.

As of 1 June 2006, our challenged employment rate is 1.82% including



Challenged employees at Chuden Wing work on the flower garden in front of Wonder Circus – Electric Power Pavilion

Chuden Wing. This meets the legally required proportion of 1.8%.

\*1: Exceptional subsidiary: The employees of subsidiaries incorporated with special consideration for hiring challenged individuals can be considered employees of the parent company for purposes of legal hiring requirements, if they meet certain criteria. Such subsidiaries are called "exceptional subsidiaries."

# Creation of a sound corporate culture

We established a personnel counseling service for resolution of problems faced by employees in the office as well as employment-related questions and worries.

Similarly, to eradicate sexual harassment, eliminate gender bias, and respond to these issues, we are providing educational programs on these subjects to all employees and trying to raise awareness through our intra-net. We have also established internal and external contacts for consultation.

In addition, we are attempting to create a sound corporate culture imbued with mutual respect for the person, dignity, and privacy of employees as individuals. We are also making efforts to prepare a safe and pleasant work environment for our employees.

# Establishment of favorable labor-management relations

In accordance with a labor agreement, all of our employees join the Chubu Electric Power Labor Union, except those representing the corporate interest, under the union system.

The labor and management sides engage as equals in collective negotiation on matters such as working conditions and annual bonuses. They also confer on matters related to business operations in a timely manner.

<sup>\*2:</sup> Challenged: This term refers to individuals born with physical or mental challenges.

#### Employees

We hold meetings to allow free exchange of ideas between our executives and the labor union on subjects such as management policy, in order to maintain ties of mutual understanding and communication in every layer of the organization.

At the end of March 2004, we created an action program for proper management of working hours and efficient execution of business, and declared our commitment to the same. Labor and management worked together to ensure working hours were properly managed in the implementation of our measures, and to make our company an even better place to work at, in accordance with this action plan.

## **Employment of women**

We have expanded the scope of employment for women. We have assigned female employees to positions in operation and maintenance of facilities in the Electrical Engineering, Distribution, and Thermal Power divisions, and also employ them in shift work and night service.

As of end-fiscal year 2005, 1,532 of our 16,245 employees (9.4%) are

women, and we have 54 female employees in leadership positions.

We are also actively committed to achieving the targets of our five-year General Business Action Plan (April 2005 to March 2010), in accordance with the Basic Law for a Gender-Equal Society and the Law to Promote Measures to Support Fostering Next-Generation Youths.

### Support schemes for post-retirement employment

In April 2004, we instituted a scheme for post-retirement employment named "Second Life Challenge." The object is to assist employees in their endeavors to find new work or go into business after age 60.

In addition to giving employees 60 and over introductory training as an opportunity to think about their life plans, we also offer subsidies to attend training and classes outside the company, as well as leave to attend educational institutions.

As of end-fiscal 2005, about 630 employees have utilized this scheme (number of employees taking training courses).

Voice on Site: Comments from a female employee in a management position

# A great place to work is a place where people talk to each other

#### Yukie Hirai, Assistant Manager

Billing & Collections Section, Hamamatsu Customer Service Office (currently Manager, Customer Service Section, Shimada Customer Service Office)

The section where I work handles electricity bills. I have a front-row view of how our customers feel. Every day, we get feedback from customers that makes us happy, and feedback that makes us reflect on our actions as well.

In my work, I strive to guide subordinates in the following two ways. The first is to recognize and be grateful that our customer has subscribed with us. The second is an attitude of wanting to serve our customers – giving that little something extra. Naturally, the most important part of our jobs is to perform our work accurately. I believe that the attitude of each individual, grounded in this requirement, is vital for making this a great place to work.

I think that a great place to work is a place where people talk to each other. I believe that going out of my way to speak to my subordinates and obtaining information from "down in the trenches" will lead to good communication.

I give 100% to make sure that come rain or wind, we see smiling customer faces at our workplace.

# Employment of senior citizens

In April 2002, we established a system for the rehiring of employees who have reached the age of mandatory retirement as "senior staff" in order to make broad use of their knowledge, skills, and experience.

In April 2006, we revised this system in order to more actively utilize the resources offered by senior citizens. Under the new system, we seek to employ senior staff in positions requiring high levels of expert knowledge and skills, a certain level of experience, and jobs with set duties. As of end of fiscal year 2005, we employ 99 senior staff in various positions.

# Human resource development

# Basic human-resource development policy

Our education program aims to maximize the value of our human resources in a comprehensive manner, in order to out-perform our competitors in the energy business, and enable our sustained growth over the middle- to long-term.





# Introducing voluntary target management program

In April 2003, we introduced a framework based on a voluntary target-management program into our human resources and wage system. The aim of the framework is for each employee to set ambitious targets, in order to harness the motivation and autonomy of each employee and compensate employees based on performance.

Under this program, employees set their own targets, and work to achieve them with the support of their superiors. Employees set challenging individual targets after discussion with their superiors, based on the targets and policies of their divisions and places of work. The program employs a self-reporting system. Superiors evaluate their subordinates' performance at the end of each period, interviewing each subordinate and evaluating performance based on results, attitude, and the degree to which the employee harnessed his or her capabilities.

In the evaluation of skills and suitability, superiors set targets for skill development after interviewing the subordinate, based on the subordinate's self-reporting. The superior then checks the employee's status each half-year, and provides appropriate guidance and advice.

# Creating a cheerful and motivating workplace

## Balancing work and personal life

In October 2005, we revised our work system, introducing a planned holiday and designated work program. The aim of this program is to specify flexible work days and working hours, based on the individual's preferences and in keeping with the work situation, enhancing both our ability to plan the execution of work and employees' home lives.

# Support for balancing child rearing with work

We provide support to help our employees balance childcare with their jobs. Our childcare leave program allows employees to take leave until their child reaches the age of 18 months, or the last day of the fiscal year in which the child turns one year of age, whichever is later. We also have a shortened working-hour program that is available to employees until the last day of the fiscal year in which their child turns six years of age.

# Enhancement of long-term care/nursing care leave

Our long-term care/nursing care leave program allows employees to take up to two years of leave if they must provide long-term or nursing care to a family member. This program is also designed to alleviate the financial burden on employees providing long-term and nursing care by paying a portion of the employee's salary while he or she is taking leave under this program.

# Enhancement of personal support leave

We support active efforts by our employees to fulfill their roles as members of their families and communities. Our personal support leave program allows employees to take leave to recover from an injury or illness, nurse a sick or injured child, volunteer, register as a donor, obtain an official certification or otherwise advance their education and qualifications, or for other personal reasons.

# Conducting employee satisfaction surveys

We conduct employee-satisfaction surveys as a mechanism to get feedback from our employees.

We use these surveys – chiefly questionnaires given to students of our Human Resources Development Center training courses – to find out such things as what our employees think of their work, their awareness of management issues and the like, and the state of communication in the company.

The results of surveys we have conducted to date show that employee satisfaction is improving, including in terms of management policy focused on social responsibility, and workplaces that give consideration to fostering active communication and dialogue.

We plan to take greater advantage of this system, expanding the questions on our surveys and further analyzing and studying their results.

# Facilitating communication through internal newsletters

We publish a monthly internal newsletter called Human Energy. The newsletter's goal is to communicate information about our management and important company policies in a detailed and understandable format.

The newsletter decreases the distance between management and the workplace, and also serves as an important communication tool for improving motivation, by showcasing strong commitments by management and employees to resolving management challenges from a wide range of perspectives.

# External Feedback

We have had an outside party evaluate our CSR initiatives from a third-party perspective. We take the opinions and suggestions we have received very seriously, and are committed to further improving the initiatives that received high marks, and take appropriate measures to remedy initiatives where room for improvement was found.

# Sustainable Management Rating

We have received a sustainable management rating by the Sustainable Management Rating Institute of the NPO Sustainable Management Forum of Japan.

We were rated along 21 axes in each of the fields of Management, Environment, and Society, from the perspective of how our initiatives were contributing to the creation of a sustainable society.

The evaluation showed that our initiatives already met many of the criteria for sustainability, and also showed that there had been improvement in our CSR procurement and measures against soil pollution, which had been found lacking in the previous fiscal year. Main findings

- Our progress toward our target to reduce greenhouse gas emissions has been insufficient.
- The fact that we have created a basic policy for strategic initiatives for preventing soil pollution is laudable, but procedures have yet to be documented.
- Group-wide commitment is lacking in some areas.
- Regarding corporate governance, we do not appoint outside directors as a measure to guarantee the independence of management supervision.

#### Our views

Regarding the finding that we do not appoint outside directors, we expressed the view that we assured the fairness and transparency of management through such means as the appointment of outside auditors and the creation of the Chubu Electric Power Advisory Board, consisting of outside experts and opinion leaders.



Fair Note: Each of the 21 evaluation criteria is evaluated in three stages: strategy, framework, and results, for a total of 63 items; the evaluation expressed as a tree, with the directions and colors of the leaves representing the stages/ratings. The deeper the shade of No leaf Does not apply green, the higher the level of accomplishment is.

#### Sustainable management tree

# Stakeholder Dialogues

Maintaining a dialogue with our many stakeholders is vital for increasing community members' understanding of our commitment to the environment, and utilizing their feedback in our future environmental management.

In February 2006, we held our second Stakeholder Dialogue, attended by 20 people, including people from environment-related NPOs in the Nagoya area and its suburbs and corporate environmental representatives. The theme of the dialogue was what Chubu Electric needs to do in order to spread its environmental education to families and communities. Under the coordination of Masayo Kishida, president of the Partnership Support Center, the members split up into three groups for group discussions, after which we joined in with the members in an active discussion.

#### Views on environmental education

- Partnerships with NPOs, community members, and local governments are needed in order to expand human resources and collaborate more closely with the community.
- Why don't you create a human-resource bank for environmental education and make it available to the communities?
- You need to avoid using difficult terms, encourage people to take notice, and emphasize action over theory.
- You should encourage changes to the way people think, and leverage the hidden potential of all employees in the communities.
- Is the Environment Department respected in the company? When the people providing environmental education become heroes, the activities will grow.
- You need to conduct initiatives in partnership with other companies.
- Chubu Electric has many different activities and programs. If you could bring all of these together under a single brand, you should be able to improve their level of recognition.
- How about an Environmental Skills Exam to certify people involved in environmental knowledge and activities?



## Consumer life advisors Consumer life consultants

We administered a questionnaire to consumer life advisors and consumer life consultants, asking them their impressions, opinions, and suggestions regarding our 2005 Annual Environmental Report. We used the feedback we received from them to improve our Chubu Electric 2006 CSR Report (this document).

Some feedback we received and our response

• The expansion of your report from the environment to include the economic and social fields shows your company's desire to build good relationships with your stakeholders.

Starting this fiscal year, we have expanded and enhanced our content in the fields of management, economy, and society through the Chubu Electric 2006 CSR Report

• The Action Plan in your environmental report is very concrete and easy to understand.

We will continue to strive to make it easier to understand, based on the list format we have used to date.

- Some improvements are needed. There are too many pages, and much of the content is too technical for general readers.
   We designed the report to be more readable, reducing the number of pages and also trying to balance text with images and graphics.
- You should add more content on nuclear power and disposal of radioactive waste.

We have added more content relating to nuclear power, including content relating to the pluthermal program and other new trends.

 I think there should be stakeholder comments for each item. In our social report, we described the breakdown of each stakeholder group, and reported our initiatives in the form of responses to expectations of Chubu Electric Power.

## Third-party Views

In order to make our CSR report more readable, we had three consumer life advisors check the terminology, language, graphics, and other aspects of our 2006 Chubu Electric CSR Report.

#### Remarks on 2006 CSR Report

Most consumers probably still do not know what the term "CSR" means. I feel, however, that the idea of evaluating companies not just by their efforts for their customers, but also by their efforts for their communities, society, and the global environment is beginning to take root. Our basic expectation of CSR is that companies utilize their businesses to contribute to a sustainable society.

This report's content has been expanded from that of a traditional annual environmental report to a CSR report. You have published a CSR Declaration, and reported on your CSR in relation to a wide range of stakeholders.

I greatly approve of your clear statement of your commitment to fulfill your responsibilities in response to society's expectations of you as a total energy supplier. Some of your concrete initiatives are introduced as "People and Technology Initiatives for CSR," showing Chubu Electric Power's plans for CSR. In your fiscal 2005 highlights, the articles about individual employees working with dedication while remaining environmentally conscious and valuing communication with customers left an impression on me. I believe that CSR is not something that a company carries out as an enterprise; it depends on the awareness of each employee making up that enterprise.

I also rate highly your demonstrated desire to grasp the needs and issues of society. In your social report, you reported on a great many initiatives aimed at ensuring community safety, including starting such services as Kizuna Net and Poketchu. We have reached a time when the power of communities is being focused on in many ways. There are high expectations on companies to harness their unique features to benefit local communities, and I feel this will grow even more important. We also must not forget that openness is the key for local communities to be friendly toward a company and feel secure about it.

Although your environmental report states that reducing CO2 emissions per base unit is one of your missions, your reduction was only slight. I think dealing with this issue will be one of your greatest challenges. There are expectations for the creation of more environmental technologies to help prevent global warming. As our lifestyles come to take energy conservation for granted, I see difficulties in how the energy-supply business can advance while remaining environmentally aware. You should clearly state your policies and plans in this respect.



Consumer life advisors discuss the CSR report with our editorial board

A greater level of information disclosure is needed about ensuring the safety and security of nuclear power. Your visits to local homes to explain your pluthermal program and other efforts show that you are taking this matter seriously, but I believe that continued sincere and honest statements will lead to community understanding. Your active commitments to lowering electricity rates, quickly recovering from power outages, resolving global environmental issues, and the like should also respond sincerely to a wide range of opinion.

Most consumers almost never visit a Chubu Electric Power sales office in person, even though they use your electricity 24 hours a day. Even with the liberalization of electric power, you are still a special type of company, and consumers still do not have many choices. For this reason in particular, I think that a CSR report should be understandable to whoever picks it up. That is why I state my views very frankly on things like technical terms, foreign words, and hard-to-read layouts. Please make readability a constant goal. When I pick up a report, I don't just want to read about what you have done. I want to learn new things from it, learn things I wanted to know, and become motivated to act myself.

It is my hope that this CSR Report will serve as a good communication tool, and that you continue to expand your contributions to society by matching Chubu Electric's concept and practice of CSR with your stakeholders' expectations of Chubu Electric for CSR.

> Consumer life advisors Nahomi Kojyo Yasuko Hanai Noriko Mizuno

#### **GRI** Guideline Content Index

This report was prepared with reference to the 2002 Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI). The table to the right shows the pages corresponding to each section in the guidelines.

A more detailed reference table is available for download from our Corporate Website.

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URL



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