Environment

By improving the quality of our environmental management, we endeavor to reduce society's impact on the environment through our business operations and social contribution activities.

Material Issue 3 **Initiatives to Conserve the Global Environment**

With the aim of realizing a low-carbon, recycling-oriented society and achieving biodiversity, KDDI is moving forward with the initiatives "Green of ICT" (reducing the environmental impact of ICT equipment), "Green by ICT" (reducing the environmental impact of society through the use of ICT), and the "Green with customers and employees (Road Project)" (environmental preservation activities in cooperation with customers and employees).

Environmental Management

KDDI Environmental Charter

Manifesto

The KDDI Group recognizes the importance of fulfilling its duty as a responsible global corporate citizen to conserve and protect the Earth's irreplaceable environment so that it can be inherited by future generations. We are committed to pursuing our business in eco-conscious ways, through programs of activities that span the entire company.

Environmental Management Structure

The KDDI Group has formed the KDDI CSR & Environment Committee, comprising members from each division, branch, Group company, and related organization. This committee serves as the center for formulating KDDI's environmental management system and promoting efficient environmental preservation activities throughout the Group. KDDI has acquired international ISO 14001 certification for this management system, which covered KDDI and 21 Group companies as the end of FY2011 (targeting 193 sites and approximately 46,200 people).

Internal Environmental Audits

KDDI conducts internal environmental audits once each year. In these audits, each department is provided with a checklist and asked to evaluate itself, and internal environmental auditors perform a second check on the state of conformity with environmental legislation. In addition, these audits confirm the results of environmental activities and verify the functioning of the system for ongoing improvements.

Appropriate Processing of PCBs

KDDI ensures that transistors, capacitors, and other components that previously included high-concentration polychlorinated biphenyls (PCBs) are disposed of properly in accordance with legislation and the Company's internal processing regulations. This processing is slated for completion in FY2011 through FY2013.

Overview of the Second Medium-term Environmental Conservation Plan

In 2007, KDDI formulated its second Medium-term Environmental Conservation Plan (FY2007 through FY2011), and has achieved all the plan's objectives. With regard to global warming countermeasures, in the category of telecommunication facilities—which accounts for around 98% of the Company's electric power consumption—we developed electricity-saving base stations and introduced slimmer networks to reduce electricity use. As we augment equipment in response to customers' needs, reducing our total consumption of electricity remains problematic. However, energy conservation is an important priority, and we are moving forward with a number of initiatives to reach this goal. Concerning waste reduction and promotion of recycling, we collaborated with an outsourcing company to promote material recycling and worked to reduce final processing waste. To improve our quality of environmental management, we strove to raise employee awareness through education and by conducting internal environmental audits.

We also have formulated the Third Medium-term Environmental Conservation Plan, which goes into FY2012. In accordance with this plan, we will work proactively on sustained initiatives to conserve the global environment.

Results of the Second Medium-term Environmental Conservation Plan

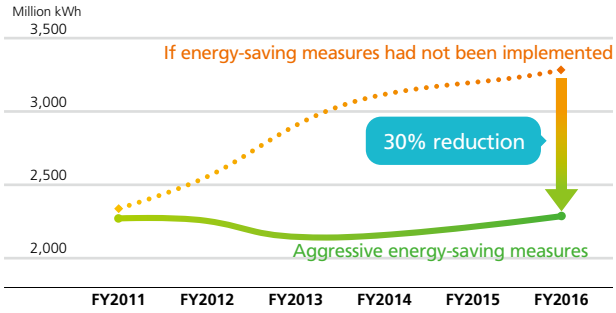
Area of Activities		Targets	Results	Evaluation
1. Global warming countermeasures	CO_2 emissions	1.52 million t	1,218,658.6t	○
2. Waste reduction and promotion of recycling	Resource recycling ratio for retired telecommunication facilities	99%	99.0%	○
	Resource recycling ratio for mobile phones	99%	99.7%	○
	Resource recycling ratio for office waste	70%	77.2%	○
3. Improving the quality of environmental management	Compliance assessments	—	Enhanced internal audits	○
	Enhanced internal environmental audits	—	Conduct e-learning at least once per year	○

Third Medium-term Environmental Conservation Plan
Formulation of the "KDDI GREEN PLAN 2012–2016"

As its new five-year environmental preservation plan beginning in FY2012, KDDI has formulated the "KDDI GREEN PLAN 2012–2016," its third Medium-term Environmental Conservation Plan. This plan introduces three priority issues, "low-carbon society," "recycling-oriented society," and "biodiversity," and sets specific targets for each. To reach these goals, we are promoting 3G Actions ("Green of ICT," "Green by ICT," and "Green with customers and employees (Green Road Project)") to enhance our contribution to environmental preservation.

1 Goals Targeting the Realization of a Low-carbon Society

- By FY2016, we aim to reduce electric power consumption by 30%, compared with the level if energy-saving measures had not been implemented.



- By FY2016, reduce electric power consumption per subscriber by 15%, compared with FY2011.
- By the end of FY2012, increase the number of tribrid base stations* to 100.

* These au mobile phone base stations control three kinds of electric power—power generated by solar panels, power saved in charged storage batteries, and power supplied by power companies—and provide power to base stations in the most efficient way at the time it is used.

2 Goals Targeting the Realization of a Recycling-Oriented Society

- Achieve zero emissions*1 for retired telecommunication facilities.
- Achieve material recycling*2 ratio of 99.8% or more for used mobile phone handsets.
- Achieve a material recycling ratio for general waste of 90% or more at KDDI-owned buildings and in the headquarters building.

*1 "Zero emissions" is defined as a final processing ratio of 1% or less.
*2 Conduct solution processing of waste and other methods to convert waste to reusable resources.

3 Goals for Preserving Biodiversity

- Pursue activities based on our action guidelines for preservation of biodiversity.

KDDI Action Guidelines on the Preservation of Diversity

1. **Practice Preservation in Business Activities**
   When formulating business plans, consider the impact that these plans will have on related ecosystems and local communities.
2. **Form Alliances and Cooperate with Related Organizations**
   Form alliances and further cooperation with government organizations, NPOs, and the like, incorporating social contribution activities into ICT.
3. **Promote Resource Recycling**
   Continue with resource recycling and take part in proactive measures to prevent the depletion of biological resources and curtail degradation of the natural environment.
4. **Create a Society that Cultivates Biodiversity**
   Educate employees on the natural environment and cultivate an awareness of biodiversity throughout society as a whole.

Specific Measures Involving 3G Action

3G Action	Issues for Response	Sample Initiative
Green of ICT	Low-carbon society	Building and construction of energy-saving telecommunication facilities, promotion of green procurement
	Recycling-oriented society	Reuse of retired telecommunication facilities, promotion of recycling
Green by ICT	Low-carbon society	Provide teleworking system, promote smart communities
	Biodiversity	Contribute to the preservation of living things through the application of communications technologies
Green with customers and employees (Green Road Project)	Recycling-oriented society	Recycle mobile phones and operation manuals
	Biodiversity	Walk project, forecast conservation activities by employees and their families

Environmental Impact of Business Activities

Of KDDI's business activities, environmental impact is the highest in terms of the CO_2 emitted through the use of electricity in electrical telecommunication facilities and in the industrial waste generated during equipment upgrades. We are working to quantify and reduce these environmental impacts. From the standpoint of using resources effectively, the recycling of used mobile phone handsets is also seen as a priority.

In FY2011, we surveyed KDDI-owned buildings for the use of blown asbestos and confirmed its use in one base station. We plan complete removal of this asbestos by September 30, 2012.

Figures for "effect of environmental conservation (materials)" and "emissions of global warming gas (t-CO_2)" have been retroactively updated dating back to FY2012, to reflect changes in calculation methods.

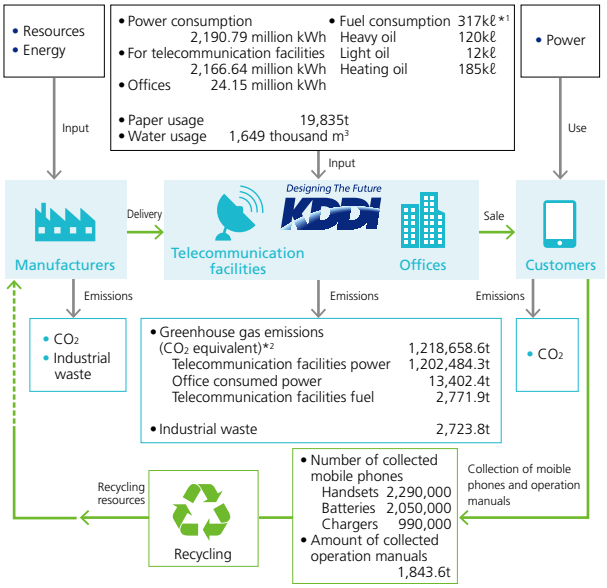
Environmental Accounting

Our environmental investments during FY2011, totaled approximately ¥24.8 billion. This expenditure was related to the installation of wireless equipment, which requires less energy than previous equipment, at 6,492 mobile phone base stations.

Having revised the way we calculate greenhouse gas emissions (t-CO_2) related to the effects (volume) on the environmental, we have revised fiscal 2010 figures retroactively.

Environmental Impact of FY2011 Business Activities

Coverage: KDDI (KDDI non consolidated)



*1 Crude oil equivalent. Used for air conditioning of telecommunication facilities and for emergency generators.

*2 CO_2 emissions are calculated using a conversion coefficient of 0.555 kg-CO_2/kWh for the power consumption and the emission coefficients for fuel consumption applied to the calculation, reporting, and disclosure systems based on the "Act on Promotion of Global Warming Countermeasures."

Coverage: KDDI and 10 major consolidated subsidiaries* Period: April 1, 2011 to March 31, 2012

Environmental Protection Costs		Transaction Examples	FY2011 (Millions of Yen)		FY2010 (Millions of Yen)		Change from Previous Year (Millions of Yen)	
			Investment	Cost	Investment	Cost	Investment	Cost
Business area costs	Pollution prevention costs	Pollution prevention costs stipulated by law, costs for proper disposal of PCBs, etc.	0	104	0	0	0	104
	Global environmental protection costs	Power saving wireless equipment for mobile base station (Investment amount is calculated proportionally based on the power-saving effect.)	24,718	2,595	964	374	23,754	2,221
	Resource recycling costs	Reduction of paper resources, processing and disposal of waste products	71	423	27	675	44	(252)
Upstream/downstream costs		Collection, recycling, and reuse of merchandise and products	0	417	84	164	(84)	253
Administrative costs		Operation and updating of environmental ISO standards, disclosure of environmental information	0	281	0	1,065	0	(785)
R&D costs		Research & Development of technology, equipment, handsets, products, services, and other items conductive to reducing the environmental burden	0	144	66	166	(66)	(23)
Social activity costs		Donations and support for forest conservation activities and to environmental protection groups	0	32	0	12	0	20
Environmental damage restoration costs		Measures for prevention of asbestos spraying, restoration of polluted soil	0	38	0	0	0	38
Total			24,789	4,033	1,141	2,456	23,649	1,576

1. Environmental Protection Benefits (Physical)		Indicator Category (Unit)	FY2011	FY2010	Change from Previous Year
(1) Benefits derived from business area	1) Benefits related to resources invested in business activities	Power usage (MWh)	2,315,672	2,110,104	205,569
		Paper usage (t)	19,898	26,338	(6,440)
		Paper reduced by Bill on WEB (t)	3,244	2,105	1,139
	2) Benefits related to environmental burden and waste products discharged from business activities	Greenhouse gas emissions (t-CO_2)	971,201	925,580	45,621
		Industrial waste emissions related to telecommunication facilities and buildings (t)	4,209	11,629	(7,420)
(2) Benefits derived from upstream/downstream costs	Benefits related to goods and services produced by business activities	Number of used mobile phones and other devices collected (10,000 units)	533	548	(15)

2. Economic Benefits of Environmental Protection Measures (Yen)	Substantive Benefits (Major Effects)	FY2011 (Millions of yen)	FY2010 (Millions of yen)	Change from Previous Year
Revenues	Revenues from sales through disposal of telecommunication facilities and buildings	235	390	(155)
Costs reductions	Reduction in energy costs by adopting the use of low-pollution vehicles	10	8	2
	Reduction in costs of new purchases by reusing disposed of telecommunication facilities	1,748	4,721	(2,973)
Total		1,993	5,119	(3,125)

* KDDI Web Communications, Inc., mediba Inc., JAPAN CABLENET LIMITED (JCN), KDDI R&D Laboratories, KDDI Technology Corporation (KTEC), KDDI RESEARCH INSTITUTE, INC., KDDI Technical & Engineering Service Corporation, KDDI Evolva Okinawa Corporation, KDDI Challenged Corporation, TELEHOUSE International Corp. of Europe Ltd. (London)

Realizing a Low-carbon Society

Conserving Energy at Mobile Phone Base Stations

Green of ICT

Electricity used to operate mobile phone base stations at a high density throughout Japan accounts for around 60% of KDDI's electricity consumption. Accordingly, KDDI recognizes the conversion of mobile phone base stations to energy-conserving units as a matter of urgent priority and is working toward this end.

Air conditioning equipment was one of the leading consumers of electric power at conventional mobile phone base stations. We have developed "Type-VII" energy-saving wireless equipment that does not require air conditioning and are introducing this equipment at our commercial facilities. "Type-VII" wireless equipment serves the area covered by one base station, but uses 40% less electricity than conventional systems. As the equipment is also compact and lightweight, it places less stress on the buildings and other structures where it is installed. This results in base stations that are easier on the environment and structures alike. By developing and installing environment-friendly equipment such as this, during FY2011, KDDI's average electric power consumption per base station was down by 60%, compared with FY2005.

Common Smartphone Adapter

Green of ICT

In June 2011, KDDI commenced sales of "Common Adapter 03," a rapid-charging and energy-saving device compatible with smartphones.

Smartphones use around 1.5 times the battery power of conventional feature phones. The rapid-charging "Common Adapter 03" raises output from 600mA to 1A, boosting charging speed to between 1.5 and 2 times the standard level. As the adapter complies with the ITU-T L.1000* global standard, it can also be used with smartphones and other devices provided by other companies.

Further, the adapter raises charging efficiency by around 10% compared with conventional AC adapters through reduced power loss during charging. Furthermore, wait time power consumption (the amount of power used when not charging) is decreased by approximately 20%. These savings lower CO_2 emissions, resulting in a more environment-friendly product. As the adapter uses a microUSB standard interface, it extends the AC adapter replacement cycle, helping to reduce waste.

* A standard for adapters developed to reduce environmental impact by allowing one adapter to be used for various devices, thus eliminating the need for multiple adapters.

Common Adapter 03

Provision of "PC Remote Management Service"

Green by ICT

In June 2011, KDDI began offering "PC Remote Management Service," a centralized PC management service for corporate customers. This service depicts reductions in PC power consumption graphically and offers a new menu, "PC Power Savings Management (EnePal PC Pack)*" for reducing power consumption.

"PC Power Savings Management (EnePal PC Pack)" learns PC users' patterns of activity and works on its own to control power consumption. Consequently, the service reduces the amount of electricity that is used without interfering with PC user operations. The service also encourages awareness of power savings by showing PC users their electric power consumption as well as reduction effects, providing administrators with compiled data for all PCs that allows them to monitor activity centrally. This approach highlights unnecessary use of electricity and enables management and comparison by organizational unit. This service is currently in use by numerous corporate customers, where it is contributing to energy-saving measures and reducing their CO_2 emissions.

* "EnePal®" is a registered trademark of NEC Fielding, Ltd.
"PC Power Savings Management (EnePal PC Pack)" uses NEC Corporation's "EnePal PC Pack."

"Electricity Saving Challenge Project"

Green Road Project

KDDI introduced "Electricity Saving Challenge Project" as a service to support power savings at customers' homes in the face of electrical power shortages in the summer of 2011.

Through "Electricity Saving Challenge Project," we recruited monitors in the Tokyo Electric Power service area to participate in "Real-Time Check One Year Course" and "First of the Month Check Three-Month Course." These two programs were part of an initiative to help customers enjoy saving electricity. By comparing their power consumption against the same month of the preceding year and by helping to save energy by shifting consumption to off-peak times, participants were able to earn up to 1,000 au points per month.

KDDI plans to develop further services that will help customers to enjoy participating in energy-saving measures.

Screenshot of the electricity usage confirmation web page of the "Electricity Saving Challenge Project"

Realizing a Recycling-oriented Society

Reusing and Recycling Telecommunication facilities

Green of ICT

KDDI promotes reuse activities that employ retired telecommunication facilities effectively. We determine conversion to this equipment by taking future demand and business developments into consideration. Equipment that has been retired and can be converted is stored temporarily at our resource management center, from which it is shipped to individual sites once the next site of deployment has been determined.

We use material recycling to effectively employ equipment, components, and materials that have become unnecessary.

Subscriber communications network base station terminating equipment (left) and data transfer equipment in temporary storage at a resource management center
Storage racks (right)

Promoting Recycling of Mobile Phones

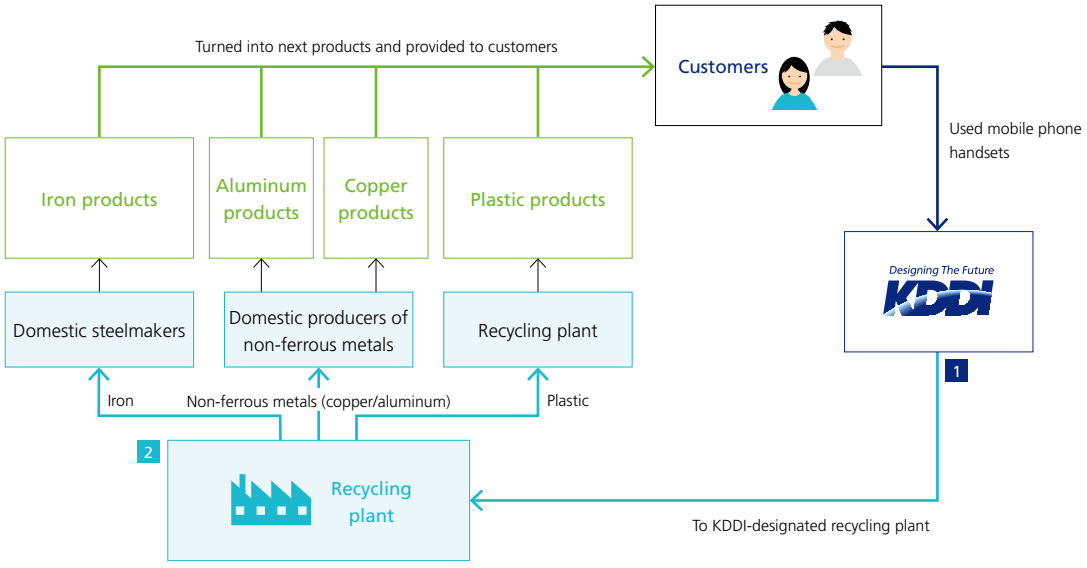
Green Road Project

Mobile phones use gold, silver, copper, palladium, and other precious metals and rare earths. To prevent depletion of the earth's resources, we emphasize the role of recycled metal, plastic, and other resources. KDDI is an active proponent of "material recycling," which involves the reuse of recyclable materials.

At au shops, we manually disassemble used mobile phone handsets that have been collected from customers unit by unit, separating out substrates, displays, cameras, plastics, screws, iron, antennas, motors, speakers, and other items. The substrates are sent to refining companies to extract gold, silver, copper, palladium, and other resources; screws and antennas are dispatched to iron and steel manufacturers for use in steel products; and plastics are recycled into clothes hangers and other items.

When a machine is used to disassemble a mobile phone, substrates and LCDs, plastics, and other components are shredded, so incineration processing is required to recover precious metals. Also, during incineration 20–30% of the plastic is burned up and so cannot be used as a recycled resource. KDDI disassembles phones manually to prevent recyclable resources from being wasted. During FY2011, our recycling ratio was nearly unity, at 99.7%.

Basic Flow for Recycling of Mobile Phones



1 Personal information leakage prevention through formatting and circuit board destruction using specialized machines

2 Disassembly conducted by hand to facilitate material recycling

Different recycling processes employed for different materials

Preserving Biodiversity

Acoustic Observaton of Ganges River Dolphin

Green by ICT

Since 2005, KDDI R&D Laboratories—a KDDI Group organization—has been collaborating with the University of Tokyo, the Indian Institutes of Technology, and WWF India* on a conservation project involving the Ganges River dolphin, which is facing extinction due to changing river environments.

The Indian government has enacted strict conservation measures, such as prohibiting fishing, in waters designated as Ganges River dolphin habitats, but the murky waters the dolphins inhabit makes it difficult to visually monitor the effects of these measures, and their biology is not generally well-known. Given these circumstances, determining the Ganges River dolphin's aquatic behavior has become a priority for understanding its biology and enacting more effective protection measures.

The clicking noises and high-frequency sounds in the ultrasonic range that Ganges River dolphins emit in the water can be used to understand the environment that surrounds them. KDDI R&D Laboratories has designed an underwater acoustic observation device and developed technology to determine location based on recognized clicking sounds. These efforts are contributing to biological research on the relatively unknown Ganges River dolphin and appropriate conservation activities.

Continuing this biological research, in December 2011 acoustic observations were begun on the Irrawaddy dolphins that live in the Mahakam River on the island of Borneo. In this way, KDDI plans to continue increasing its contribution to the preservation of biodiversity through the application of existing technologies.

Assembling a hydrophone (underwater microphone) array

* World Wildlife Fund (WWF): An organization for environmental preservation active in approximately 100 countries around the world

Walk Project

Green Road Project

KDDI has introduced "Walk Project" as a type of "Green Road Project" environmental preservation activity that encourages customer participation. In "Walk Project," customers use "au Smart Sports Run & Walk," a service that supports the use of au mobile phones while taking part in sports. For each kilometer that a customer runs, walks, or bicycles, KDDI donates one yen toward environmental preservation in Japan. This project started in 2008 with the dual aims of "encouraging customers to enjoy beauty of nature through walking and running" and "teaming up with customers on efforts to protect the environment." In FY2012, we added a click-on-a-charity function (one click earns one yen) to the campaign site, and enhanced the site to encourage even more customers to participate.

Going forward, while providing customers with enjoyable services KDDI plans to continue developing services that will contribute to environmental preservation.

Presentation of donations collected through Takao-san Walk

"Walk Project" Results during FY2011

Project	Monetary Amount	Donation Recipient
Shimanto-kawa Walk	¥5,882,331	Shimanto-kawa Foundation
Takao-san Walk	¥6,838,616	National Land Afforestation Promotion Organization

VOICE Stakeholder Feedback

Mr. Tamaki Ura

Professor Director
Underwater Technology Research Center
Institute of Industrial Science
The University of Tokyo

By creating robots that could dive in the sea, we became interested in whales and dolphins that behave in the same way. The dolphins inhabiting rivers and lakes are very familiar animals to humans. Around the year 2000, we got sound data from wild Baiji dolphins and start on analyzing their movements based on them. Unfortunately, Baiji dolphins are believed to have already become extinct. Dolphins that inhabit highly turbid water cannot see their surroundings, so they rely on sound. We determined to create technology that could help in observing them, understanding their behavior and protecting dolphins that are in danger of extinction. We can distribute information on dolphins in real time, that are swimming around, unseen to humans, so that we will be able to cultivate interest among people throughout the world.

KDDI R&D Laboratories has advanced technologies involving sound, data processing, and information communication, and is at the cutting edge of underwater technologies, as demonstrated by its subsea cables. Conducting joint research, we established observation stations in India, in the Ganges River and in Chilika Lagoon, where we continue to observe the Ganges River dolphins and Irrawaddy dolphins. In 2012, we are constructing a base in the Mahakam River in Indonesia. We are delighted to be able to apply communications technologies to the benefit of dolphins.