Eco-Office, Eco-Factory

Goal 3

Energy-saving Activities at Factories and Offices

The Anritsu Group in Japan is continually striving to reduce its electricity use, which accounts for over 90% of its CO_2 emissions (Scope 1 and 2), as the most important factor of environmental activities undertaken at its factories and offices.

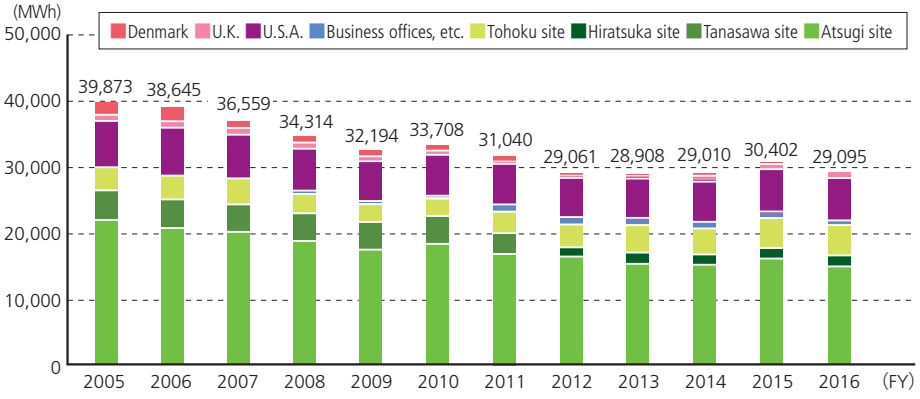
Air conditioning equipment consumes the greatest amount of electricity, and the Anritsu Group in Japan has been systematically upgrading to energy-saving equipment, frequently cleaning air filters, and undertaking heat insulation work on the walls of buildings. We have also sought to conserve energy by replacing equipment with energy-saving models, such as high-efficiency compressors, inverters for fluorescent lighting equipment, LED lighting and low-loss transformers. We have taken part in Cool Biz and Warm Biz activities for the past ten years. We have consequently been able to reduce electric power consumption over the past decade by over 20%.

In 2016 we sought to promote energy conservation by reviewing operational efficiency of the lighting and air conditioning of our global headquarters building equipped with the latest environmentally friendly technology. We also reduced the total floor area in which we conduct our business activities by consolidating buildings and reduced overtime after reviewing the ways we work, ultimately decreasing the electric power consumption at the Atsugi site by 6.8% compared to fiscal 2015.

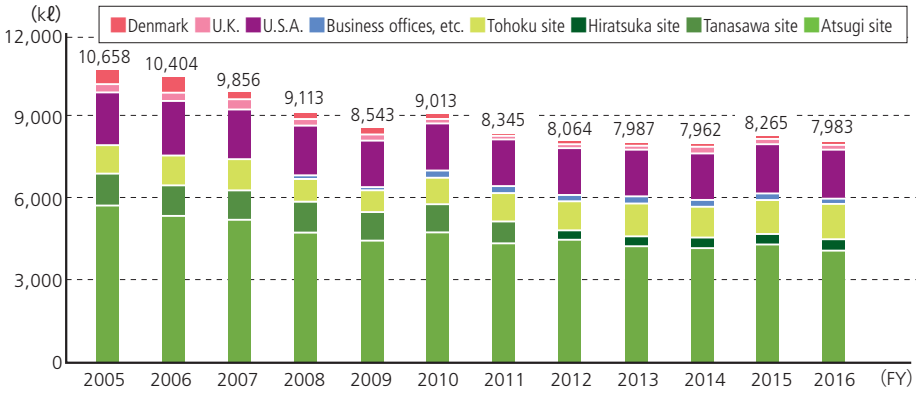
In addition to these activities, the Anritsu Group in Japan participates in a program promoted by the electric and electronics-related industries in Japan for establishing a low carbon society by achieving the common goal of improving the basic unit of energy by 1% every year toward 2020. In fiscal 2016, the basic unit rose by 1.1% compared to the benchmark year of 2012. We are also seeking an at least 1% annual reduction in the base unit under the Act on the Rational Use of Energy. In other regions, Anritsu Company (U.S.A.) installed storage batteries to lower peak power demand, effectively using nighttime power.

Under the mid-term plan of our GLP2017 Environmental Initiatives, we are striving to attain our global goal of reducing electric power consumption by 1% every year compared to fiscal 2014 levels for the Anritsu Group worldwide. In fiscal 2016, while energy consumption of the Atsugi site and Group companies outside Japan decreased, the Anritsu Group's energy consumption worldwide rose by 0.3% compared to fiscal 2014. This was due to the effects of shift work and equipment operation followed by increases of production load at the Hiratsuka and Tohoku sites.

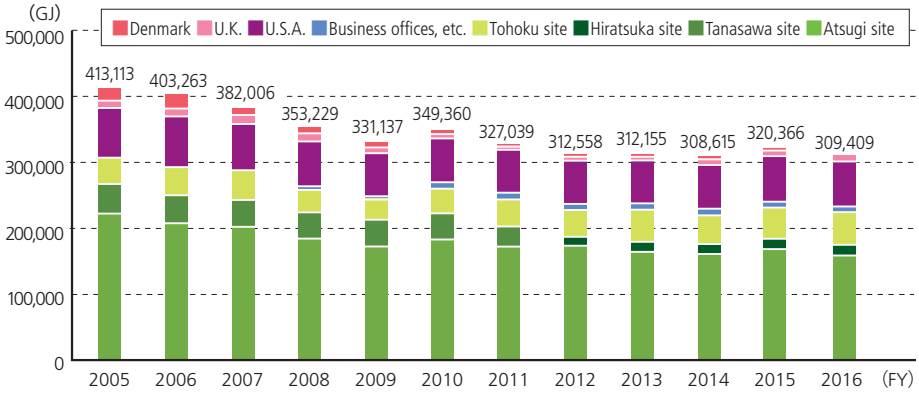
▶ Change in Energy Use



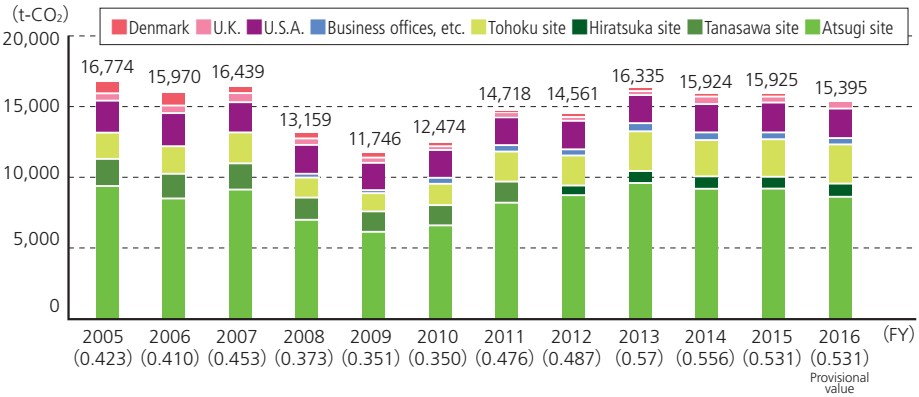
Energy Use (Crude Oil Conversion)



Energy Use (Joule Heat Conversion)



CO_2 Emissions from Energy Use



※ Figures in parentheses indicate electric factors (t-CO_2/MWh)

Reference

We calculated CO_2 emissions resulting from the use of energy other than electricity at Anritsu sites inside and outside Japan using the emission factor adopted by the Law Concerning the Promotion of the Measures to Cope with Global Warming. CO_2 emissions associated with electricity power in the United States are calculated using the CO_2 emission factor 0.285 (t-CO_2/MWh). The CO_2 emissions associated with electricity in countries other than the United States are calculated using the emission factor published by the Federation of Electric Power Companies of Japan for each fiscal year (the actual figure for fiscal 2015 was temporarily used as the emission factor for fiscal 2016).

The CO_2 emission factor varies each fiscal year according to the supply situation of each electric power company. Therefore, some fiscal years show an increase in CO_2 emissions, despite reductions in electric energy consumption (e.g., in fiscal 2011, electric power consumption decreased in fiscal 2010, while CO_2 emissions increased year-on-year).

COLUMN Reducing Energy Consumption by Improving the Operational Efficiency of the Global Headquarters Building

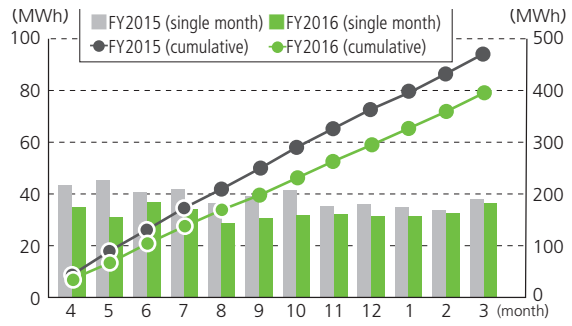
Our global headquarters building at the Atsugi site was constructed under a grant from the net zero energy building experimental pilot program (ZEB). A requirement for the grant included reducing energy consumption by 30% or more annually, compared to an ordinary office building, for two consecutive years. In May 2015, the building started its operation by setting the goal of reducing its energy consumption by 34% per year, compared to an ordinary office building. We have since reviewed effective ways to operate the building's lighting and air conditioning systems through cycles of trial and error.

Operations primarily reviewed

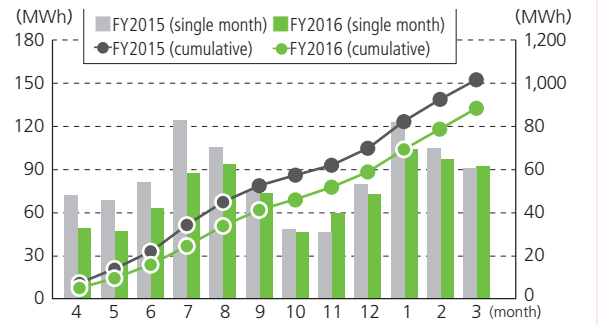
1. Shortening the time that the motion sensors' light stay on
2. Turning off all lights at night
3. Disabling motion sensors after turning off all lights at night
4. Adjusting the temperature and other settings when drawing in outside air through the outdoor-air processing unit
5. Changing the conditions by which air is drawn from outside through a natural ventilation system

Due to these efforts, we were able to achieve our initial goal of reducing the energy consumption of the global headquarters building over two years by 35.6% in fiscal 2015 and 40.7% in fiscal 2016, compared to an ordinary office building.

Energy Consumption of the Lighting in the Global Headquarters Building



Energy Consumption of the Air Conditioning Systems in the Global Headquarters Building



TOPICS

Anritsu Receives the Kanagawa Global Environment Award for 2016

In February 2017, Anritsu received the Kanagawa Global Environment Award under the category of global warming countermeasure programs, from the Governor of Kanagawa Prefecture. We received the award in recognition of the environmental awareness of our global headquarters, constructed at the Atsugi site in March 2015. Companies were selected under the global warming countermeasure programs category of this award by Kanagawa Prefecture from business operators subject to and demonstrating remarkable achievement through a global warming countermeasure action plan system for buildings under a Kanagawa Prefecture ordinance. This required submitting an action plan for global warming countermeasures when constructing, expanding and renovating buildings of a specified scale. We submitted our action plan in fiscal 2013 during the building's design stage and received the highest "S" ranking, recognizing the outstanding environmentally sound features of the building. In fiscal 2013, only four of 140 companies received this ranking. Our continuous management after the recognition was also acknowledged as outstanding and worthy of the award.

This was the second time that we won the Kanagawa Global Environment Award. The first was in fiscal 2007 when the award was offered through public offering and recognized our environmental conservation activities, including global warming countermeasures.

Executive Director Takeuchi (left) receiving the award from Mr. Kuroiwa, Governor of the Kanagawa Prefecture, at the Kanagawa Global Environmental Award ceremony.

WEB
List of award winners (Japanese only)

Renewable Energy

Solar power generators at the global headquarters building

Anritsu has solar power generators with maximum output capacity of 200 kW and 15 kW installed at the Koriyama Second Business Office and global headquarters building, respectively. In fiscal 2016, the Koriyama Second Business Office used 208 MWh of renewable energy generated by solar power, representing about 13% of its total electricity needs, and the global headquarters building used 20 MWh of solar power, representing about 0.6% of its total electricity needs. Surplus electricity generated at the Koriyama Second Business Office is supplied at no cost to the Tohoku Electric Power Company. In addition, we received third-party verification for the amount of renewable energy we generated.

Water Resources

Reduced Water Consumption

The Anritsu Group in Japan has reduced water use through efforts such as leakage inspections, upgrading to water-saving toilets and using circulated water in facilities. In fiscal 2016, we reduced water use at the Atsugi site by nearly 5.7% from fiscal 2015 by continuing to perform leakage inspections and repairs, moving employees to buildings installed with water-saving toilets, and reducing employee overtime hours by reviewing the ways they work.

California, where Anritsu Company (U.S.A.) is located, is subject to frequent droughts, and since 2012 some of these have been the most severe. The worst drought on record occurred in 2015, forcing the governor to request that all California residents reduce their water use by 20%. The Anritsu Company was able to reduce its water consumption by about half from fiscal 2013 to fiscal 2015 through efforts such as replacing a water-intensive lawn with plants that can withstand dehydration and introducing water-saving toilets. However, water consumption rose by 10.5% in fiscal 2016 compared to the 2015 level, due to the resumption of watering some of the plants that had nearly died from dehydration.

Under the mid-term plan of our GLP2017 Environmental Initiative, we plan to reduce water use by 1% every year, compared to fiscal 2014 levels, for the Anritsu Group worldwide. In fiscal 2016, we were able to cut water use by 15.4% compared to fiscal 2014 levels.

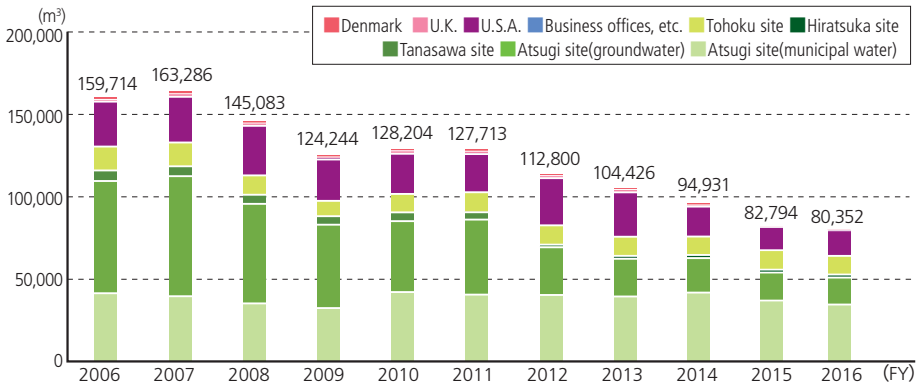
Consideration for Water Resources

At the Atsugi site, where we use groundwater to flush toilets, we have reduced our use of groundwater to about a quarter of the volume in the past 10 years by upgrading to water-saving toilets. And considering the possibility of groundwater depletion and flooding caused by heavy rainfall, we installed a rainwater permeation basin at the global headquarters building to facilitate the penetration of rainwater into the ground.

▶ Efforts to Protect Water Resources

Details of our efforts	Atsugi site	Hiratsuka site	Tohoku site	U.S.A.
Introduced a body detection sensor for men's toilets	○		○	○
Introduced water-saving toilets	○		○	○
Introduced automatic faucets	○		○	
Used groundwater for flushing toilets	○			
Reuse of rinse water from the metal degreasing unit		○		
Installed a rainwater permeation basin	○			
Installed water-saving valves for faucets	○			
Installed a sound emulator, "Otohime," for toilets	○			
Conducted leakage inspections	○	○	○	
Upgraded to high-efficiency water heaters				○
Replanted plants that can withstand dehydration				○
Replaced to a drip water supply system				○
Introduced a waterless method for cleaning windows				○
Arranged an inspection of a water supply facility by external institutions				○
Participated in Mt. Fuji Green Fund Afforestation Efforts	○	○		
Participated in a cleanup of the Sagami River	○			

▶ Water Consumption



Groundwater Management Wastewater

We have a groundwater well and an observation well at the Atsugi site, where we continue to voluntarily analyze and monitor the five designated organochlorine substances in groundwater. With regard to organochlorine substances, we completely eliminated the use of trichloroethylene in 1970 and 1,1,1-trichloroethane in 1993. In fiscal 2016, levels of tetrachloroethylene were higher than permitted under environmental standards, as in previous years, and levels of trichloroethylene were as high as environmental standards allow. However, as previously verified, Anritsu has never used tetrachloroethylene, and as the results of the soil survey showed, it was not responsible for trichloroethylene contamination. This data suggest that the source of contamination originated upstream from Anritsu's location, which the local government is also aware of. We will continue to conduct regular analysis and monitoring of the site.

Item	Environmental standard level [mg/l]	Measured value [mg/l]
Trichloroethylene	0.01	0.01
Tetrachloroethylene*	0.01	0.043
1,1,1-trichloroethane	1	<0.0005
1,1-dichloroethylene	0.1	<0.002
Cis-1,2-dichloroethylene	0.04	0.017

*Tetrachloroethylene surpassed the acceptable level, but the Atsugi site has never used it.

More information (Excel)
Environmental D Excel data of Each Site

Wastewater

The Atsugi site operates an industrial wastewater treatment facility to detoxify industrial wastewater containing acids and alkali and wastewater discharged from small boilers used to adjust humidity inside cleanrooms. In fiscal 2013, we upgraded the facility, partly to address the wear and tear of existing facilities but also because of changes in our business structure (the discontinuation in 2002 of industrial processes that use large volumes of water, such as manufacturing printed wiring boards, coating and plating). This has led to a significant decrease in the volume of wastewater as well as a change in its quality. Moreover, intermediate treatment liquids stored in large tanks posed a major risk of leakage in the event of a contingency such as an earthquake. To eliminate this risk, we upgraded the facilities by modifying the structure to incorporate a breakwater to prevent any leaks of raw water, intermediary wastewater or chemicals used for treatment from the tanks. We further reduced the risk by adding a second monitoring system to ensure that water exceeding the permitted pH limit would not be discharged into the surrounding environment.

The Hiratsuka site uses alkaline washing agents to degrease metallic materials but does not discharge industrial wastewater. The rinsing water used by the facility is reused by circulation through filters and ion-exchange resins, which reduces annual water use by approximately 40 m^3.

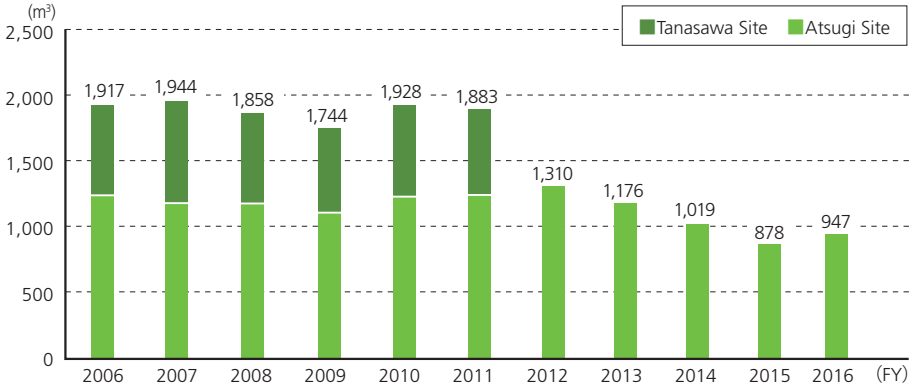
While there are no facilities that discharge industrial wastewater at the Tohoku site, we have installed a pH monitor and emergency cutoff valve to address the risk of water being discharged from boilers and septic tanks in the event of malfunction, which could cause the pH level to exceed regulatory standards.

Each site has developed response procedures to address the potential leakage of chemical substances due to human error or natural disaster. Regular equipment inspections and training are also conducted, and necessary revisions are made to prepare for unexpected accidents.

The industrial wastewater treatment facility

Neutralization segment of the industrial wastewater treatment facility

Wastewater discharge from operations



Atsugi Site : Laws and regulations of Atsugi City regarding discharge into public sewage systems

Item	Emission standard [mg/l]		Measured value [mg/l]		
	Regulation value	Voluntary control value	Average	Min.	Max.
pH	5.0-9.0	5.7-8.7	7.4	6.6	8.0
SS	600	300	7.8	<1.0	17.0
BOD	600	300	22.6	1.4	69.0
Normal hexane extracts Mineral oil	5	3	0.6	<0.5	1
Normal hexane extracts Organic oil	30	18	0.6	<0.5	1
Iodine consumption	220	90	<1.0	<1.0	<1.0
Fluorine	8	4.8	0.3	0.21	0.46
Cyanide	1	0.4	<0.01	<0.01	<0.01
Total Nitrogen	380	125	0.5	<0.1	1.05
Boron	–	–	–	–	–
Total chromium	–	–	–	–	–
Dissolved iron	10	4	0.12	0.02	0.45
Copper	3	1.2	0.03	0.005	0.037
Zinc	2	1.2	0.10	0.03	0.27
Dissolved manganese	–	–	–	–	–
Nickel	1	0.6	0.004	<0.001	0.01
Lead	0.1	0.06	0.01	<0.001	0.032

※ Items subject to the laws and regulations but excluded from this list were not used as raw materials and therefore not measured.

Tohoku Site (Koriyama First Business Office): Fukushima Prefecture Government regulations

Item	Emission standard [mg/l]		Measured value [mg/l]		
	Regulation value	Voluntary control value	Average	Min.	Max.
pH	5.8-8.6	6.0-8.4	7.0	6.7	7.2
SS	70	30	3.3	1.0	7.8
BOD	40	20	3	0.5	9.6
Dissolved iron	10	4	0.12	*	*
Copper	2	0.8	0.01	*	*
Zinc	2	1.2	0.12	*	*
Nickel	2	0.8	Below the detection limit (0.01mg/l)	*	*
Lead	0.1	0.08	Below the detection limit (0.01mg/l)	*	*
Number of colon bacillus (piece/m³)	3,000	2,400	0	0.0	0.0

※ Items subject to the laws and regulations but excluded from this list were not used as raw materials and therefore not measured.

*There is no max. or min. records as survey is conducted only once a year.

▶ Tohoku Site (Koriyama Second Business Office): Fukushima Prefecture Government regulations

Item	Emission standard [mg/l]		Measured value [mg/l]		
	Regulation value	Voluntary control value	Average	Min.	Max.
pH	5.8-8.6	6.0-8.4	7.3	6.7	7.7
SS	70	30	3.9	1	4.3
BOD	40	20	3.8	0.5	11.0
Dissolved iron	10	4	Below the detection limit (0.05mg/l)	*	*
Copper	2	0.8	Below the detection limit (0.01mg/l)	*	*
Zinc	2	1.2	0.03	*	*
Nickel	2	0.8	Below the detection limit (0.01mg/l)	*	*
Lead	0.1	0.08	Below the detection limit (0.01mg/l)	*	*
Number of colon bacillus (piece/m^3)	3,000	2,400	0.0	0.0	0.0

※ Items subject to the laws and regulations but excluded from this list were not used as raw materials and therefore not measured.

*There is no max. or min. records as survey is conducted only once a year.

More information (Excel)
Environmental D Excel data of Each Site

Prevention of Air Pollution

Having eliminated the coating process in 2000, no facility at the Atsugi site generates air pollution subject to legal regulations. The Tohoku site operates heavy oil boilers subject to the Air Pollution Control Law. The boilers are operated on a voluntary management standard to control air quality. No facility at the Hiratsuka site generates air pollution subject to legal regulations.

Moreover, proper management of fluorocarbon-based equipment is conducted at the Anritsu Group in Japan in accordance with the Act on Rational Use and Proper Management of Fluorocarbons.

In fiscal 2016, there were no leakages of fluorocarbons exceeding 1,000 CO_2-t, the reporting threshold required by the government.

▶ Tohoku Site (Koriyama First Business Office): Air Pollution Control Law

Item	Emission standard (mg/l)		Measured value (mg/l)
	Regulation value	Voluntary control value	
Smuts (g/m^3N)	0.3	0.18	Below the detection limit (0.005g/m^3N)
Sulfur oxide (m^3N/h)	4.37	2.63	0.06
Nitrogen oxide (ppm)	180	170	120

More information (Excel)
Environmental D Excel data of Each Site

Noise

We are implementing a variety of efforts to detect abnormalities at an early stage, including a system of prior examination before introducing equipment, equipment inspections at the beginning of every operation and regular patrols on the premises. We also regularly monitor noise levels at borders every year. At the Hiratsuka site, where there are many types of machining equipment, we are reducing risks by moving particularly noisy equipment to a soundproofed room and placing noise reducing covers over exhaust vents. Results show that measured noise levels not only meet legal standards but also fall below our own voluntary standards.

Soundproofed room

Exhaust vent with a noise reduction cover

Atsugi Site: Kanagawa Prefecture Government regulations

Measured point	Regulation value (dB)(daytime)	Voluntary control value(dB)(daytime)	Measured value(dB)
At the eastern border line	70	68	65
At the western border line	70	68	63
At the southern border line	70	68	56
At the northern border line	70	68	64

Tohoku Site (Koriyama First Business Office): Fukushima Prefecture Government regulations

Measured point	Regulation value (dB)(daytime)	Voluntary control value(dB)(daytime)	Measured value(dB)
At the eastern border line	75	73	42
At the western border line	75	73	48
At the southern border line 1	75	73	59
At the southern border line 2	75	73	53

Tohoku Site (Koriyama Second Business Office): Fukushima Prefecture Government regulations

Measured point	Regulation value (dB)(daytime)	Voluntary control value(dB)(daytime)	Measured value(dB)
At the eastern border line	75	73	49
At the western border line 1	75	73	47
At the western border line 2	75	73	44
At the northern border line	75	73	48

Hiratsuka Site: Kanagawa Prefecture Government regulations

Measured point	Regulation value (dB)(daytime)	Voluntary control value(dB)(daytime)	Measured value(dB)
At the eastern border line	65	64	59
At the western border line	65	64	58
At the southern border line	75	73	58
At the northern border line	75	73	57

More information (Excel)
Environmental D Excel data of Each Site

Chemical Substances Management

Use of chemical substances by the Anritsu Group companies in Japan is determined by designating banned or restricted substances from the standpoints of environmental regulations, hazardousness, safety and health, and disaster prevention, and having expert evaluators with knowledge of each criterion conduct prior assessments.

In addition, the amounts of chemical substances purchased, used and disposed of within a three-month period are entered into a chemical substances management system. We use this database to compile the amount of substances subject to the Pollutant Release and Transfer Register (PRTR) Law, calculate the total stored amount of hazardous materials as designated by the Fire Service Act as well as the emission of greenhouse gases, and monitor chemical substances designated by revisions in laws and regulations. We also consider replacing substances with safer alternatives as necessary.

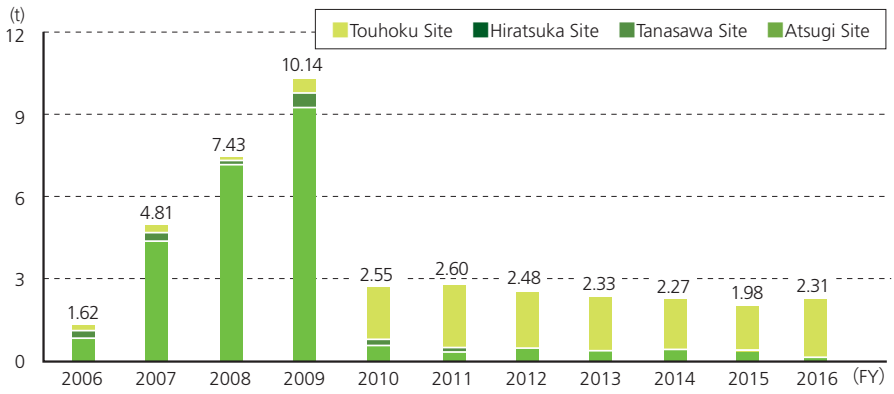
In fiscal 2013, we raised the efficiency of our chemical substances management operations by upgrading the chemical substances management system used for prior assessment and registration of the above-mentioned substances and for monitoring their use. We also sought to visualize our internal efforts in chemical substances management through measures such as expanding the checklist for environmental regulations related to the use of chemical substances.

With respect to substances designated by the PRTR Law, the volume we handle at our sites changed significantly due to a revision of the law in 2010 that excluded from the list liquid bisphenol A epoxy resin, an ingredient used at the Atsugi site, while adding methylnaphthalene, an additive for heavy oil used as fuel at the Tohoku site. Also in fiscal 2016, more than one ton of methylnaphthalene was handled at the Tohoku site and duly reported to the regulatory authorities. Compared to fiscal 2015, the amount of methylnaphthalene handled increased by about 0.5 tons in fiscal 2016 due to the increased use of heavy oil used as fuel at the Tohoku site following an increase in shift work to keep pace with increased production. However, because methylnaphthalene is burned in boilers, very little of it is released externally.

In fiscal 2016, we completely discontinued any in-house use of Methylenebis (4,1-phenylene) diisocyanate, contained in the liquid concentrate of urethane foam used as a shock-absorbing material in packaging.

Regulated Chemical Substances Used by the Anritsu Group	
Banned substances	Class of 7 substances: CFC (chlorofluorocarbons), halon, carbon tetrachloride, 1,1,1-trichloroethane, HBFC (hydrobromofluorocarbons), bromochloroethane, methyl bromide
Limited-use substances	Class of 7 substances: HCFC (hydrochlorofluorocarbons), trichloroethylene, tetrachloroethylene, dichloromethane, HFC (hydrofluorocarbons), PFC (perfluorocarbons)

Chemical Substances Management under the PRTR Law



PCB Management

At the Atsugi site, we tightly control used electric devices such as condensers, transponders and fluorescent ballasts, and pressure sensitive copying paper that contain polychlorinated biphenyl (PCB) within the storage standards for specially controlled industrial waste. Storage status is reported annually to the prefecture under the Law concerning Special Measures for Promotion of Proper Treatment of PCB Waste. Moreover, when disposing of any equipment, including transformers, after a facility upgrade, we perform a check and analysis to confirm that the equipment does not contain any PCB. We retain and submit an additional notification if we find any equipment containing any such compounds.

With respect to condensers, which constitute a portion of high concentration PCB waste, we filed an early request for their treatment with Japan Environmental Storage & Safety Corporation (JESCO). Our turn came in fiscal 2016, and we completed the treatment of devices registered with JESCO Tokyo. Our analysis also revealed that pressure-sensitive copying paper came under the category of low-concentration PCB waste, and we contracted a government-certified treatment company to properly treat the waste.

With regard to ballasts containing a high concentration of PCB among the remaining PCB waste, we completed preparations for submitting packaging details to JESCO Hokkaido, which will be registered in fiscal 2017. Also, we are moving ahead with preparations for the early treatment of waste contaminated with a low concentration of PCB, mainly transponders, in view of the recent rise in the number of licensed processing companies.

Transporting condensers containing PCB

Waste Reduction

The Anritsu Group in Japan has achieved and maintained zero emissions* since 2004 by promoting 3R activities and separation of waste in our offices and production lines.

In our efforts on general waste, we began separating paper containers used for food in fiscal 2013 and have sought to enhance the quality of our recycling activities by shifting from thermal recycling to material recycling. Moreover, we have been working to reduce raw garbage generated by the employee cafeteria and in fiscal 2015 installed a new raw garbage disposal tank that decomposes raw garbage using microorganisms, subsequently reducing a significant amount of waste. As a result, we naturally decomposed about 4.7 tons of raw garbage, which we would have otherwise disposed of as general waste. Despite

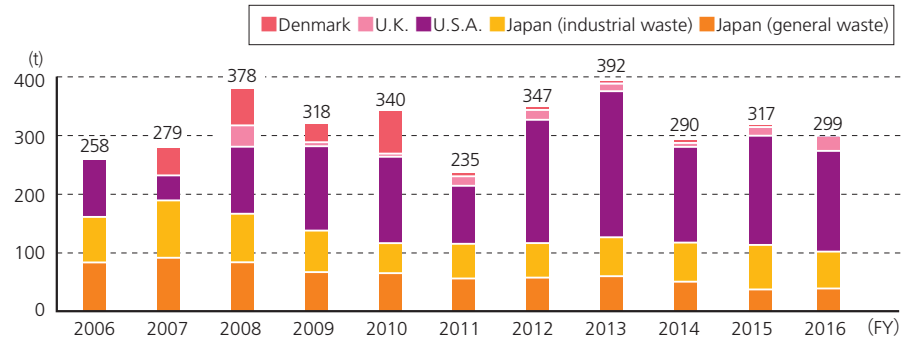
* Zero emissions: Recycling all waste; defined by Anritsu as achieving a directly landfilled and burned disposal rate of less than 0.5%.

these efforts, however, the amount of general waste at the Atsugi site increased in fiscal 2016 as the amount of waste that can be processed in the disposal tank had decreased. We will seek to further decrease the amount of raw garbage disposed of as general waste by installing more raw garbage disposal tanks and operating them more effectively.

As for industrial waste, we replaced special wooden frames used to ship components produced abroad to Japan with rented plastic frames in fiscal 2015, which led to a reduction of wood waste in fiscal 2016.

Looking ahead, we will maintain our waste reduction efforts.

Change in Volume of Waste



Volume of Waste Generated by the Anritsu Group in Japan by Treatment Method and Waste Type (Including valuables)

Treatment method	Type of waste	Volume of waste disposed (t)
Material recycling	Metal scraps	154.5
	Paper	90.4
	Plastics	6.1
	Sludge	2.2
	Oil	0.6
	Woodchips	0.4
	Glass/ceramic scraps	0.0
Thermal recycling	Animal residue	37.7
	Plastics	25.8
	Oil	13.3
	Sludge	9.0
	Woodchips	5.1
	Paper	2.4
	Alkali	0.8
	Acid	0.5
Landfill	Glass/ceramic scraps	0.0

Examples of Separate Collection of Waste

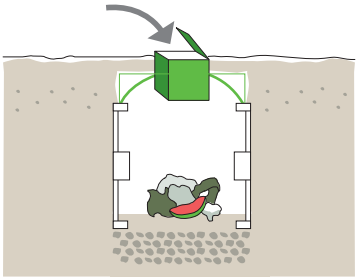
By thorough classification collection, we are working to reduce waste.

Raw Garbage Disposal Tank

Landfill disposal tanks are installed underground, where the temperature remains stable. Raw garbage can simply be thrown into the tank, where it decomposes naturally with both anaerobic and aerobic bacteria, significantly reducing the volume of garbage. It works like a large compost bin that does not require periodic maintenance, which can be costly and time-consuming, and it does not consume any electricity.

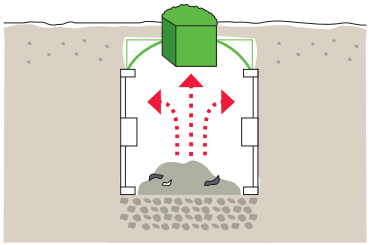
Input raw garbage and administer special decomposition accelerator

Low-lying inlet for effortless input



Decomposition

Synergistic effect between anaerobic and aerobic bacteria as well as stable underground temperatures accelerate the decomposition and fermentation of raw garbage



Certified Business Site Promoting Environmental Consideration

The headquarters (Atsugi site) of Anritsu Corporation, located in Kanagawa Prefecture, is certified and registered both as a business site practicing environmental management and as a business site promoting environmental consideration.*

* Kanagawa Prefecture recognizes companies that meet its requirements for reducing environmental impact, properly controlling chemical substances and establishing organizational frameworks for the environment, and it registers them as certified business sites that promote environmental considerations.

Environmental Considerations in Packaging

The Anritsu Group in Japan seeks to reduce the volume of packaging materials. Along with our packaging subcontractors, we are taking steps to completely discontinue the use of shock-absorbing material for packaging, made of urethane foam, which is produced using a liquid concentrate containing Methylenebis (4,1-phenylene) diisocyanate, designated as a Class I Designated Chemical Substance under the PRTR Law.

Packaging for Desktop Measuring Instruments

Measuring instruments, which constitute Anritsu's core products, are delicate and require protection against vibration and shock during transport. In the past, we applied the two types of packaging for desktop measuring instruments. One is urethane form packaging, and the other is film packaging. In the urethane form packaging, the product is wrapped in shock-absorbing urethane foam, and in the film packaging, the product is placed between two sheets of elastic film to absorb shock by maintaining the product inside a hollow structure.

Urethane foam used in shock-absorbing packaging is made of a liquid concentrate containing a substance regulated under the PRTR Law. Although we chose film packaging as an alternative, it requires space around the product for the film to deflect, increasing the distance between the product and the packaging box. The volume of packaging is greater than that using urethane foam as shock absorbent, which reduces transport efficiency.

To address this issue, we chose polyethylene foam, which exerts less environmental

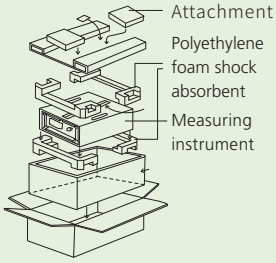
impact, to absorb shock. We also categorized the mass of the measuring instrument components into large and small in order to create two types of shock absorbing material. Selective use of the material enabled us to develop the Polyethylene Foam Packaging (PEF) method, which offers the same level of resistance to falling shock as film packaging, but is 40% smaller in volume.

In fiscal 2016, we shipped approximately 28% of the total shipments of measuring instruments and all our newly developed desktop measuring instruments are in principle being shipped in PEF packaging, starting in fiscal 2016.

Urethane foam shock absorbent

Film packaging shock absorbent

Polyethylene foam shock absorbent



polyethylene foam packaging

Top: polyethylene foam packaging
Bottom: film packaging
Obvious reduction in size

Packaging for Handheld Measuring Instruments

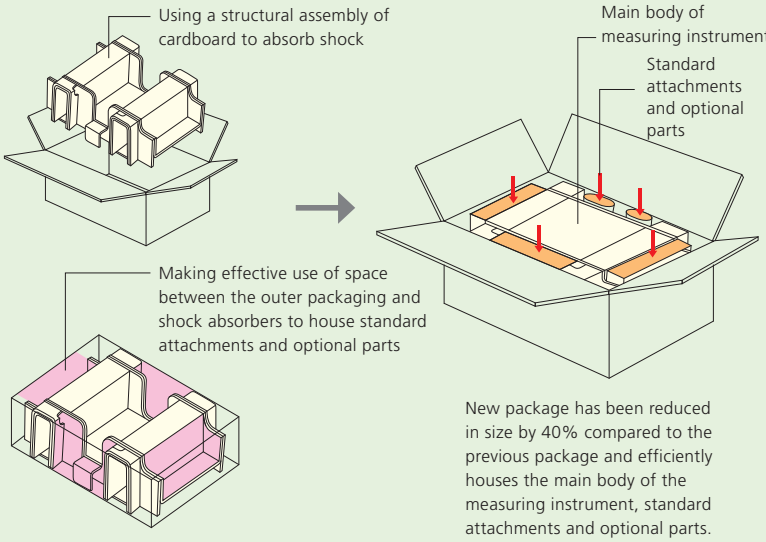
For packaging relatively light handheld measuring instruments, Anritsu uses a structural assembled cardboard to absorb shock during shipping, combined with an efficient method for housing standard attachments and optional parts. This eliminates the use of urethane foam and reduces package size by 40%, compared to conventional packaging, while providing the same level of protection against vibration and shock.

(1) Reducing package size

The new cardboard package is smaller than the previous package.

Left: New cardboard package
Right: Previous package with urethane foam as a shock-absorbing material

(2) New cardboard package without urethane foamas a shock-absorbing material



New package has been reduced in size by 40% compared to the previous package and efficiently houses the main body of the measuring instrument, standard attachments and optional parts.

Eco-Logistics

Overview of Eco-Logistics

Delivery

The carrier takes out the product from a returnable box and delivers it to a place the customer has designated. After delivery, the returnable box is brought back by the carrier.

Pick up

The carrier arrives at the customer's location with packaging materials and picks up the product after packaging.

Response to carrier

We maintain transport quality by conducting in-depth discussions between carrier and Anritsu to build a safety system on transport.

Comparison of Conventional Cardboard Packaging with Eco-Logistic

	Conventional cardboard packaging	Eco-Logistics
At delivery	Customer needs to dispose a lot of packaging materials. ➡ Large amount of waste ➡ Cost of waste disposal high	Customer needs to dispose only a few packaging materials. ➡ Small amount of waste ➡ Cost of waste disposal can be reduced
At pick up	Customers package by themselves with packaging materials sent by Anritsu. ➡ Customer's product packaging operation occurs ➡ New packaging materials required = Waste	Carrier picks up the product after wrapping it with their packaging materials. ➡ Customer's product packaging operationunnecessary ➡ New packaging materialsunnecessary =Waste reduction

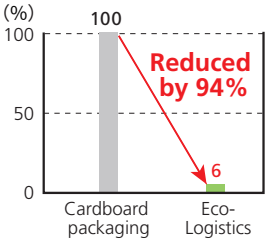
Delivery Example

The product is first covered with a polyethylene bag to prevent scratches and dust and then packaged in a returnable box. The product and attached equipment box are packaged, as shown in the picture to the left. Carrier removes the product from the returnable box.

The carrier removes the product from the returnable box.

The product and attached equipment box are delivered to the customer, covered with a polyethylene bag for protection. An invoice is attached to the product. After delivery, the carrier brings back the returnable box and packaging materials.

▶ **Reduction of Packaging Material Waste**



For the returnable box, the customer only needs to dispose the polyethylene bag covering the product. Comparing the traditional cardboard packaging with returnable containers, the waste emissions caused by packaging materials for the customer will be greatly improved, which is about a 94% reduction by weight (assuming that the returnable box is used 20 times).

Recycling Used Products

Anritsu led the measuring instrument industry in establishing the Recycling Center at Anritsu Kousan Co., Ltd., in 2000. Anritsu Kousan obtained a license to engage in the industrial waste disposal business in September 2002 and started operating in fiscal 2003. The center is primarily engaged in treating products used by customers.
In fiscal 2016, the center received 95 tons of used products and equipment generated by the Anritsu Group and recycled nearly 100% of the waste after disassembling and sorting, shipping 95% of the resultant material as valuable resources.
The center promotes the refurbishment of used products. A selection of equipment used in demonstrations is reconditioned and calibrated by Anritsu and then delivered with a one-year guarantee, thus extending the lives of the products.

Recycling System for Used Products