



# Environmental Targets and Results

We set numerical targets for all of our key environmental activities as we continually strive to decrease our environmental load.

Item	Units	Results			FY2016 Target Value		
		FY2014	FY2015	FY2016			
Initiatives to Address Global Environmental Issues	CO <sub>2</sub> emission volume per electricity sales volume (post-adjustment) <sup>3</sup> [ ] are actual emission factors	kg-CO <sub>2</sub> /kWh	0.598 [0.584]	0.528 [0.509]	0.483 [0.462]	<u>Limit as much as possible</u> <sup>4</sup>	
	(Note) CO <sub>2</sub> emissions (post-adjustment) <sup>3</sup> [ ] are actual emission volumes	x10,000 tons-CO <sub>2</sub>	4,860 [4,750]	4,180 [4,030]	3,750 [3,590]		
	Electricity sales volume	x100 million kWh	813	792	777		
	CO <sub>2</sub> emissions reductions based on the best available technology (BAT) at new thermal power plants, etc. <sup>5</sup>	x10,000 tons-CO <sub>2</sub>	-	2.6	26.0	<u>Reduce as much as possible</u> <sup>5</sup>	
	Nuclear power utilization rate	%	0	20.7	31.9	- <sup>5</sup>	
	Amount of renewable energy facilities installation (total) <sup>7</sup>	x10,000 kW	-	-	180	400 by 2030 <sup>8</sup>	
	Transmission end thermal power total heat efficiency (higher calorific value base) [ ] are lower calorific value base-converted values <sup>9</sup>	%	39.5 [42.2]	39.6 [42.3]	40.4 [43.3]	- <sup>6</sup>	
	Transmission and distribution loss rate	%	4.7	4.58	4.81	- <sup>6</sup>	
	Office power usage	x1 million kWh	55	54	57	54 or less <sup>10</sup>	
	Purchased copier paper	tons	471	511	509	470 or less	
	Water supply usage <sup>11</sup>	m <sup>3</sup> /person	25	25	29	24 or less	
	Electric vehicles introduced (total) <sup>13</sup>	vehicles	169	167	167	approx. 1,000 by end of FY2020	
	General-purpose vehicle fuel consumption rate <sup>14</sup>	km/ℓ	12.7	12.7	12.7	12.0 or more	
	SF <sub>6</sub> Recovery Rate	During machine maintenance	%	99	99	99	98 or more
		During machine removal	%	99	99	99	99 or more
Recovery implementation rate during machine maintenance for fluorocarbons subject to regulation		%	100	100	100	100	
Initiatives to Establish a Recycling-Oriented Society	Industrial waste recycling rate	%	approx. 100	approx. 100	approx. 100	99 or more	
	Coal ash recycling rate	%	100	100	100	100	
	Non-coal ash recycling rate	%	98	97	99	98 or more	
	External landfill disposal of industrial waste	tons	27	44	148	- <sup>15</sup>	
	Waste paper recycling rate	%	100	100	100	100	
	Green procurement rate <sup>16</sup>	%	98	99	approx. 100	Procure as much as possible <sup>17</sup>	
Local Environmental Preservation	SOx emissions per quantity of thermal power generated <sup>18</sup>	g/kWh	0.36	0.29	0.19	Limit as much as possible <sup>19</sup>	
	NOx emissions per quantity of thermal power generated <sup>18</sup>	g/kWh	0.26	0.24	0.17	Limit as much as possible <sup>19</sup>	
	Dose assessment for public in nuclear power plant vicinity (per year)	millisieverts	under 0.001	under 0.001	under 0.001	under 0.001	
Collaborating with Communities	Energy and Environmental Education	Eco-mother activity frequency <sup>20</sup>	times	214	245	253	<u>250 or more</u> <sup>20</sup>
		On-demand course frequency <sup>20</sup>	times	366	489	479	<u>Implement proactively</u> <sup>20</sup>

\*1: The degree to which FY2016 targets were met is rated on a three-tier scale: "🟢": achieved, "🟡": mostly achieved (80% or more achieved), "🔴": unachieved (under 80% achieved). Items for which there is no FY2016 target value are delineated with a ( ) to show that they are a comparison with the actual values from FY2015.

\*2: Underlined items are revised targets (discussed in "II. Building on the Results of FY2016").

\*3: Adjusted in line with CO<sub>2</sub> emissions credits and feed-in tariffs (FIT).

\*4: Amongst other activities, we strive to ensure that safety is our chief consideration for nuclear power, that we utilize renewable energy, that we improve the already high efficiency of our thermal power plants, that we undertake appropriate maintenance and management and that we provide energy-saving and reduced-CO<sub>2</sub> services which contribute to a low-carbon society, all for the purpose of achieving the targets which have been set for the electric power industry as a whole (emissions factor of approximately 0.37 kg-CO<sub>2</sub>/kWh (usage end) by FY2030).

\*5: Among other things, we incorporate the best available technology (BAT) which is economically feasible into our new thermal power plants in order to reduce our environmental load and fully pursue the targets set for the electric power industry as a whole (maximum reduction potential of approximately 7 million tons-CO<sub>2</sub> by 2020 and approximately 11 million tons-CO<sub>2</sub> by 2030).

\*6: The outlook for nuclear power is unclear within supply planning, and a wait-and-see stance has been adopted on target setting and announcements.

\*7: Amount of facilities introduced by Kyushu Electric Power and its group companies (target results are omitted for FY2014 and FY2015, as this is a new target item established in FY2016).

(Note) CO<sub>2</sub> emissions per electricity sales volume for FY2016, CO<sub>2</sub> emissions volume and electricity sales volume show only results for retail electricity providers; results are not included for isolated islands overseen by general transmission power providers (excluding the Goto Islands, which are handled as part of mainland Nagasaki Prefecture).

	Assessment <sup>1</sup>	FY2017 Target <sup>2</sup>
-	In the wake of the Great East Japan Earthquake, the Genkai and Sendai Nuclear Power Plants were shut down, and the lost electrical generation was largely made up for through expanded thermal power generation. This resulted in a significant increase in CO <sub>2</sub> emissions compared with before the earthquake (FY2010). As a result of such factors as the restarting and safe, year-long operation (except for periods of scheduled maintenance) of the Sendai Nuclear Power Plant Reactor #1 and #2, CO <sub>2</sub> emission for FY2016 declined by approximately 4.3 million tons compared with FY2015. For the future, we are doing our utmost to control CO <sub>2</sub> emissions by relying on proven, safe nuclear power, developing and incorporating renewable energy, improving the already high efficiency of our thermal power plants, undertaking appropriate facilities maintenance and management, and providing energy-saving and reduced-CO <sub>2</sub> services contributing to a low-carbon society.	Limit as much as possible <sup>14</sup>
(B)	We have reduced CO <sub>2</sub> emissions through such initiatives as introducing BAT into Shin-Oita Power Plant No.3x4 and updating the high-efficiency steam turbine at Matsuura Power Plant Unit 1.	Reduce as much as possible <sup>15</sup>
(B)	We have increased the utilization rate to 31.9% by returning Sendai Nuclear Power Plant Reactor #1 and #2 to normal operation for the duration of FY2015.	(wait-and-see stance on target setting and announcements) <sup>16</sup>
(B)	By the end of FY2016, a total of 1.8 million kW was introduced. For the future, we are doing our utmost as a corporate group to develop and introduce renewable energy which can serve as a reliably proven source of electricity.	400 by 2030 <sup>17</sup>
(B)	The drop in operation rate of low heat efficiency oil-fired thermal power plants as a result of the restarting of Sendai Nuclear Power Plant, coupled with such factors as the start of operations for the high-efficiency Shin-Oita Power Plant No.3x4, saw figures improve above FY2015 to 40.4%.	(wait-and-see stance on target setting and announcements) <sup>18</sup>
(B)	Despite a drop in power transmission as a result of lower electricity sales volume, factors such as an increase in transmission and distribution power loss contributed to a greater transmission and distribution loss rate.	(wait-and-see stance on target setting and announcements) <sup>19</sup>
(B)	Despite careful and consistent power-saving measures, such as proper management of air conditioning usage and reduced lighting and elevator installation and usage, increased air conditioning usage due to elevated average temperatures during summer months and other factors cause targets to be missed.	Approx. 54 or less
(B)	Despite increased use of electronic documents to promote paperless operations, greater efforts to cut down on careless copier usage and a concentrated push to use both sides of paper before discarding it, factors such as the re-launch of our push for "all-electric operations" necessitated the purchase of more paper, causing us to miss our target.	470 or less
(B)	Despite concerted efforts to reduce water use, factors such as the increased number of personnel needed for regular inspections at Sendai Nuclear Power Plant Reactor #1 and #2 created an increase in water usage which resulted in our target being missed.	26 or less <sup>20</sup>
(B)	The total number of vehicles introduced by the end of FY2016 was 167. From the standpoint of medium-to-longterm global warming mitigation, we are working within what our budget allows to introduce more electric vehicles as company vehicles.	approx. 1,000 by end of FY2020
(B)	Thanks to careful operation and management, such as vehicle fuel efficiency management and "eco-drive" implementation, as well as performing a planned switch to higher fuel efficiency vehicles, we were able to meet our target.	12.0 or more
(B)	Thanks to such factors as the careful use of vacuum-type SF <sub>6</sub> recovery equipment during inspection and removal, we were able to meet our target.	98 or more
(B)		99 or more
(B)	By carefully performing recovery of fluorocarbons subject to regulation, reducing them to the level required by law (i.e., the pressure required by law during removal), we were able to meet our target.	100
(B)		99 or more
(B)	As a result of our careful implementation of the 3Rs, such as by using raw cement materials which make use of the properties of coal ash, ensuring 100% effective utilization of coal ash into concrete mixtures, and ensuring the thorough recovery and recycling of industrial waste by all members of our corporate group, we were able to meet our targets for each recycling rate. However, the fact that there was an increase in the amount of industrial waste disposed of at external landfills shows us that we still have a target to meet, and we are working to achieve this by improving our 3R efforts aimed at building a recycling-oriented society.	100
(B)		98 or more
(X)		- <sup>21</sup>
(B)	Thanks to our ongoing efforts to ensure 100% recycling of waste paper, we were able to meet our target.	100
(B)	Our efforts to perform green procurement as much as possible resulted in nearly 100% green procurement.	Procure as much as possible <sup>22</sup>
(B)	As a result of the stable, continuous operation (except during the schedule maintenance period) of Sendai Nuclear Power Plant, power generation by oil-fired thermal power plants declined, resulting in lower SO <sub>x</sub> and NO <sub>x</sub> results than for FY2015. We will continue to ensure that we comply with the environmental partnership agreements we have concluded with local communities by maintaining and improving heat efficiency to decrease the volume of our emissions.	Limit as much as possible <sup>23</sup>
(B)		Limit as much as possible <sup>24</sup>
(B)	Thanks to proper facilities operation and management of radioactive waste, we were able to meet our target.	under 0.001
(B)	Thanks to events involving daycares and other groups throughout Kyushu, we were able to meet our target.	200 or more <sup>25</sup>
(B)	By proactively seeking out primary schools, middle schools, etc., around Kyushu, we held almost exactly the same number of courses as FY2015.	Implement proactively

<sup>8</sup>: The Kyushu Electric Power Group aims to develop 4 million kW of renewable energy (current 1.8 million kW + an additional 2.2 million kW) domestically and overseas by 2030, focusing primarily on geothermal and hydroelectric.

<sup>9</sup>: Converted using the Comprehensive Energy Statistics calorific conversion factor, etc.

<sup>10</sup>: Ambitious development on past results from the standpoint of thorough energy conservation.

<sup>11</sup>: Value obtained by dividing water use company-wide by the total number of employees (as of the end of the fiscal year in question).

<sup>12</sup>: Revised due to increase in water use stemming from restarting of Sendai Nuclear Power Plant.

<sup>13</sup>: Includes plug-in hybrids.

<sup>14</sup>: Excludes electric vehicles.

<sup>15</sup>: No target set due to major fluctuations resulting from size, frequency, etc., of repair work.

<sup>16</sup>: From among general-use products (office products, miscellaneous goods, etc.), the purchasing ratio of products conforming to socially-recognized standards is included as a reference value.

<sup>17</sup>: Qualitative target which is set in light of the fact that this activity is essentially a permanent practice.

<sup>18</sup>: Total value of emissions for each thermal power plant (excluding internal combustion power).

<sup>19</sup>: Qualitative target due to major fluctuations resulting from utilization rate of oil-fired thermal power plants.

<sup>20</sup>: Added in order to motivate and foster greater awareness among employees with regard to energy and environmental education initiatives which are of great interest to customers.

<sup>21</sup>: Target revised in light of action plan for FY2017.