

# **Expanding Waste-Related Zero Emissions Initiatives**

We are involved in zero emissions activities which focus on appropriate waste management and disposal, together with implementation of the 3Rs (reduce, reuse and recycle), to help promote a recycling society.

## Industrial Waste Management and Disposal

The main types of industrial waste that we produce are byproducts (coal ash and gypsum) from thermal power plant operations and construction-related waste materials. We are careful to appropriately manage and dispose of this industrial waste, as well as to implement 3R measures which will reduce the amount of it that we produce, reuse as much of it as we can, and recycle what we cannot reuse.

		Amount produced (t)	Amount recycled (t)	Recycling rate (%)	Main recycling uses
Coal ash		726,672	726,672	100	Cement materials Concrete mixtures
Other industrial waste	Heavy crude oil ash	219	219	100	Vanadium recovery
	Gypsum	108,220	108,220	100	Cement materials
	Sludge	4,097	1,790	44	Cement materials
	Waste oil	1,818	1,806	99	Reuse in fuel oil
	Waste plastic	299	275	92	Combustion aid materials
	Scrap metal	18,013	17,893	99	Metallic materials
	Waste concrete poles	11,845	11,845	100	Subbase, construction aggregate
	Glass, ceramic waste	114	82	72	Glass product materials
	Industrial waste requiring special treatment*	492	414	84	Cement materials
	Other	140	140	100	Combustion aid materials
	Subtotal	145,257	142,684	98.2	
Total Industrial Waste		871,928	869,293	approx. 100	

### Industrial Waste Production Amounts and Recycling Rates (FY2017)

\*Sludge, asbestos, waste oil, waste alkali and waste acid designated as industrial waste requiring special treatment, according to the Waste Management and Public Cleansing Act, due to the risk they pose to human health and living environments.

Note: Totals may not match due to the effects of rounding.

Note: t = metric ton (tonne)

### Waste Recycling Rate Comparison with Other Companies



<sup>(</sup>nine companies), excluding Kyushu Electric Power

#### Efforts to Reduce Waste

At our power generation sites, we undertake careful maintenance risk management of the power generation facilities, and we use this as the basis for creating and implementing appropriate construction planning that reduces the amount of waste we produce.

## Efforts to Reuse Waste

Whenever power generation equipment and materials are removed during power distribution construction or other work, we appropriately assess whether or not their performance and quality meets the required threshold for reuse and, if they do, we reuse them.

## Efforts to Recycle Waste

In FY2017, we recycled nearly 100% of the roughly 870,000 metric tons of industrial waste that we produced. And with regard to coal ash, which constitutes the majority of our industrial waste, we are able to recycle 100% of it by putting it to effective use in such application as creating cement materials which utilize its distinctive properties.

Reference: See the section on environmental data (p.51) for information on trends for industrial waste production and recycling rates; the reuse of power distribution equipment; and the production, and recycling rates and amounts of industrial waste by power plant.



#### Coal Ash Production Amount and Recycling Rate

# **General Waste Management and Disposal**

The main types of general waste that we produce are office byproducts, such as waste paper, shells from power plants and dam driftwood. We are careful to appropriately manage and dispose of this general waste, as well as to implement 3R measures.

Reference: See the section on environmental data (p.51) for details on the re-collection of old paper.

Waste Paper and Other General Waste Production Amounts and Recycling Rates (FY2017)

	Amount produced (t)	Amount recycled (t)	Recycling rate (%)	Main recycling uses
Waste paper	1,153	1,153	100	Recycled paper
Shells	44	1	3	Subbase
Dam driftwood	704	697	99	Substitute for straw litter

Note: t = metric ton (tonne)

Regarding paper recycling, since our initiative began in FY2002, we have recycled 100% of our paper with recovered paper remade into photocopier or toilet paper by our group company, Records & Intelligence Management Co., Ltd.