

#### **HORIBA's Environmental Activities**

We provide a range of analytical measurement instruments and peripheral equipment required for environmental measurement. In order to fulfill social responsibilities, we also develop eco-design products with its life cycles in mind, which comply with environmental laws and regulations. At the same time, together with our suppliers, we make consistent efforts to conserve resources and energy during production. Our employees also have a strong interest in environmental issues. We participate in environmental volunteer work like cleaning and collecting trash in areas alongside river and around company offices. We deliver environmental classes in elementary and junior high schools, and participate in environmental events organized by government organizations.

## **Environmental Initiatives in 2018**

In 2018, the HORIBA Group companies in Japan adopted the following objective for environmental conservation under the Integrated (Quality, Environment and Occupational Health and Safety) Management System\* policy. We promote efforts to build safe and efficient clean factories and contribute to the protection of the global environment.

#### Objective:

- 1. 1% increase in energy use efficiency from 2017
- 2. Expand activities to reduce waste materials

Please find details of Integrated Management System

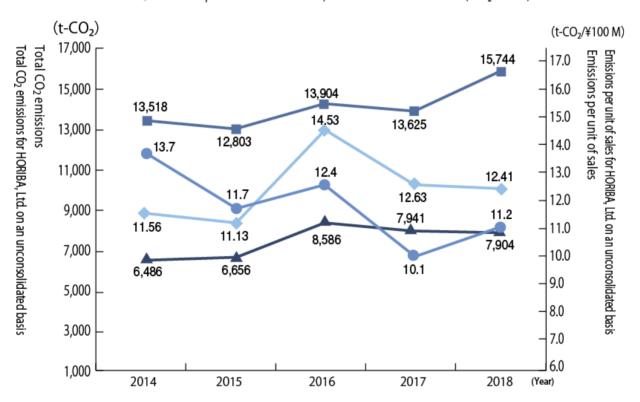


## **Energy Conservation and Initiatives to Reduce CO<sub>2</sub> Emission**

Total  $CO_2$  emissions generated by HORIBA Group companies in Japan in 2018 was 15,744 tons. This is 15.5% increase compared to the previous year. Total  $CO_2$  emissions per unit sales increased 11.0% from 2017. Also,  $CO_2$  emissions for HORIBA, Ltd. alone decreased by 0.5% to 7,904 tons compared to 2017. Emissions per unit sales resulted in a decrease of 1.8% from 2017. The increase in  $CO_2$  emissions is attributed to increased operation at semiconductor-related facilities in line with increased sales. We will continue to make use of our energy monitoring system to use our energy efficiently.

## Total CO<sub>2</sub> Emissions

- Total CO₂ emissions (t-CO₂/year)
- Emissions per unit of sales (t-CO<sub>2</sub>/¥100 M)
- Emissions per unit of sales for HORIBA, Ltd. on an unconsolidated basis (t-CO<sub>2</sub>/¥100 M)



#### \*1 CO<sub>2</sub> emission factor:

- (1) Electricity: The official values of the Kansai Electric Power Company were adopted for the Kyoto-Shiga region.

  For other regions, substitute values officially published by the Ministry of the Environment were adopted.
- (2) City gas: The official values of Osaka Gas Co., Ltd. were used in calculations.

#### \*2 City gas consumption:

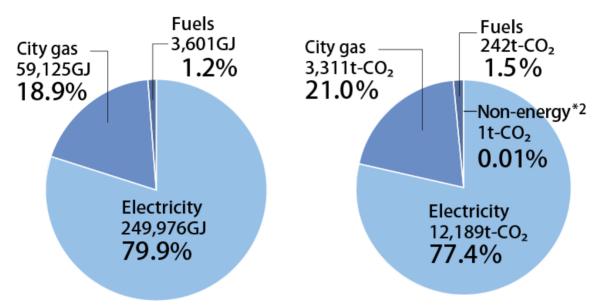
Values are converted to those In standard conditions (0°C, 1 atmospheric pressure).



# Types of Energy Consumption in 2018

(Scope: Domestic production sites\*1)

## Energy Types of Greenhouse Gas Emissions (CO<sub>2</sub> Equivalent) in 2018 (Scope: Domestic production sites\*1)



<sup>\*1</sup> Domestic production sites include the HORIBA, Ltd. head office/factory and Biwako Factory, HORIBA STEC Co., Ltd. head office/factory and Aso Factory, and HORIBA Advanced Techno Co., Ltd. head office/factory.

<sup>\*2</sup> Non-energy: Sulfur hexafluoride, perfluoromethane, etc.

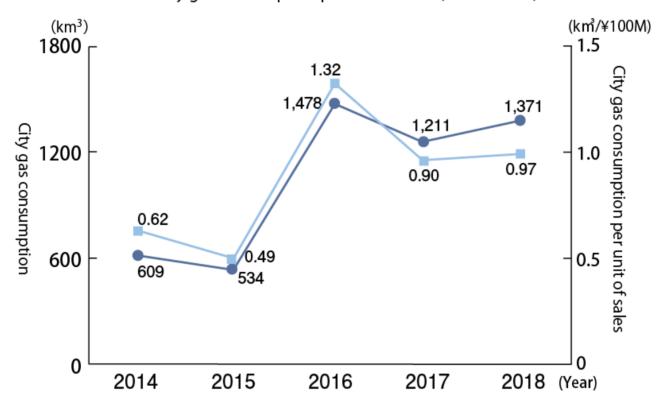


## **Energy Consumption**

## City Gas Consumption

(Scope: Domestic production sites\*)

- City gas consumption (km)
- City gas consumption per unit of sales (km² /¥100 M)



<sup>\*</sup>Domestic production sites include the HORIBA, Ltd. head office/ factory and Biwako Factory, HORIBA STEC Co., Ltd. head office/factory and Aso Factory, and HORIBA Advanced Techno Co., Ltd. head office/factory.

#### [Factor in the increase of city gas consumption]

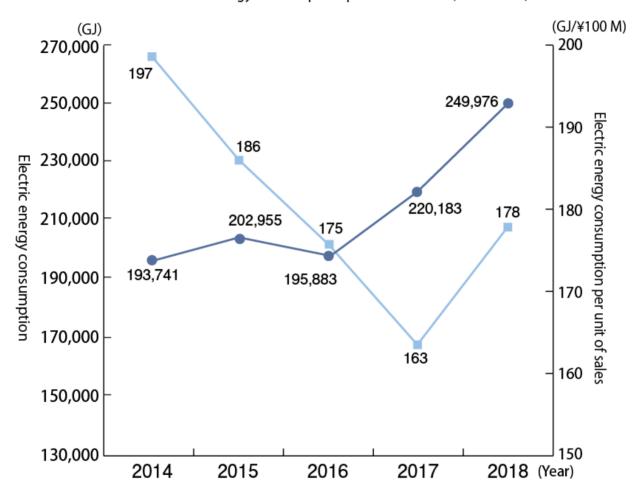
The increase in 2016 is attributed to full-operation of gas cogeneration systems installed at HORIBA BIWAKO E-HARBOR, which resulted in the increase in city gas consumption. Operation of this system was reviewed in 2017.



## **Electric Energy Consumption**

(Scope: Domestic production sites\*)

- Electric energy consumption (GJ)
- --- Electric energy consumption per unit of sales (GJ/¥100 M)



<sup>\*</sup>Domestic production sites include the HORIBA, Ltd. head office/ factory and Biwako Factory, HORIBA STEC Co., Ltd. head office/factory and Aso Factory, and HORIBA Advanced Techno Co., Ltd. head office/factory.

#### [Factor in the increase and decrease of electrical energy consumption]

For 2016, redevelopment in the Kyoto factory attributed to the reduced operations of facilities and equipment; however, business growth in 2017 and 2018 led to significant increase.

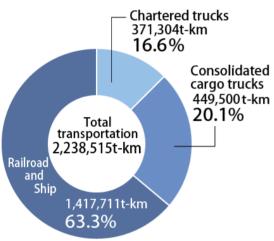


## Initiatives for Reducing CO<sub>2</sub> Emissions in Logistics

The HORIBA Group in Japan is committed to reducing  $CO_2$  emissions for product transportation. Our recent initiatives include rail and marine transport. We started using rail transport between Kyoto and Tokyo in 2004. Rail transport between Kumamoto and Tokyo starting in 2006, which was switched to marine transport in September 2013. The use of rail and marine transport cover over 60% of the total transport which led to a reduction of  $CO_2$  emissions by 300 to 400 tons every year. We remain committed to further boosting transport efficiency by, for example, joint transport with other companies.

## Railroad Utilization Rate for the Transportation of Products in 2018

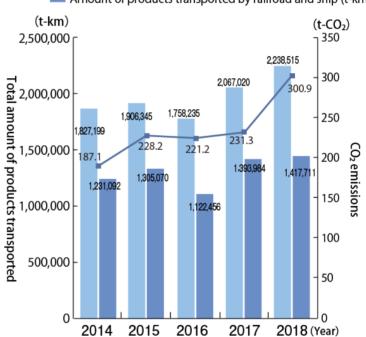
(Scope: Domestic production sites\*)



## The Amount of Products Transported and the Amount of CO<sub>2</sub> Emissions

(Scope: Domestic production sites\*)

- CO<sub>2</sub> emissions (t-CO<sub>2</sub>)
- Total amount of products transported (t-km)
- Amount of products transported by railroad and ship (t-km)



Truck (Charter) · · · · · · · · · · Improved ton-kilometer method

Truck (Mixed loading) · · · · · · · Conventional ton-kilometer method

Train · · · · · · · · · · · · · · · Cargo weight act by transport section

<sup>\*</sup>Calculation method

<sup>\*</sup>Domestic production sites include the HORIBA, Ltd. head office/factory and Biwako Factory, HORIBA STEC Co., Ltd. head office/factory and Aso Factory and HORIBA Advanced Techno Co., Ltd. head office/factory.



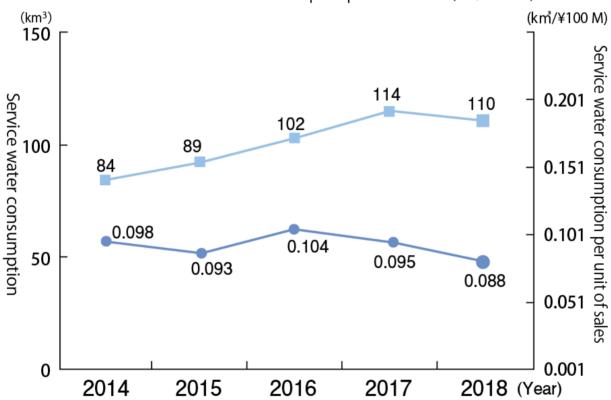
## **Use of Service Water and Monitoring of Wastewater**

The amount of service water HORIBA Group in Japan used in 2018 decreased by approximately 4% from 2017 in line with efficient operation; also, it was an 8% decrease in the total water consumption per unit sales compared to last year. In 2019, we will continue to use service water more efficiently by monitoring use of service water. Meanwhile, HORIBA, Ltd. uses a round-the-clock factory wastewater monitoring system. In 2018, there was no discharge of wastewater exceeding the Kyoto City wastewater discharge standard.

## **Service Water Consumption**

(Scope: Domestic production sites\*)

- Service water consumption (km²)
- Service water consumption per unit of sales (km²/¥100 M)



<sup>\*</sup>Domestic production sites include the HORIBA, Ltd. head office/ factory and Biwako Factory, HORIBA STEC Co.,Ltd. head office/factory and Aso Factory, and HORIBA Advanced Techno Co., Ltd. head office/factory.



## **Wastewater Measurement Categories and Trends in Measured Values**

 $Scope: \ HORIBA, \ Ltd. \ head \ office/factory \\ (Units: \ mg/L) \ except \ pH \ ^* \ Under \ detection \ limit \ so \ omitted$ 

	Regulation Category	Kyoto City Regulations	HORIBA Standards	Measured Result (maximum)		aximum)	Detection Limit Value
				2016	2017	2018	
En	рН	5~9	_	6.2~8.3	6.2~7.6	6.5~7.9	-
Environmental categories	n-Hexane extract	30	21	1.8	6.2	5.2	0.5
nme	Phenol	1	0.3	0.03	0.06	0.02	0.01
ntal	Copper	3	0.9	0.091	0.200	0.210	0.002
	Zinc	2	1.0	1.100	0.630	0.340	0.002
	Iron (soluble)	10	3.0	1.10	0.08	0.13	0.01
	Manganese (soluble)	10	3.0	0.13	0.03	0.01	0.01
	Nickel	2	0.6	0.06	0.08	0.04	0.01
Tox	Boron and its compounds	10	3.0	15	0.2	2.1	0.1
cic ostai	Fluorine and its compounds	8	4.5	10.0	0.2	0.2	0.1
Toxic substances	Cadmium and its compounds	0.03	0.03	0.014	0.005	0.011	0.001
••	Cyanogen compounds	1	0.3	*	*	*	0.1
	Lead and its compounds	0.1	0.07	0.070	*	0.010	0.01
	Hexavalent chromium	0.5	0.15	*	*	*	0.02
	Arsenic and its compounds	0.1	0.03	0.021	0.009	0.028	0.005
	Mercury and its compounds	0.005	0.0015	*	*	0.0006	0.0005
	Trichloroethylene	0.1	0.09	*	*	*	0.01
	Dichloromethane	0.2	0.14	*	*	*	0.02
	Carbon tetrachloride	0.02	0.014	*	*	*	0.002
	1,1,1-trichloroethane	3	0.9	*	*	*	0.3

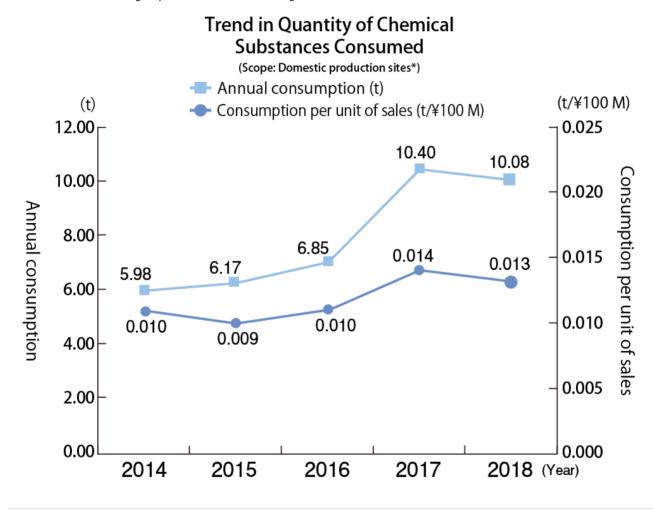
Note: Regulation figures are from Kyoto City sewage and drainage standards.



## **Use of Chemical Substance**

In 2018, HORIBA, Ltd. used 10.08 tons of substances consuming chemical substances (volume converted to total weight), generally continued to be flat from 2017. We have been keeping track of the use of PRTR\* controlled substances to ensure compliance with the revised PRTR Law. Although this law requires entities to report the use of one or more tons of a specific chemical per year (0.5 or more tons for Class 1 substances), we did not use any of the relevant chemicals to the level warranting a report in 2018. We will continue to reduce risks through our management system.

\*PRTR (Pollutant Release and Transfer Register) Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management





## **Major Chemical Substances Handled**

Scope: HORIBA, Ltd. head office/factory, BIWAKO Factory, HORIBA STEC Technology Center

			ual Am Handle			Amoun ansferr	-	Amount Recycled			
CAS No.	Substance(IUPAC)	2016	2017	2018	2016	2017	2018	2016	2017	2018	Main Application
7664-39-3	Hydrofluoric acid	10	15	22	9	14	21	0	0	0	Semiconductors and others
64-17-5	Ethanol	254	500	1,184	66	157	189	0	0	0	Clean components
67-64-1	Acetone (dimethyl ketone)	128	262	444	95	222	401	0	0	0	Clean components
507-55-1	HCFC-225 *1	48	28	42	26	6	23	0	0	6	Solvent/Product inspection
62-56-6	Thiourea	3	2	3	1	0	0	0	0	0	Regents production
7439-92-1	Lead solder	35	17	13	0	0	0	28	12	10	Printed circuit boards
7664-93-9	Piranha solution	87	108	112	87	108	112	0	0	0	Semiconductors
7722-84-1	Hydrogen peroxide	119	59	84	56	41	68	0	0	0	Liquid measurement and others
1330-20-7	Xylene	38	95	34	37	24	34	0	0	0	Semiconductors/ components

<sup>\*1:</sup> Dichloropentafluoropropane (Product: H- 997)
\*CAS No.: Numerical identification numbers for chemical substances managed by the Chemical Abstracts Service, a division of the American Chemical Society



## **PRTR Substances Managed in 2018**

Scope: HORIBA, Ltd. head office/factory, BIWAKO Factory, HORIBA STEC Advanced Technology Center Minimum target treatment quantity: 10 kg

Unit:kg

Ordi-			Added to Product	Amount Remove		mount mitted			ount sferred	
nance No. *2	Substance (IUPAC)	Annual Amount Handled	Product Delivery	Compounds Neutralized/ Decomposed/ Synthesized	Air	Water	Soil	Industrial Waste	Transferred Outside	Main Application
300	Toluene	195.5	0.0	0.0	193.9	0.0	0.0	1.6	0.0	Product development
333	Hydrazine	100.1	0.0	0.0	0.0	0.0	0.0	100.1	0.0	Semiconductors/Product manufacturing/Product inspection
185	HCFC-225 *3	41.7	6.2	0.0	6.1	0.0	0.0	23.2	6.2	Product manufacturing/Product inspection
374	Hydrogen fluoride and its water-soluble salts	37.5	0.9	0.3	0.0	0.0	0.0	36.3	0.0	Semiconductors/Product development/Product manufacturing/Product inspection
80	Xylene	34.2	0.0	0.0	0.1	0.0	0.0	34.1	0.0	Semiconductors,Clean components
82	Silver and its water- soluble compounds	33.4	3.3	0.2	0.0	0.0	0.0	0.8	29.1	Soldering printed circuit board
30	Linear alkylbenzenesulfonate *4	26.4	0.0	0.0	0.0	0.0	0.0	26.4	0.0	Semiconductors/Product development/Product manufacturing/Product inspection
20	2-aminoethanol	21.7	0.0	0.3	0.0	0.0	0.0	21.4	0.0	Semiconductors/Product manufacturing/Product inspection
305	Lead compounds	13.2	3.4	0.0	0.0	0.0	0.0	0.0	9.8	Soldering printed circuit board
	Amount	503.7	13.8	0.8	200.1	0.0	0.0	243.9	45.1	

<sup>\*1</sup> PRTR (Pollutant Release and Transfer Register) Law: Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management
\*2 Ordinance No.: Numbers given in Table 1 of the Enforcement Ordinance for the Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management

<sup>\*3</sup> Dichloropentafluoropropane: product name H-997

<sup>\*4</sup> Linear alkylbenzenesulfonic acid and its salts (alkyl C=10-14)



## Atmospheric Measurement Categories and Trends in Measured Values (at vents and site perimeters)

Scope: HORIBA, Ltd. head office/factory

\*Under detection limit so omitted

	Measurement Category	Unit	Kyoto Prefecture Regulations	Measur	ed Result (ma	aximum)	
				2016	2017	2018	
	Sulfuric acid	mg/m <sup>3</sup>	3	-	<0.1	<0.1	
At vents	Fluorine	mg/m <sup>3</sup> N	5	-	<0.5	<0.5	
	Hydrogen chloride	Vol ppm	20	-	<1	<1	
	Sulfuric acid	mg/m <sup>3</sup>	0.03	-	0.01	0.01	
At site perimeters	Fluorine	mg/m <sup>3</sup>	0.05	<0.01	<0.01	<0.01	
	Hydrogen chloride	Vol ppm	0.2	0.04	< 0.02	0.06	

Note: Regulation figures are based on ordinances to protect Kyoto Prefecture environment. Measurement at vents was not performed in 2016, 2017 due to the facility removal.

#### Scope: HORIBA STEC, Co., Ltd. head office/factory

	Measurement Category	Unit	Kyoto Prefecture Regulations	Measure	ed Result (m	aximum)
				2016	2017	2018
	Sulfuric acid	mg/m <sup>3</sup>	3	-	0.20	0.50
At vents	Fluorine	mg/m <sup>3</sup> N	5	-	< 0.5	<0.5
	Hydrogen chloride	Vol ppm	20	-	<1	<1
	Nitrogen oxide	Vol ppm	100	-	<10	<10
	Sulfuric acid	mg/m <sup>3</sup>	0.03	-	0.02	0.01
At site	Fluorine	mg/m <sup>3</sup>	0.05	-	< 0.01	< 0.01
perimeters	Hydrogen chloride	Vol ppm	0.2	-	< 0.02	0.1
	Nitrogen oxide	Vol ppm	1	-	0.058	0.039

Note: Regulation figures are based on ordinances to protect Kyoto Prefecture environment.

<sup>\*</sup>There have been no cases where the amount of hazardous substances to the air exceeded the amount decided by the law over the past three years.



## Scope: BIWAKO Factory (outlet)

Facilities	Measurement Category	Unit	Kyoto Prefecture Regulations		asured Res maximum	
				2016	2017	2018
Cogeneration generator	Nitrogen oxide	Vol ppm	600	73	133	50
Cogeneration generator	Dust	Vol ppm	0.05	<0.01	-	-
Hot-and-chilled-water	Nitrogen oxide	Vol ppm	150	16	19	16
generator	Dust	Vol ppm	0.01	<0.01	-	-
Hot-water heiler	Nitrogen oxide	Vol ppm	150	33	38	29
Hot-water boiler	Dust	Vol ppm	0.10	<0.01	-	-

Note1: Regulation figures are based on the Air Pollution Control Law. Note2: Measuring period of dust is every five years.

<sup>\*</sup> There have been no cases where the amount of hazardous substances to the air exceeded the amount decided by the law over the past three years.

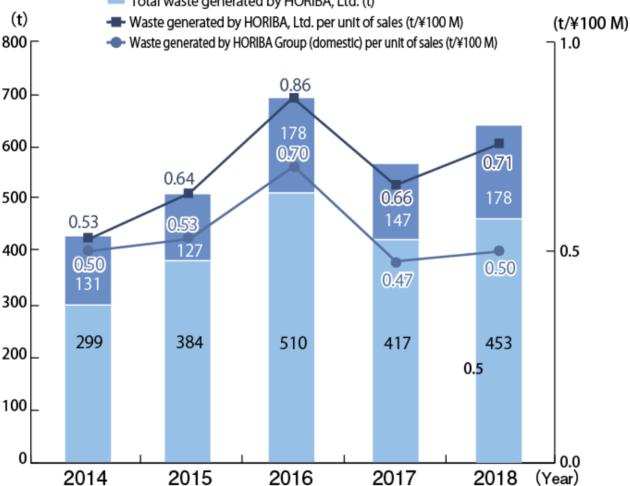


#### **Initiatives to Reduce Waste**

HORIBA, Ltd. achieved zero emissions in the second term of 2006, and we been achieving zero emission for the past five years. Since 2013, the scope expanded not only the company itself but all domestic production bases. In 2018, the amount of waste products increased by approximately 12% due to an increase in production from sales growth. We will drive further efforts to maintain zero emissions and suppress the amount of waste products.

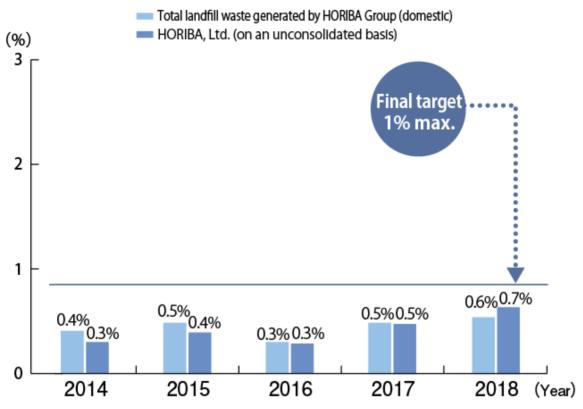
# Total Waste Generation and Waste Generation per Unit of Sales

- Total waste generated by domestic group companies (t)
- Total waste generated by HORIBA, Ltd. (t)





## Trend in Total Amount of Landfilled Waste



## Scope:

## Domestic production sites:

HORIBA, Ltd. head office/factory and Biwako Factory, HORIBA STEC, Co., Ltd. head office/factory and Aso Factory and HORIBA Advanced Techno Co., Ltd. head office/factory

## Domestic group companies:

HORIBA STEC, Co., Ltd. and HORIBA Advanced Techno Co., Ltd.

## HORIBA Group (domestic):

HORIBA, Ltd., HORIBA STEC, Co., Ltd. and HORIBA Advanced Techno Co., Ltd.



## **Overview of the Environmental Impacts: Balance in Materials**

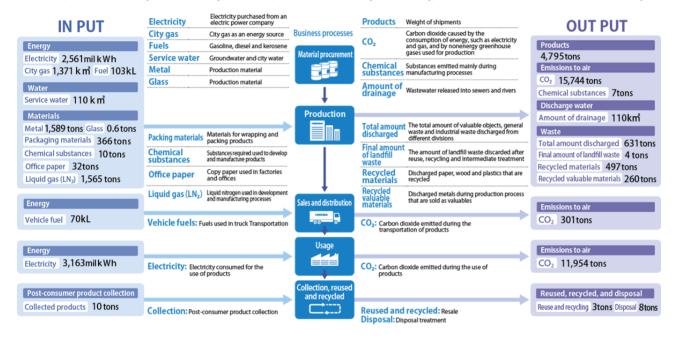
We work hard to obtain an overview of the environmental impact caused by the domestic HORIBA Group as a whole during each stage of our business activities. As for the environmental impact for 2018, both  $CO_2$  emissions and  $CO_2$  emissions per unit sales showed an upward trend due to an increase in production from sales growth. HORIBA Group will continue to proactively work on reducing environmental impact going forward.

#### (1) Balancing Environmental Impacts

## Material Flow Chart for 2018 to Determine Environmental Impacts

Scope: Domestic production sites

HORIBA, Ltd. head office/factory and Biwako Factory, HORIBA STEC, Co., Ltd. head office/factory and Aso Factory, and HORIBA Advanced Techno Co., Ltd. head office/factory





## (2) Environmental Impacts in Production Sites

**Group Companies (Production Sites)** 

Company Name	Abbreviation	Location
HORIBA Instruments Incorporated Irvine Facility	HII(Irvine)	U.S.A. (California)
HORIBA Instruments Incorporated, Ann Arbor Office	HII(AnnArbor)	U.S.A. (Michigan)
HORIBA Instruments Incorporated, Troy Office	HII(Troy)	U.S.A. (Michigan)
HORIBA Instruments Incorporated, Piscataway Office Former HORIBA Instruments Incorporated, Edison Office	HII (Piscataway) Former HII Edison	U.S.A.(New Jersey)
HORIBA Instruments Incorporated Austin Office HORIBA Instruments Incorporated Santa Clara Office Former HORIBA STEC	HII (Austin/Santa Clara) Former SHI	U.S.A. (Texas) U.S.A. (California)
HORIBA Europe GmbH	HE	Germany (Oberursel, Darmstadt)
HORIBA UK Limited	HUK	U.K.
HORIBA ABX SAS	HMFR	France (Montpellier)
HORIBA Jobin Yvon SAS	JYFR	France (Longjumeau)
HORIBA (Austria) GmbH	НА	Austria (Tulln)
HORIBA, Ltd	HOR	Japan (Kyoto)
HORIBA STEC, Co., Ltd.	STEC	Japan (Kyoto)
HORIBA Advanced Techno Co., Ltd.	HAT	Japan (Kyoto)
HORIBA KOREA LTD.	HKL	South Korea (Kyunggido)
HORIBA INSTRUMENTS (SHANGHAI) CO., LTD.	HSC	China (Shanghai)



## **Environmental Impact of Group Production Sites in 2018**

	Item/Region	U.S.A.								
	Group Company Name (Abbreviation)	HII (Irvine)	HII (AnnArbor)	HII (Troy)	HII (Piscataway)		HII (Austin/ Santa Clara)			
INPUT	Electricity consumption (MW · h)	692	839	2,700	9	91	960			
	City gas consumption (km <sup>3</sup> )	_	52	84	245		10			
	Water consumption (km³)	7.1	4.9	3.5	1	4.9	_			
	Consumption of fuel oil & fuel for vehicles (kL)	_	90	95		_	13			
	Quantity of chemicals consumed (t)	_	_	_		_	_			
	Office paper (t)	2.8	10.0	19.0	1	1.0	1.9	)		
	Packing materials (t)	_	_	_		2	_			
OUTPUT	CO <sub>2</sub> emissions (t—CO <sub>2</sub> )	408	810	1,986	1,	103	619			
	Wastewater discharge (km <sup>3</sup> )	7.1	0.9	3.5	14.9		_			
	Waste emissions (t)	28	38	41	1	.09	_			
	Number of employees (Person)	180	130	85	1	.86	79			
	Item/Region				Europ	e				
	Group Company Name (Abbreviation)		HE (	HUK Northam <sub>l</sub>	oton)	HMFR	JYFR	НА		
INPUT	Electricity consumption (MW·h)		1,796	395		3,057	4,836	40		
	City gas consumption (km <sup>3</sup> )		62	11		_	273	6		
	Water consumption (km <sup>3</sup> )		2.7	1.0		21.9	18.7	0.1		
	Consumption of fuel oil & fuel for vehicles (kL)		264	_		_	78	20		
	Quantity of chemicals consumed (t)		3	_		5	_	_		
	Office paper (t)		7.5	1.4		8.0	2.3	1.0		
	Packing materials (t)		8	_		321	_	_		
OUTPUT	CO <sub>2</sub> emissions (t—CO <sub>2</sub> )		1,648	201		153	997	66		
	Wastewater discharge (km <sup>3</sup> )		2.7	1.0		_	18.7	0.1		
	Waste emissions (t)		52	34		716	80	6		
	Number of employees (Person)		642	185		599	348	29		



	Item/Region	Asia						
	Group Company Name (Abbreviation)	HOR	STEC	HAT	HKL	HSC		
INPUT	Electricity consumption (MW·h)	11,050	13,605	957	394	1,065		
	City gas consumption (km <sup>3</sup> )	1,280	43	47	_	_		
	Water consumption (km <sup>3</sup> )	53.4	55.9	0.5	1.1	2.4		
	Consumption of fuel oil & fuel for vehicles (kL)	69	22	12	6	10		
	Quantity of chemicals consumed (t)	10	_	_	_	_		
	Office paper (t)	23.2	4.8	3.5	1.0	0.2		
	Packing materials (t)	299	67	_	1	_		
OUTPUT	CO <sub>2</sub> emissions (t—CO <sub>2</sub> )	7,904	7,117	723	146	384		
	Wastewater discharge (km³)	53.4	55.9	0.5	1.1	1.5		
	Waste emissions (t)	453	178	_	7	2		
	Number of employees (Person)	1,868	581	327	141	108		



#### (3) Environmental Impacts in Non-production Sites

	Number of locations and category	sal	RIBA, I es offic locatio	ces	se	echno Service ervice statio 26 locations	ns	recr	A, Ltd. train eation facil 2 locations	ities
	Item/Year	2016	2017	2018	2016	2017	2018	2016	2017	2018
INPUT	Electricity consumption (MWh)	576	606	656	376	385	403	255	281	258
	City gas consumption (km <sup>3</sup> )	1.1	1.3	1.3	2.7	3.0	2.2	0.3	0.3	0.3
	LP gas consumption (km <sup>3</sup> )	0	0	0	0	0	0	12	16	14
	Fuel consumption (kL)	120.5	101.5	99.2	177.7	173.7	167.2	_	_	_
	Office paper (t)	6.3	6.3	6.5	3.4	3.7	3.4	_	_	_
	Packing materials (t)	1.4	1.4	1.2	4.4	4.7	4.9	_	_	_
OUTPUT	CO <sub>2</sub> emissions (t-CO <sub>2</sub> )	577	549	569	610	607	599	202	236	197
	Waste emissions (t)	34.3	37.5	56.6	26.0	36.9	43.6	-	-	-

sales offices (12 locations)

Sapporo, Sendai, Utsunomiya, Tokyo, Yokohama, Nagoya, Toyota, Hamamatsu, Osaka, Takamatsu,

Hiroshima, Fukuoka

Service stations (26 locations)

Sapporo, Sendai, Fukushima, Utsunomiya, Ichihara, Kashima, Tsukuba, Kawaguchi, Tokyo, Kokubunji, Yokohama, Fuji, Hamamatsu, Toyota, Nagoya, Toyama, Yokkaichi, Osaka, Himeji,

Kurashiki, Hiroshima, Yamaguchi, Takamatsu, Fukuoka, Oita, Kumamoto

Training and recreation facilities (2 locations)

Takashima (Shiga Prefecture) and Kyoto