

# Environmental Issues: Tackling Global Warming

## GHG Emissions

	kt-CO <sub>2</sub> e/y			
	(FY)	2020	2021 <sup>*2</sup>	
Scope 1	10,690	3,790	3,400 <sup>+1</sup>	Direct GHG emissions from a reporting entity, due to fuel use, etc.
Scope 2	580	520	420 <sup>+1</sup>	Indirect GHG emissions from electricity and heat purchased from other entities
Scope 3	13,460	13,410	12,230	Indirect GHG emissions throughout the supply chain, such as those that occur during material procurement, transport and product processing, use and disposal
<b>Total</b>	<b>24,730</b>	<b>17,720</b>	<b>16,050</b>	

\*1 The figure with "+" mark was assured by the third party assurance. Please see the assurance statement on page 14.

\*2 Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

### Scope 3 Emissions by Category

Category	(FY)	GHG Emissions (kt-CO <sub>2</sub> e/y)		
		2020 <sup>*1</sup>	2021	2022
1 Purchased goods and services		2,040	3,080	2,490
2 Capital goods		100	40	70
3 Fuel and energy-related activities not included in Scope 1 or Scope 2		460	350	300
4 Upstream transportation & distribution		700	160	140
5 Waste generated in operations		10	20	40
6 Business travel		0	0	10
7 Employee commuting		0	10	10
8 Upstream leased assets		0	0	0
9 Downstream transportation & distribution		540	70	70
10 Processing of sold products		180	450	460
11 Use of sold products		7,650	1,510	1,630
12 End-of-life treatment of sold products		1,760	1,100	910
13 Downstream leased assets		No relevant activities		
14 Franchises		No relevant activities		
15 Investments		20	6,620 <sup>*2</sup>	6,110 <sup>*2</sup>
<b>Total</b>		<b>13,460</b>	<b>13,410</b>	<b>12,230</b>

Note: Numbers may not add up due to rounding.

\*1 Domestic activities only in fiscal 2020

\*2 Category 15 for fiscal 2021 and beyond includes equity-based shares of GHG emissions of Mitsubishi UBE Cement Corporation (former Construction Materials Company).

### GHG Emissions by Sector in Fiscal 2022

Business Sites	kt-CO <sub>2</sub> e/y		
	Scope 1	Scope 2	Total
Chemicals Business	3,230	400	3,630
Domestic	2,360	110	2,470
Thailand	600	280	880
Spain	270	10 <sup>*1</sup>	280
Machinery Business	170	20	190
<b>Total</b>	<b>3,400<sup>+2</sup></b>	<b>420<sup>+2</sup></b>	<b>3,820</b>

Note: Numbers may not add up due to rounding.

\*1 Electricity purchased externally is renewables-based.

\*2 The figure with "+" mark was assured by the third party assurance. Please see the assurance statement on page 14.

### Emissions Data by GHG Category

GHG Categories	(FY)	kt-CO <sub>2</sub> e/y		
		2020	2021 <sup>*2</sup>	2022 <sup>*2</sup>
CO <sub>2</sub>		10,410	3,390	3,140
CH <sub>4</sub> <sup>*1</sup>		10	0	0
N <sub>2</sub> O		850	920	680
HFC <sup>*1</sup>		0	0	0
PFC		0	0	0
SF <sub>6</sub> <sup>*1</sup>		0	0	0
NF <sub>3</sub>		0	0	0
<b>Total</b>		<b>11,270</b>	<b>4,310</b>	<b>3,820</b>

\*1 Less than 10,000 t-CO<sub>2</sub>e/y

\*2 Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

### GHG Emission Intensity (GHG emissions per unit of production)

	<i>t-CO<sub>2</sub>e/t-Lc</i>			
	(FY)	2020	2021*	2022*
GHG emission intensity		3.263	2.521	2.733

\* Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

### Energy Consumption Data

	<i>MWh/year</i>						Notes
	2020		2021*		2022* (FY)		
	Total	Derived from Renewable Energy	Total	Derived from Renewable Energy	Total	Derived from Renewable Energy	
Fuel consumption	19,030,000	670,000	8,417,000	0	6,131,000	0	Biomass
Purchased electricity consumption	840,000	60,000	800,000	176,000	629,000	160,000	Power from renewable energy
Purchased steam consumption	1,050,000	0	1,425,000	0	1,079,000	0	
Private power generation (renewable energy)	2,000	2,000	2,000	2,000	2,000	2,000	Solar power
<b>Total</b>	<b>20,920,000</b>	<b>730,000</b>	<b>10,644,000</b>	<b>178,000</b>	<b>7,841,000</b>	<b>162,000</b>	

Note: Numbers may not add up due to rounding.

\* Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

### Energy Type Consumption Data

Energy Type	<i>MWh/year</i>			
	(FY)	2020	2021*	2022*
Thermal coal		16,170,000	6,963,000	5,144,000
Kerosene and light oil		370,000	263,000	157,000
Liquefied natural gas		650,000	626,000	391,000
Liquefied petroleum gas		130,000	138,000	129,000
Petroleum coke		520,000	0	0
Heavy oil		270,000	201,000	122,000
Gas and oil by-products		250,000	226,000	188,000
Biomass		670,000	0	0
<b>Total</b>		<b>19,030,000</b>	<b>8,417,000</b>	<b>6,131,000</b>

\* Data for fiscal 2021 and beyond is aggregated and excludes the former Construction Materials Company.

## Environmental Issues: Water Resource Usage and Fluorocarbon Emission Restriction

### Water Resource Usage

#### UBE Group Water Resource Usage (Fiscal 2018 through 2022)

Scope of coverage: [UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants. See page 16 for details.](#)

			(FY)	2018	2019	2020	2021	2022	
Water resource withdrawals (Millions of cubic meters)	Chemicals Business	Tap water		0.2	0.2	0.2	0.2	0.2	
		Groundwater		2.0	2.0	2.0	2.2	2.0	
		Industrial water		79	84	81	83	64	
		Seawater		105	114	107	115	302* <sup>1</sup>	
		Subtotal		186	200	190	200	369** <sup>2</sup>	
	Machinery Business	Tap water		0.1	0.1	0.2	0.1	0.1	
		Groundwater		0.0	0.0	0.0	0.0	0.0	
		Industrial water		0.9	1.0	1.0	0.9	0.8	
		Seawater		0.0	0.0	0.0	0.0	0.0	
		Subtotal		1.0	1.1	1.2	1.0	1.0	
Total (UBE Group)				187	201	191	201	370	
Water discharges (Millions of cubic meters)	Chemicals Business	Sewers		0.0	0.0	0.0	0.0	0.0	
		Rivers and lakes		2.1	2.1	2.1	2.2	2.1	
		Ocean areas		140	156	145	152	342* <sup>1</sup>	
		Subtotal		142	158	147	154	345	
	Machinery Business	Sewers* <sup>3</sup>		0.0	0.0	0.0	0.0	0.0	
		Rivers and lakes		0.0	0.0	0.0	0.0	0.0	
		Ocean areas		0.8	0.9	0.8	0.8	0.7	
		Subtotal		0.8	0.9	0.8	0.8	0.7	
	Total (UBE Group)				143	159	148	155	345

\*<sup>1</sup> Including cooling seawater for private power generation

\*<sup>2</sup> The figure with "+" mark was assured by the third party assurance. Please see the assurance statement on page 14.

\*<sup>3</sup> Wastewater volume 10,000 m<sup>3</sup> or less

### Response to the Fluorocarbon Emission Restriction Law

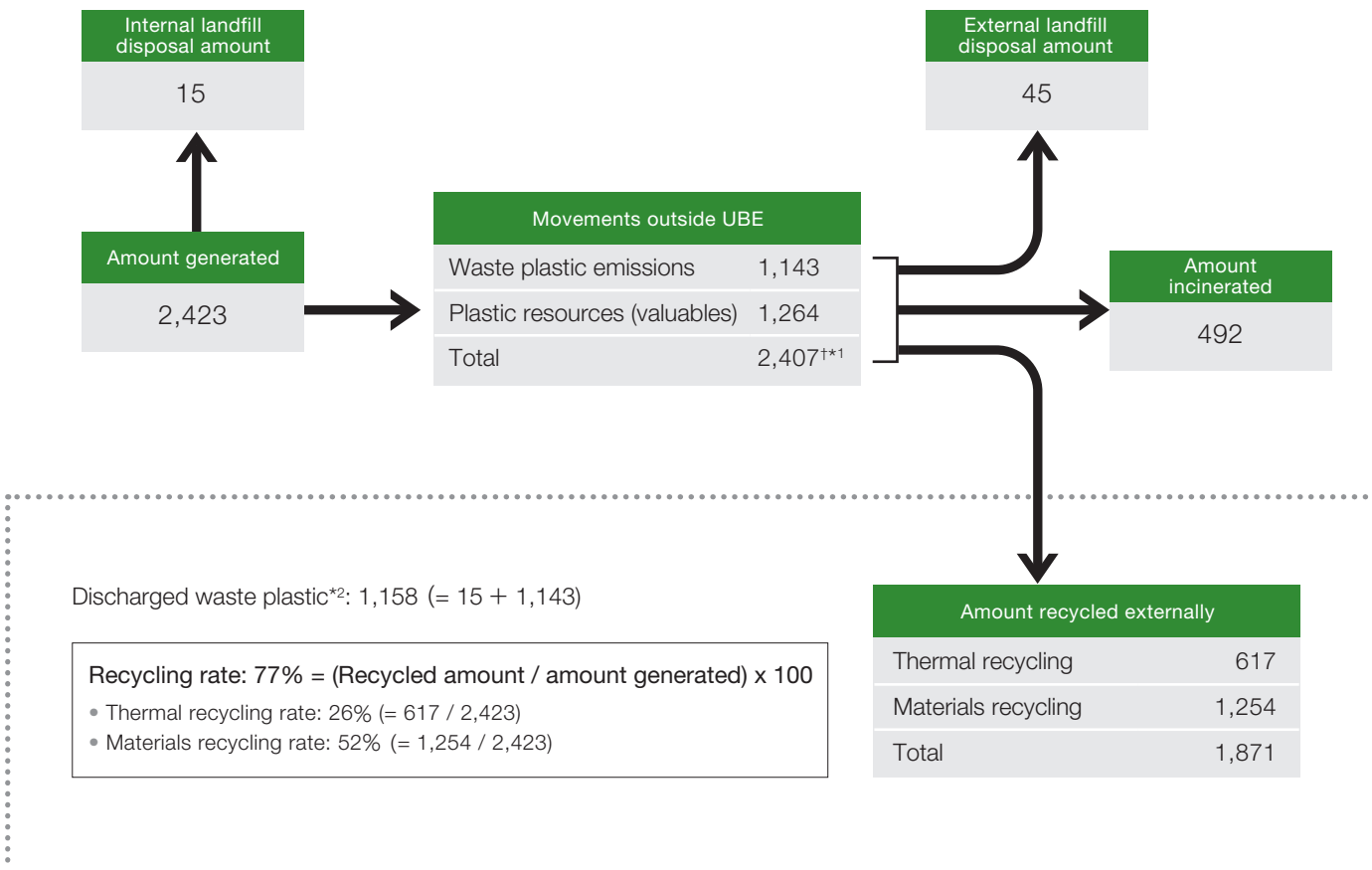
Promulgated in April 2015, the Act on Rational Use and Appropriate Management of Fluorocarbons is aimed at reducing leaks of fluorocarbon refrigerants (chlorofluorocarbon, hydrochlorofluorocarbon, and hydrofluorocarbon) to help prevent global warming and the further destruction of the ozone layer. We comply strictly with laws and regulations relating to chlorofluorocarbon refrigeration and air conditioning equipment inspections. We endeavor to prevent fluorocarbon leaks by improving their recovery and filling methods and strengthening equipment operations management.

We are systematically replacing chlorofluorocarbon refrigeration equipment from our processes with alternatives that use low global warming potential hydrofluorocarbons or non-chlorofluorocarbon refrigerants.

# Environmental Issues: Recycling Plastic Resources

## Flow of Plastic Resources (UBE Corporation, Fiscal 2022)

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\*1 The figure with "†" mark was assured by the third party assurance. Please see the assurance statement on page 14.

\*2 Including in-house internal landfill disposal and recycled amount that are subject to calculation under the Plastic Resource Circulation Act

The Plastic Resource Circulation Act, which went into effect in April 2022, requires businesses to minimize and recycle waste plastic. UBE's efforts to use plastic resources effectively resulted in a 77% recycling rate in fiscal 2022. We will continue to push ahead with plastic recycling.

Data covers eight UBE business sites. These are the Sakai Factory, Ube Chemical Factory, Ube Chemical Factory Fujimagari Area, Ube Electronic and Industrial Materials Factory, Ube Research Laboratory, Pharmaceutical Research Laboratory, Future Tech Laboratory, and Osaka Research & Development Center.