

# Environmental Preservation: Environmental Performance and Environmental Accounting

## Environmental Performance

### Overview of Group Environmental Impact (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 <sup>Note 2</sup> |
|---|---|------|--------|--------|--------|--------|------------------------|
| Total energy                              | Crude oil equivalent (Thousands of MWh) |      | 21,970 | 22,140 | 20,920 | 21,340 | 7,841                  |
| Total raw materials (Thousands of tons)   |   |      | 16,383 | 16,298 | 15,381 | 15,819 | 2,177                  |
| Water resources (Million m <sup>3</sup> ) | Freshwater used                         |      | 92     | 97     | 94     | 96     | 68                     |
|   | Seawater used                           |      | 106    | 115    | 108    | 116    | 302 <sup>Note 1</sup>  |

Input

Business activities (manufacturing) of the UBE Group

Output

|                            |                                       | (FY) | 2018    | 2019    | 2020    | 2021    | 2022                  |
|----------------------------|---------------------------------------|------|---------|---------|---------|---------|-----------------------|
| Airborne emissions         | GHG (kt-CO <sub>2</sub> e/y)          |      | 12,010  | 12,110  | 11,270  | 11,840  | 3,820                 |
|                            | SOx* <sup>1</sup> (t)                 |      | 2,873   | 2,652   | 2,589   | 2,296   | 1,095                 |
|                            | NOx* <sup>2</sup> (t)                 |      | 16,149  | 16,071  | 15,274  | 14,956  | 3,275                 |
|                            | Dust (t)                              |      | 356     | 371     | 392     | 364     | 115                   |
|                            | PRTR substances* <sup>3</sup> (t)     |      | 198     | 180     | 190     | 194     | 143                   |
| Soil emissions             | PRTR substances (t)                   |      | 0       | 0       | 0       | 0       | 0                     |
| Waterborne emissions       | Wastewater (Million m <sup>3</sup> )  |      | 147     | 163     | 152     | 159     | 345 <sup>Note 1</sup> |
|                            | COD* <sup>4</sup> (t)                 |      | 642     | 705     | 658     | 687     | 1,347                 |
|                            | Total phosphorus (t)                  |      | 9       | 11      | 10      | 11      | 18                    |
|                            | Total nitrogen (t)                    |      | 468     | 466     | 420     | 455     | 466                   |
|                            | PRTR substances (t)                   |      | 97      | 112     | 82      | 91      | 72                    |
| Industrial waste emissions | External landfill disposal amount (t) |      | 6,730   | 6,463   | 6,267   | 5,895   | 5,159                 |
|                            | Recycled volume (t)                   |      | 370,451 | 389,000 | 340,543 | 379,024 | 214,755               |

Notes: 1. Fiscal 2022 data includes cooling seawater for private power generation.

2. Fiscal 2022 data excludes the former Construction Materials Company.

The UBE Group is committed to extensively managing atmospheric and water emissions of pollutants and contaminants, and endeavors to comply with agreements and voluntary standards. We are endeavoring to lower our environmental impact, managing it by checking progress with reduction plans in Strategic Management Meeting and undertaking PDCA cycles. We will keep pursuing business activities that contribute to a circular economy by tackling environmental issues, lowering and using industrial waste, and constraining chemical substance emissions.

## Environmental Accounting

### Environmental Preservation Costs

|   |  |  |                    | (Hundred millions of yen) |            |       |      |            |  |
|---|--|--|--------------------|---------------------------|------------|-------|------|------------|--|
| Category                                  | Main Activity  | (FY)   | Capital Investment |                           |            | Costs |      |            |  |
|   |  |  | 2021               | 2022                      | Difference | 2021  | 2022 | Difference |  |
| Cost by business area                     | Pollution prevention   | Investing in and maintaining air pollution prevention facilities and water pollution prevention facilities | 13.6               | 9.6                       | (4.0)      | 44.2  | 36.2 | (8.0)      |  |
|   | Global environment preservation                                      | Investing in and maintaining energy-saving facilities  | 6.1                | 2.7                       | (3.4)      | 33.4  | 1.5  | (31.9)     |  |
|   | Resource recycling   | Recycling and reducing industrial waste  | 2.6                | 0.1                       | (2.5)      | 32.1  | 8.7  | (23.4)     |  |
| Upstream/downstream costs                 | Container/packaging recycling, green purchasing                      |  | 0.0                | 0.0                       | 0.0        | 9.0   | 5.4  | (3.6)      |  |
| Costs of management activities            | Acquiring, running, and maintaining environmental management systems |  | 0.0                | 0.0                       | 0.0        | 5.1   | 3.1  | (2.0)      |  |
| Research and development costs            | R&D of environmentally friendly products and technologies            |  | 0.0                | 0.0                       | 0.0        | 1.7   | 0.8  | (0.9)      |  |
| Costs of social activities                | Greening and beautifying offices/facilities and their surroundings   |  | 0.2                | 0.2                       | 0.0        | 3.9   | 0.8  | (3.1)      |  |
| Costs of cleaning up environmental damage | Payment of environment-related levy                                  |  | 0.0                | 0.0                       | 0.0        | 1.3   | 0.9  | (0.4)      |  |
| Total                                     |  |  | 22.5               | 12.6                      | (9.9)      | 130.7 | 57.4 | (73.3)     |  |

### Economic Effect

|                |   | (Hundred millions of yen) |      |      |            |      |      |            |
|----------------|---|---------------------------|------|------|------------|------|------|------------|
| Category       | Main Activity   | (FY)                      | 2021 | 2022 | Difference | 2021 | 2022 | Difference |
| Income effect  | Proceeds from sales of marketable waste products                    |                           |      |      |            | 42.1 | 6.7  | (35.4)     |
| Savings effect | Savings achieved through resource recycling and energy conservation |                           |      |      |            | 66.4 | 31.5 | (34.9)     |

### Glossary

\*1 Sulfur oxides (SOx) originate in the sulfur (S) component of fuels. Boilers are our main source of these oxides.

\*2 Nitrogen oxides (NOx) stem from fuel combustion, primarily from Group boilers.

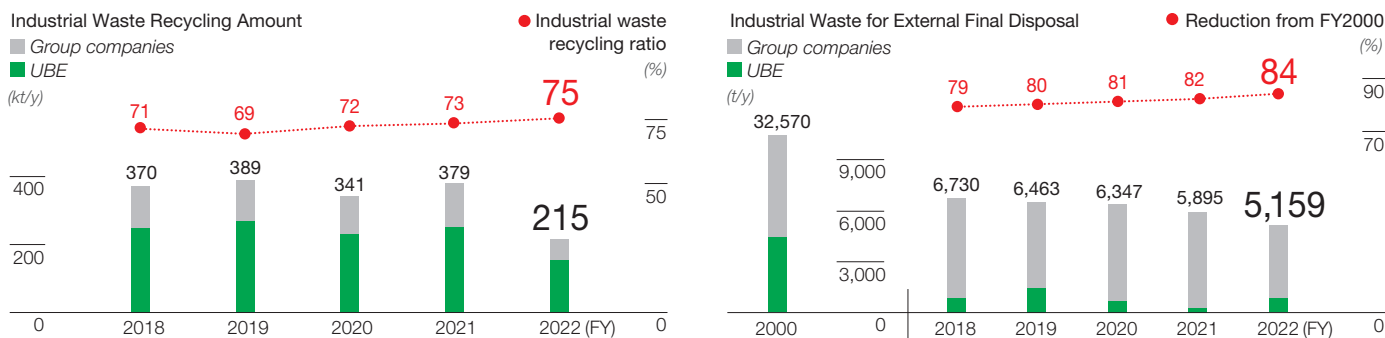
\*3 PRTR (Pollutant Release and Transfer Register) Law: Please see the Glossary on page 2.

\*4 Chemical Oxygen Demand (COD): This is an indicator of water pollution by organic substances and represents the amount of oxygen consumed in the chemical oxidation of organic matter.

# Environmental Preservation: Industrial Waste and PCB Waste

## Reducing Industrial Waste

Scope of coverage: *UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants (see page 16), representing 70% of such subsidiaries*



### Waste for External Final Disposal

**Fiscal 2024 target: 87% reduction from fiscal 2000 level**

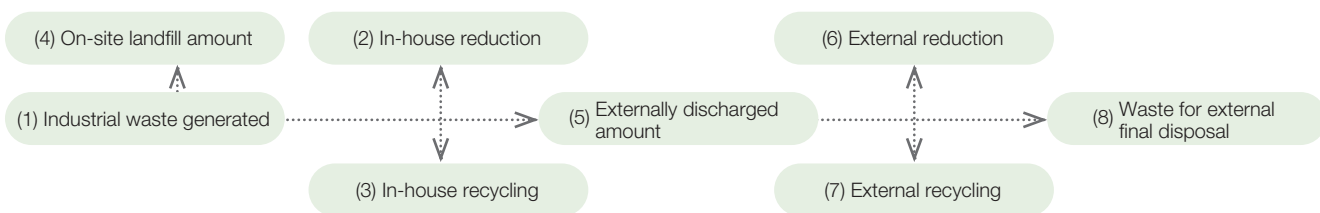
The UBE Group is reducing and recycling industrial waste to help create a circular economy. Our medium-term goal is to cut external final disposal by 87% from the fiscal 2000 level by fiscal 2024. We have taken steps to reach that target. In fiscal 2022, our external landfill disposal amount was 84% below that of fiscal 2000. We will keep striving to reduce industrial waste.

### Overall Flow of Industrial Waste

| (FY) | In-House                       |                |               |                    | External              |                |               |                    |              |
|------|--------------------------------|----------------|---------------|--------------------|-----------------------|----------------|---------------|--------------------|--------------|
|      | (1) Industrial waste generated | (2) Reduction  | (3) Recycling | (4) Final disposal | (5) Discharged amount | (6) Reduction  | (7) Recycling | (8) Final disposal |              |
| 2018 | 517,033                        | 120,719        | 242,835       | 207                | 155,272               | 20,685         | 127,616       | 4,971              |              |
| 2019 | 561,591                        | 145,425        | 247,568       | 263                | 168,335               | 20,440         | 141,432       | 6,463              |              |
| 2020 | 476,127                        | 105,940        | 220,559       | 126                | 149,502               | 23,171         | 119,984       | 6,347              |              |
| 2021 | 522,644                        | 114,866        | 233,175       | 127                | 174,476               | 22,732         | 145,849       | 5,895              |              |
|      | Chemicals Business             | 234,247        | 46,743        | 9,180              | 706                   | 177,618*       | 18,239        | 158,523            | 856          |
| 2022 | Machinery Business             | 51,534         | 0             | 31,476             | 0                     | 20,058         | 179           | 15,576             | 4,303        |
|      | <b>Total</b>                   | <b>285,780</b> | <b>46,743</b> | <b>40,656</b>      | <b>706</b>            | <b>197,676</b> | <b>18,418</b> | <b>174,099</b>     | <b>5,159</b> |

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

Scope of coverage: *UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants. See page 16 for details.*



## Polychlorinated Biphenyl (PCB) Waste Disposal

We thoroughly audit stabilizers and other equipment using PCBs. In addition, we are endeavoring to complete PCB waste disposals by the deadline set under the amended Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes. We comply with storage and disposal laws and ordinances processing, and utilize Japan Environmental Storage & Safety Corporation (JESCO) and certified detoxification contractors to systematically dispose of PCB waste.

### Number of Units of Equipment Incorporating PCB Stored (As of April 2023 for UBE Corporation)

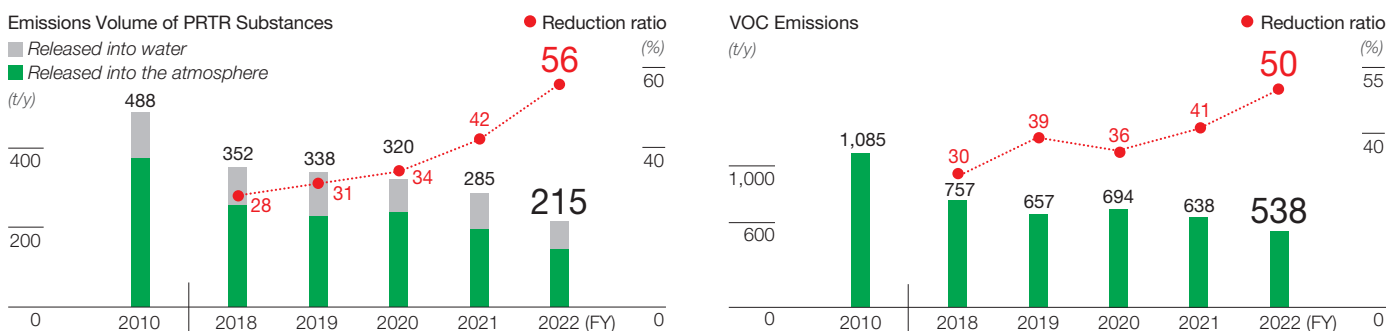
|                        | In Use | In Storage | Total |
|------------------------|--------|------------|-------|
| High-concentration PCB | 0      | 0          | 0     |
| Low-concentration PCB  | 23     | 26         | 49    |

UBE Corporation completely disposed of high-concentration PCB waste in fiscal 2021. It is endeavoring to systematically collect and dispose of all low-concentration PCB waste by the deadline set under the amended Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes.

# Environmental Preservation: Suppressing Chemical Substance Emissions and Emissions of Substances Covered by PRTR Law

## Suppressing Chemical Substance Emissions

Scope of coverage: *UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants (see page 16), representing 70% of such subsidiaries*



### Total Emissions of 20 Chemical Substances

Fiscal 2024 Target: 32% reduction from fiscal 2010 level

The UBE Group accorded Companywide priority to 20 key chemical substances\*<sup>3</sup> with high emission volumes from among those subject to the PRTR Law\*<sup>1</sup> and VOCs\*<sup>2</sup>, and endeavors to control their emissions. In fiscal 2022, we reduced the total emissions of 20 chemical substances by 38% from the fiscal 2010 level (in terms of PRTR substances and VOC emissions reductions, as shown above, down 56% and 50%, respectively, from fiscal 2010). The reduction target for fiscal 2024 is 32%. We will continue to cut our emissions.

#### Total Volume of PRTR Substances Emitted/Transferred in Fiscal 2022

|                       | Handling Volume (t) | Emissions Volume (t) |              |      |       | Transfer Volume (t) | Number of PRTR Substances |
|-----------------------|---------------------|----------------------|--------------|------|-------|---------------------|---------------------------|
|                       |                     | Atmosphere           | Public Water | Soil | Total |                     |                           |
| UBE                   | 186,418             | 94.4                 | 71.6         | 0.0  | 166.0 | 3,462               | 55                        |
| Other Group companies | 107,397             | 49.0                 | 0.0          | 0.0  | 49.0  | 262                 | 13                        |
| Total (UBE Group)     | 293,816             | 143.4                | 71.6         | 0.0  | 215.0 | 3,724               | 68                        |

#### Volumes of Individual PRTR Substances Emitted/Transferred in Fiscal 2022 (Substances emitted 1 ton or more per year and dioxins)

| Ordinance Designation No. | Chemical Substance                            | Handling Volume (t) | Total Emissions Volume (t) |              |      |       | Transfer Volume (t) |
|---------------------------|---|---------------------|----------------------------|--------------|------|-------|---------------------|
|                           |   |                     | Atmosphere                 | Public Water | Soil | Total |                     |
| 300                       | Toluene                                       | 835                 | 55.4                       | 13.9         | 0.0  | 69.3  | 203.3               |
| 76                        | Epsilon-caprolactam                           | 97,916              | 0.0                        | 49.9         | 0.0  | 49.9  | 251.3               |
| 104                       | Chlorodifluoromethane                         | 20                  | 20.3                       | 0.0          | 0.0  | 20.3  | 0.0                 |
| 400                       | Benzene                                       | 66                  | 12.9                       | 0.1          | 0.0  | 13.0  | 0.0                 |
| 128                       | Chloromethane                                 | 12                  | 12.3                       | 0.0          | 0.0  | 12.3  | 0.0                 |
| 80                        | Xylene  | 128                 | 10.4                       | 0.0          | 0.0  | 10.4  | 11.4                |
| 53                        | Ethylbenzene                                  | 23                  | 9.4                        | 0.0          | 0.0  | 9.4   | 10.7                |
| 213                       | N,N-dimethylacetamide                         | 605                 | 8.2                        | 0.0          | 0.0  | 8.2   | 267.6               |
| 240                       | Styrene                                       | 186                 | 4.9                        | 0.0          | 0.0  | 4.9   | 0.6                 |
| 405                       | Boron compound                                | 27                  | 0.1                        | 4.3          | 0.0  | 4.4   | 6.2                 |
| 374                       | Hydrogen fluoride and its water-soluble salts | 5                   | 0.0                        | 2.6          | 0.0  | 2.6   | 0.4                 |
| 349                       | Phenol  | 76,213              | 1.9                        | 0.1          | 0.0  | 2.0   | 1,342.1             |
| 13                        | Acetonitrile                                  | 525                 | 1.8                        | 0.0          | 0.0  | 1.8   | 426.1               |
| 296                       | 1,2,4-Trimethylbenzene                        | 123                 | 1.6                        | 0.0          | 0.0  | 1.6   | 3.1                 |
| 351                       | 1,3-Butadiene                                 | 105,045             | 1.6                        | 0.0          | 0.0  | 1.6   | 0.0                 |
| 243                       | Dioxins <sup>(Note)</sup> mg-TEQ/year         | —                   | 83.3                       | 2.5          | 0.0  | 85.8  | 0.0                 |

Note: Contains various compounds

Scope of coverage: *UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants (see page 16), representing 70% of such subsidiaries*

#### Glossary

\*1 PRTR (Pollutant Release and Transfer Register) Law: Please see the Glossary on page 2.

\*2 Volatile organic compounds (VOCs): Please see the Glossary on page 2.

\*3 UBE's 20 voluntary selected chemical substances: Please see the Glossary on page 2.

# Environmental Preservation: Environmental Impact Data by Facility

## Fiscal 2022 Environmental Impact Data by Facility

|                           |   |   | Emissions into the Atmosphere (t/y) |                   |       | Emissions into Water (t/y) |                  |                |
|---------------------------|---|---|-------------------------------------|-------------------|-------|----------------------------|------------------|----------------|
|                           |   |   | SOx* <sup>1</sup>                   | NOx* <sup>2</sup> | Dust  | COD* <sup>3</sup>          | Total Phosphorus | Total Nitrogen |
| <b>In Japan</b>           |   |   |                                     |                   |       |                            |                  |                |
| <b>Chemicals Business</b> | UBE   | Sakai Factory / Osaka Research & Development Center                                     | 0.0                                 | 1.4               | 0.0   | 0.7                        | 0.0              | 0.7            |
|                           |   | Ube Chemical Factory east and west area   | 17                                  | 59                | 2.1   | 398                        | 5.5              | 352            |
|                           |   | Ube Chemical Factory Fujimagari Area  | 530                                 | 333               | 2.5   | 203                        | 5.0              | 50             |
|                           |   | Power Management Dept. (private power generation)                                       | 532                                 | 2,755             | 100   | 713                        | 6.4              | 48             |
|                           |   | Ube Electronic and Industrial Materials Factory (Former Meiwa Plastic Industries, Ltd.) | —                                   | —                 | —     | 0.0                        | 0.0              | 0.0            |
|                           |   | Ube Research Laboratory / Pharmaceutical Research Laboratory                            | —                                   | —                 | —     | 0.2                        | 0.0              | 0.2            |
|                           |   | Future Tech Laboratory (Former Chiba Research Laboratory)*                              | —                                   | —                 | —     | 0.0                        | 0.0              | 0.0            |
|                           |   | Subtotal  | 1,079                               | 3,149             | 105   | 1,315                      | 17               | 451            |
|                           |   | API Corporation   | 2.6                                 | 5.9               | 0.1   | 12.6                       | 0.3              | 10.2           |
|                           |   | UBE Elastomer Co. Ltd.  | 0.6                                 | 31.7              | 0.2   | 11.5                       | 0.1              | 3.3            |
|                           | Ube Film, Ltd.                              | —   | —                                   | —                 | —     | —                          | —                |                |
|                           | UBE Hydrogen Peroxide, Ltd.*                | 0.0   | 0.0                                 | 0.0               | 0.4   | 0.0                        | 0.3              |                |
|                           | UBE EXSYMO CO., LTD.                        | 0.0   | 0.6                                 | 0.1               | 3.7   | 0.0                        | 0.0              |                |
|                           | Total (Chemicals Business)                  | 1,082   | 3,187                               | 105               | 1,343 | 17                         | 465              |                |
| <b>Machinery Business</b> | UBE Machinery Corporation, Ltd.             | 0.1   | —                                   | —                 | 1.1   | 0.2                        | 1.4              |                |
|                           | UBE Steel Co., Ltd.                         | 13  | 88                                  | 9.4               | 2.6   | —                          | —                |                |
|                           | Fukushima Ltd.                              | —   | —                                   | —                 | —     | —                          | —                |                |
|                           | Total (Machinery Business)                  | 13  | 88                                  | 9.4               | 3.7   | 0.2                        | 1.4              |                |
| Total (UBE Group)         |   |   | 1,095                               | 3,275             | 115   | 1,347                      | 18               | 466            |
| <b>Overseas</b>           |   |   |                                     |                   |       |                            |                  |                |
| Spain                     | UBE Corporation Europe, S.A. Unipersonal    |   | 8                                   | 442               | 5.5   | 130                        | 1.0              | 58             |
| Thailand                  | UBE Chemicals (Asia) Public Company Limited |   | 3.5                                 | 20                | 4.7   | 29                         | 0.7              | 1.9            |
|                           | THAI SYNTHETIC RUBBERS COMPANY LIMITED      |   | 0.0                                 | 0.0               | 1.1   | 18                         | 0.0              | 0.0            |
|                           | UBE Fine Chemicals (Asia) Co., Ltd.         |   | 0.0                                 | 4.8               | 0.2   | —                          | —                | —              |
| Total                     |   |   | 11                                  | 468               | 11    | 177                        | 2                | 60             |

\* These sites reorganized or changed their names in fiscal 2023. See Reorganizations and Renamings on page 16 for details.

Scope of coverage: [UBE's domestic plants and laboratories and key domestic consolidated subsidiaries with plants \(see page 16\)](#), representing 70% of such subsidiaries

### Glossary

\*1 Sulfur oxides (SOx): Please see the Glossary on page 10.

\*2 Nitrogen oxides (NOx): Please see the Glossary on page 10.

\*3 Chemical Oxygen Demand (COD): Please see the Glossary on page 10.