Pursuing high-efficiency manufacturing that simultaneously reduces environmental impacts and costs.

### Actions to address the three challenges in Environmental Vision 2050

#### Mitigation of Climate Change

**Social issues**
- Setting goals for GHG emissions in Japan in accordance with Paris Agreement
- Proposing improving the energy efficiency of manufacturing processes (1% annually on average) under Electrical and Electronics Industries’ "Action Plan for Commitment to a Low-Carbon Society"
- Increased energy demand

**Risks and opportunities for Toshiba Group**

**Risks:**
- Regulation of business activities, increased facility investment, possible loss of reputation if GHG emissions increase
- Increased energy demand

**Opportunities:**
- Reduced manufacturing costs by implementing energy-saving measures at production sites

**Toshiba Group’s policy**
- Reducing GHG emissions in terms of total amount and amount per unit activity

#### Efficient Use of Resources

**Social issues**
- Serious resource depletion
- Transition to a circular economy that promotes recycling, reuse, and product longevity

**Risks and opportunities for Toshiba Group**

**Risks:**
- Increased management costs if stricter waste regulations are imposed
- Loss of business opportunities and reputation if illegal waste dumping or other legal violations occur
- Effects on production activities in regions with high water risks

**Opportunities:**
- Reduced manufacturing costs by reducing the amount of waste and water resources used

**Toshiba Group’s policy**
- Improvement in the amount of waste generated and water received

#### Management of Chemicals

**Social issues**
- Minimizing risks caused by chemicals
- Managing chemicals based on the precautionary principle

**Risks and opportunities for Toshiba Group**

**Risks:**
- Increased management costs if stricter regulations are imposed to chemical management
- Loss of business opportunities and reputation if legal violations occur

**Opportunities:**
- Increased business opportunities due to greater needs in related businesses (e.g., advanced wastewater treatment systems)
- Improvement in the total amount of chemicals discharged, soil and groundwater purification, and preventing contamination
- Environmental risk prevention, including identifying and managing environmental liabilities
Toshiba Group is pursuing high-efficiency manufacturing that minimizes resource inputs in production processes in Japan and abroad, eliminates unnecessary tasks in manufacturing processes, and reduces to a minimum emissions into the atmosphere and waters, thus simultaneously reducing environmental impacts and costs.

We aim to contribute to resolving climate change and other environmental issues by promoting the following two initiatives: "improvement of plant efficiency," which refers to efforts to grasp energy consumption appropriately in order to ensure effective improvement of equipment operation and introduce high-efficiency equipment, and "process innovation," which aims to achieve sustainable manufacturing in collaboration with all involved divisions.

In terms of mitigation of climate change, Toshiba Group is actively taking energy-saving measures on a company-wide scale to reduce emissions of greenhouse gases, including CO₂ and perfluorocarbons (PFCs). In terms of efficient use of resources, we will continue our efforts to reduce the total volume of waste generated through 3R activities as well as strive to use water resources efficiently by various means, including utilizing water risk assessment tools. As for management of chemicals, we will make efforts to reduce environmental impact mainly through the introduction of alternative substances and process improvements.
Reduction of total GHG emissions

Toshiba Group proactively installed systems to collect and/or remove sulfur hexafluoride (SF₆), which is used to insulate heavy electric machinery, and perfluorocarbons (PFCs), which are used to produce semiconductors. As a result, in FY2000, the Group nearly halved the total amount of GHGs emitted in FY1990, and in subsequent years, GHG emissions continued to decrease as the Group steadily took measures to improve its production processes. To reduce energy-derived CO₂ emissions resulting from use of electricity, we continuously make efforts to proactively adopt energy-saving measures at our production sites, including those overseas, to improve production efficiency, as well as to introduce renewable energy.

*Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃)

Results of FY2016 and future initiatives

In FY2016, Toshiba Group reduced GHG emissions other than energy-derived CO₂ to less than 10% of the FY1990 level mainly by installing PFC removal equipment. Meanwhile, energy-derived CO₂ emissions were affected by deterioration in the CO₂ emission coefficient for electricity due to the effects of the Great East Japan Earthquake, but the Group reduced energy consumption compared to the FY2010 level by taking proactive conservation measures, including making capital investments. The CO₂ emission coefficient for electricity is expected to further deteriorate in the future, but Toshiba Group will continue to make steady efforts to reduce total GHG emissions by investing proactively in high-efficiency equipment. The Group’s goal is to reduce total GHG emissions to 1.66 million tons or less in FY2020.

Changes in total GHG emissions

<table>
<thead>
<tr>
<th>Year</th>
<th>Total GHG Emissions (10,000 t-CO₂)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>676</td>
</tr>
<tr>
<td>2000</td>
<td>380</td>
</tr>
<tr>
<td>2010</td>
<td>219</td>
</tr>
<tr>
<td>2011</td>
<td>212</td>
</tr>
<tr>
<td>2012</td>
<td>217</td>
</tr>
<tr>
<td>2013</td>
<td>267</td>
</tr>
<tr>
<td>2014</td>
<td>286</td>
</tr>
<tr>
<td>2015</td>
<td>294</td>
</tr>
<tr>
<td>2016</td>
<td>294</td>
</tr>
</tbody>
</table>

Note: The CO₂ emission coefficient for electricity is used to calculate energy-derived CO₂ emissions in Japan: 3.52 t-CO₂/10,000 kWh in FY2010, 4.75 t-CO₂/10,000 kWh in FY2011, 4.715 t-CO₂/10,000 kWh in FY2012, 5.07 t-CO₂/10,000 kWh in FY2013, 5.52 t-CO₂/10,000 kWh in FY2014, and 5.31 t-CO₂/10,000 kWh in FY2015 and FY2016. Overseas electricity is based on GHG Protocol data.

Reduction of energy-derived CO₂ emissions

Results of FY2016

Under the Fifth Environmental Action Plan, in order to assess CO₂ emissions measures consisting mainly of those for electricity conservation, the Group uses energy-derived CO₂ emissions per unit activity by fixing the CO₂ emission coefficient to FY2010. The amount of CO₂ actually emitted in FY2016 was 2.47 million tons (an increase of 700,000 tons compared to the FY2010 level), a substantial increase which was greatly affected by the deterioration of the CO₂ emission coefficient for electricity due to the Great East Japan Earthquake; however, as a result of initiatives to reduce power consumption mainly through energy-saving investments, proactive electricity conservation, and production adjustments, Toshiba Group was able to reduce energy-related CO₂ emissions per unit activity to 90% of the FY2010 level, exceeding the initial goal.

Future initiatives

In order to meet growing market demand, Toshiba Group plans to introduce more facilities. Therefore, energy-derived CO₂ emissions are likely to increase in the near future. The Group will continue its efforts to reduce CO₂ emissions per unit activity by 8% compared to the FY2013 level in FY2020 by adopting a variety of energy-saving measures, including investing in energy-saving facilities.

Changes in energy-derived CO₂ emissions per unit activity

<table>
<thead>
<tr>
<th>Year</th>
<th>Per unit real production (comparing to the FY2010 level) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>100</td>
</tr>
<tr>
<td>2000</td>
<td>98</td>
</tr>
<tr>
<td>2010</td>
<td>96</td>
</tr>
<tr>
<td>2011</td>
<td>94</td>
</tr>
<tr>
<td>2012</td>
<td>92</td>
</tr>
<tr>
<td>2013</td>
<td>91</td>
</tr>
<tr>
<td>2014</td>
<td>89</td>
</tr>
<tr>
<td>2015</td>
<td>90</td>
</tr>
<tr>
<td>2016</td>
<td>90</td>
</tr>
</tbody>
</table>

Note: The CO₂ emission coefficient for electricity is used to calculate energy-derived CO₂ emissions in Japan: 3.52 t-CO₂/10,000 kWh in FY2010, 4.75 t-CO₂/10,000 kWh in FY2011, 4.81 t-CO₂/10,000 kWh in FY2012, 5.67 t-CO₂/10,000 kWh in FY2013, 5.52 t-CO₂/10,000 kWh in FY2014, and 5.31 t-CO₂/10,000 kWh in FY2015 and FY2016.

*2 The coefficient of electricity for sites in Japan is fixed to that of FY2010.

Overseas electricity is based on GHG Protocol data.

Breakdown of GHG emissions (FY2016)

- **By business segment**
  - Electronic devices: 73%
  - Social infrastructure: 8%
  - Energy: 10%
  - Other: 3%

- **By region**
  - Asia: 9%
  - Europe: 8%
  - Americas: 11%
  - Japan: 87%

Breakdown of energy-derived CO₂ emissions (FY2016)

- **By business segment**
  - Electronic devices: 73%
  - Energy: 11%
  - Other: 4%

- **By region**
  - Asia: 11%
  - Europe: 9%
  - Americas: 85%
  - Japan: 89%
Reducing CO2 emissions associated with product logistics

- Results of FY2016 and future initiatives
  In FY2016, Toshiba Group continuously strove to reduce energy consumption during product logistics by taking various measures, including improving load factors when transporting products, applying modal shifts to a wider range of products, and shortening the transport distance by restricting distribution centers. As a result, we reduced total CO2 emissions as well as CO2 emissions per unit activity compared to the FY2015 level. In particular, the Group reduced CO2 emissions per unit activity by 22% compared to the FY2010 level, exceeding the initial target for FY2016 by 4%. In the future, Toshiba Group will continue its efforts to reduce CO2 emissions associated with product logistics.

- Changes in CO2 emissions per unit activity associated with product logistics in Japan

  ![Graph showing changes in CO2 emissions per unit activity](image)

  Per unit real production (compared to the FY2010 level) (%)

  Result: 97

  Plan: 95

  2010: 90
  2011: 88
  2012: 95
  2013: 97
  2014: 95
  2015: 94
  2016: 82

- Breakdown of CO2 emissions associated with product logistics in Japan in FY2016

  ![Pie chart showing breakdown of CO2 emissions](image)

  - Digital solutions: 6%
  - Energy: 13%
  - Electronic devices: 2%
  - Social infrastructure: 79%
  - Other: 0.5%

- CO2 emissions associated with overseas and international logistics (approximate figures)
  Toshiba Group works to collect data on overseas and international logistics for the group and calculates approximate CO2 emissions associated with such logistics for improvement.

  - Total: 309,000 t-CO2
    - International logistics: 262,000 t-CO2
      - Logistics in overseas countries: 18,000 t-CO2
      - Logistics in Japan: 29,000 t-CO2

Use of renewable energy

Toshiba Group is continuously striving to use renewable energy for a wider range of its operations. In FY2015, the Group used about 5,711 MWh’s worth of renewable energy. This means that the Group reduced CO2 emissions by about 3,033 tons. Toshiba Corporation has also used a green power system since January 2005 and has since been purchasing 1,500 MWh of electricity under a green power certificate annually.

- Calculated based on 5.31 t-CO2/10,000 kWh

Changes in CO2 emissions from employees’ business travel

Toshiba Group is working to collect data on CO2 emissions caused by employees’ business travel. The graph below indicates CO2 emissions from employees’ business travel (by air) from FY2010 to 2016. In FY2016, we continued to reduce CO2 emissions by using web conferences to reduce time spent traveling.

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Efficient Use of Resources

Reducing the total waste volume

Toshiba Group is working to reduce waste generation by minimizing the volume of waste generated per unit activity, which indicates business process efficiency improvement, as well as by reducing the total volume of waste to a level below the Earth’s environmental capacity.

- **Results of FY2016**
  In FY2016, the total volume of waste generated per unit activity was 83% compared to that of FY2010, exceeding the initial target. The volume of waste (excluding that of objects with value) totaled 77,000 tons, which is 33,000 tons lower than the initial target. Out of the total volume of waste, the amount of hazardous waste was 4,105 kg in FY2000, 12 kg for FY2014, 6 kg for FY2015, and 3 kg for FY2016.

- **Future initiatives**
  In the Sixth Environmental Action Plan, Toshiba Group aims to reduce the volume of waste per unit activity in FY2020 by 4% compared to FY2013 and to reduce the total volume of waste to 52,000 tons. We will promote dialogues with stakeholders inside and outside the Group and create diverse networks for resource recycling.

- **Waste volume and total volume of waste generated per unit activity**

- **Breakdown of the total volume of waste generated (FY2016)**

- **Promoting recycling**
  In FY2016, Toshiba Group recycled 209,000 tons of resources. 97% of the total volume of waste generated was reused effectively as various resources. The recycled resources consisted mainly of scrap metal and cinders, and 96% of them were used effectively for material recycling (recycled into materials for products), and the remaining 4% for thermal recycling (heat recovery).
  In the future, Toshiba Group will continue to increase the total volume of resources recycled and at the same time will strive for higher quality recycling chiefly by increasing the percentage of resources recycled into materials.

Reducing the final disposal volume

In order to create a sound material-cycle, sustainable society, Toshiba Group is working to achieve zero waste emission—an initiative of reducing final landfills to zero by promoting the reuse and recycling of waste.

- **Results of FY2016**
  The percentage of final landfills to the total volume of waste generated by Toshiba Group in FY2016 was 0.55%, falling short of the initial target of 0.5%, though an improvement of 0.22% compared to FY2015. Out of the final disposal volume, the amount of hazardous waste was 169 kg for FY2000, 12 kg for FY2014, 6 kg for FY2015, and 3 kg for FY2016.

- **Future initiatives**
  We will maintain the current status at the sites that have reduced the percentage of final landfills to 0.5%, and continue our efforts at sites that have not yet achieved the goal. We will manage progress made and measures taken at different sites through the Toshiba Group’s environmental audit system.

- **Breakdown of the final waste disposal volume (FY2016)**
Initiatives for water risk prevention

In response to a global increase in concerns regarding water problems, Toshiba Group is promoting sustainable water resource management. In FY2016, we enhanced analysis and management of production sites located in high-water-risk regions and sites that need large amounts of water. To analyze data on high-water-risk regions, we used “Aqueduct”, a water risk assessment tool developed by the World Resources Institute (WRI), and we considered water problems from various perspectives, including the risk of pollution by wastewater and level of interest in water issues among area residents, in addition to the physical amounts of water resources in individual river basins. Each of our production sites has incorporated reducing the amount of water received into its annual plan in order to develop specific strategies and conduct follow-up surveys on an ongoing basis. We are promoting wide-ranging initiatives, including recycling wastewater generated in sites and introducing systems for using rainwater.

Results of FY2016

The total amount of water received in FY2016 was 35.72 million m³, a decrease of approximately 3 million m³ compared to the previous fiscal year. Also, the amount of water received per unit activity was 77% of the total for FY2010, exceeding the initial target by 10 percentage points.

Amount of water received and that per unit activity

Breakdown of the amount of water received (FY2016)

Assessment on a 9-point scale from A+ (low risk) to C- (high risk)

Assessment of water risks in regions with sites

Working in collaboration with InterRisk Research Institute & Consulting, Inc., Toshiba Group selected eight production sites located in areas where water is used in large quantities or with high water risks to conduct water risk assessment at such sites. We assessed water demand (current demand and future trends), water disaster risks, and water contamination vulnerabilities (public health and ecosystems) from various perspectives in river basins where our sites are located. Based on the information acquired, we will review water risk prevention measures going forward.

Water Risk Assessment Results (Example)

Table: Water Risk Assessment Results

<table>
<thead>
<tr>
<th>Site</th>
<th>Water demand (Present)</th>
<th>Future trends</th>
<th>Water disasters</th>
<th>Water contamination vulnerabilities</th>
<th>Total Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A−</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>B−</td>
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</tr>
<tr>
<td>B+</td>
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<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Correlation analysis between rainfall and the amount of water used in regions with Toshiba production sites

Also, Toshiba Group is analyzing the correlation between the monthly amount of water received by factories and rainfall in regions where our sites are located. Assuming that months with small amounts of rainfall are periods with high water risks, we aim to contribute to water resource conservation in surrounding areas by reducing the amount of water received as much as possible.

Amount of water received and rainfall (example)

In the months enclosed by blue circles, the amounts of water received and rainfall are large. By contrast, in the months enclosed by orange circles, the amount of rainfall is low. In these months, there is a need to reduce the amount of water used.

By performing such an analysis at each site, we aim to contribute to water conservation in areas with high water risks as well as to raise awareness about water resources at sites in areas assessed as having low water risks.
Managing chemical substances by ranking

Toshiba Group classifies standards for the handling of chemical substances into the three categories of prohibition, reduction, and control, and manages chemical substances according to the regulations for each category. The relationship between substance ranking and management classifications, which shows the concept underlying this initiative, is indicated in the figure below. Approximately 2,000 types of chemical substances are classified into three ranks (hazard level A, B, and C) based on the regulatory levels set by environmental legislation, data on carcinogenic chemicals, and other factors. The classifications of prohibition, reduction, and control are determined by judging risks for each chemical substance using the ranking of the substance equivalent to hazard levels and emissions equivalent to exposure to the substance.

■ Substance ranking and management classifications

\[ \text{Risk} = \text{Hazard} \times \text{Exposure} \]

Substance ranking and management classifications

- **Substance rank**
  - Rank A: Substances whose manufacture and use are prohibited by laws or regulations, or whose manufacture, use, or disposal are specified or whose usage must be reported by laws or regulations, or whose carcinogenic class is II or III.
  - Rank B: Substances subject to relatively few restrictions, or whose carcinogenic class is II.
  - Rank C: Substances subject to laws and regulations but subject to relatively few restrictions, or whose carcinogenic class is I.

Toshiba Group classifies standards for the handling of chemical substances into the prohibited, reduction, and control categories and manages chemical substances according to the regulations for each category. The relationship between substances and their ranking is as follows:

- **Permitted substances**
  - In accordance with Toshiba Group policy

- **Banned substances**
  - By emission amount
  - Control of the amount of emissions
  - Control of the amount of use
  - Control of whether the substance is used or not

Toshiba Group strives to reduce the consumption of chemical substances by designating substances that have large direct impacts on the environment as those targeted for reduction. By business segment, electronic devices and social infrastructure systems account for approximately 90% of the total emissions of such substances, and by region, approximately 90% of such emissions originate from Japan.

![Improvement in the total amount of chemicals discharged](image)

**Use of alternative substances, operation of combustion detoxifying devices, and improving manufacturing processes to reduce use of raw materials**

- **Reducing emissions of chemical substances**
  - Toshiba Group takes measures for solvents used in cleaning and resin processing, which ranked high among such emissions, and promoted initiatives such as using alternative substances, starting operation of combustion detoxifying devices, and improving powder coating and other manufacturing processes in order to reduce the use of raw materials as well as reducing the amount of VOC evaporation by enhancing chemical management.

As a result, the Group reduced emissions of substances targeted for reduction by 1,114 tons (44%) compared to the FY2000 level.

**Future initiatives**

In the Sixth Environmental Action Plan, Toshiba Group aims to reduce emissions of substances per unit activity in FY2020 to less than the FY2013 level. It plans to use alternative substances and increase material efficiency by improving processes as an incoming countermeasure and expand introduction of emission removal and collection equipment as an outgoing countermeasure.

**Emissions of substances targeted for reduction**

- **Emissions compared to the benchmark year (%)**
  - 2000: 100
  - 2016: 56

- **Per unit real production (compared to the FY2000 level) (%)**
  - 2016: 72

**Breakdown of emissions of substances targeted for reduction (FY2016)**

- **Electric devices**
  - 66%

- **Social infrastructure**
  - 23%

- **Digital solutions**
  - 5%

- **Energy**
  - 5%

- **By business segment (Electronic devices)**
  - Amount released: 1,398 t

- **By region**
  - Asia: 5%
  - Europe: 0.3%

---

*The amount consumed refers to the amount of substances covered by PRTR that are changed into other substances by leaching, transference, decomposition, or reaction treatment and are changed into other substances inside operation sites.

*Amount transferred as waste in 2013: 365 t

*Amount released to public sewerage is categorized as the amount transferred.

*The amount released in FY2016 is indicated in the figure below. Approximately 2,000 types of chemical substances are classified into three ranks (hazard level A, B, and C) based on the regulatory levels set by environmental legislation, data on carcinogenic chemicals, and other factors. The classifications of prohibition, reduction, and control are determined by judging risks for each chemical substance using the ranking of the substance equivalent to hazard levels and emissions equivalent to exposure to the substance.

<table>
<thead>
<tr>
<th>Managed substances</th>
<th>Amount handled</th>
<th>Amount recycled</th>
<th>Amount transferred</th>
<th>Amount removed and treated</th>
<th>Amount consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>58 types of substances, including:</td>
<td>7,152 t</td>
<td>457 t</td>
<td>365 t</td>
<td>5,299 t</td>
<td>818 t</td>
</tr>
</tbody>
</table>

**Policy**

**Measures to take**

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Toshiba Group Environmental Report 2017
Reduction in the amount of chemical substances handled

- Results of FY2016 and future initiatives

In FY2016, electronic devices as well as social infrastructure systems accounted for over 90% of the total amount of chemicals handled, with substances used for chemical reactions and wastewater treatment raking high among chemicals. The material balance for PRTR-covered chemicals indicates that 74% of them are removed through coagulation and absorption and 11% are consumed together with the products that contain them, which taken together represent the majority of the chemicals handled. It also indicates that only about 3% of the chemicals used are discharged into the atmosphere or hydrosphere. We will continue to improve manufacturing processes to reduce the amount of raw materials handled.

- Amounts of substances targeted for reduction handled

![Image showing reduction in amounts of chemical substances handled]

- Breakdown of the amounts of substances targeted for reduction handled (FY2016)

Toshiba Elevator and Building Systems Corporation had used xylene and toluene, which are regulated under the PRTR Law in Japan, as well as solvent coatings that contain volatile organic compounds (VOCs), including butyl acetate, which is a second-class organic solvent specified in the Ordinance on Prevention of Organic Solvent Poisoning. As an alternative, the company adopted a powder coating that contains none of these substances. It thus greatly reduced the environmental impact on the atmosphere caused by organic solvents (reduction of 3 tons \(^2\) per year).

The new coating is friendly to human health and contains no formaldehyde, which is a major causal agent of sick building syndrome.

Management of substances that impact the atmosphere and hydrosphere

Toshiba Group is working to grasp the extent of emissions of sulfur oxides (SOx) and nitrogen oxides (NOx), both of which are major causes of air pollution, as well as the level of chemical oxygen demand (COD), an indicator of water pollutants, and emissions of total nitrogen and suspended matter to ensure appropriate management of such emissions. In addition, each site voluntarily sets the maximum permissible levels of concentrations for these substances and complies with these prescribed standards.

In FY2016, we reduced the total amount of sulfur oxides (SOx), nitrogen oxides (NOx), and dust and soot discharged into the atmosphere by approximately 19% compared to the FY2015 level. We reduced the total amount of suspended matter, total nitrogen, chemical oxygen-demanding (COD) substances, and other materials by 5% compared to the FY2015 level.

- Impacts on the atmosphere

Amount of impact = Concentration of each substance × Amount of substance emitted (based on the Air Pollution Control Act)

![Image showing impacts on the atmosphere]

- Impacts on the hydrosphere

Amount of impact = Concentration of each substance × Amount of substance discharged (based on the Water Pollution Control Act in Japan)

![Image showing impacts on the hydrosphere]

Management of ozone-depleting substances

Toshiba Group possesses specified chlorofluorocarbons (CFCs), which deplete the ozone layer, as coolant for air conditioners installed in sites; we appropriately dispose of such CFCs in accordance with the law. In FY2015, the Group had 10.3 tons of specified CFCs. In FY2016, due to measures such as facility upgrades, we reduced the amount of specified CFCs to 9.8 tons, a reduction of about 5% compared to the previous year.

Under the system for reporting and publishing the estimated amount of CFC leaks stipulated in the Fluorocarbons Emissions Control Act, Toshiba Corporation reported approximately 2,500 t-CO\(_2\) of leaks in FY2016. We will continue to further enhance our management of chemicals through routine and periodic inspections as well as environmental audits.
**Soil and groundwater purification**

Toshiba Group is working to purify contaminated soil and groundwater by ascertaining the present condition of soil and groundwater at its production sites. The Group is also taking safety measures for environment-related equipment to prevent contamination with chemicals and reduce environmental risks. A survey of all production sites confirmed contamination at 12 sites, where soil and groundwater contamination with volatile organic compounds (VOCs) has been purified, and the results are being monitored. VOCs in groundwater are collected and eliminated mainly using the water pumping method. Toshiba Group uses the water pumping method to purify soil and groundwater mainly in areas with high concentrations of VOCs, but if the VOC concentration in such areas is lowered due to progress in purification, the Group takes such measures as stepping up water pumping efforts in other areas with relatively high VOC concentrations. In FY2016, the Group collected 361 kg of VOCs. The amount collected was about 7% less compared to FY2015, but this is chiefly because the amount of VOCs collected per liter of water pumped is gradually decreasing due to the progress made in purification through drastic measures that make the most of the opportunity presented by land modifications, methodological changes (from water pumping to in-situ purification), and declines in relative concentrations of VOCs as a result of purification.

At the same time, Toshiba Group will strive to ensure full communication with local governments and residents in neighboring areas through tours of purification facilities and other public relations activities.

**Preventing contamination and reducing contamination risks**

In order to prevent contamination with chemical substances and reduce contamination risks, Toshiba Group independently established the Structural Design Guidelines to prevent leaks of chemicals at its eight types of environment-related facilities (including wastewater treatment plants), and its overseas sites are also promoting continuous improvements in this area. In FY2016, Toshiba Group achieved a compliance rate of 99.7% for all of Toshiba’s sites and 96.9% for all of its group companies’ sites in Japan. In its overseas operations, at the time of establishing a new business or relocating a business, Toshiba Group also assesses contamination risks by investigating land use and contamination histories. Assessments are made in accordance with laws and regulations in each country, and Toshiba Group’s own rigorous standards are applied in countries without relevant legislation.

| Purification of soil and groundwater contaminated with volatile organic compounds |
|---------------------------------|-------------------------------|-------------------------------|-----------------|-----------------|
| Production sites                | Location                      | Progress in purification      | Purification method*1 | Amount collect-ed*2 (kg) |
| Former site of Asia Electronics Inc’s Yokohama Operation Center | Yokohama, Kanagawa Prefecture | Being monitored*1                | A, E, G                  | —                |
| Toshiba Corporation Komukai Complex | Kawasaki, Kanagawa Prefecture | Purification in progress       | A, G                  | 47.3              |
| Toshiba Corporation Himeji Operations-Semiconductor | Taishi Town, Ibo County, Hyogo Prefecture | Being monitored (North district) | D, F, G                  | —                |
| Japan Semiconductor Corporation Oita Operations | Oita, Oita Prefecture | Purification in progress       | A, F                  | 113.3             |
| Toshiba Carrier Corporation Fuji Factory & Engineering Center | Fuji, Shizuoka Prefecture | Purification in progress       | A, B                  | 102.6             |
| Toshiba Carrier Corporation Tsuyama Factory | Tsuyama, Okayama Prefecture | Purification in progress       | A, B                  | 0.2               |
| Kawamata Seiki Corporation | Kawamata Town, Date County, Fukushima Prefecture | Purification in progress       | A                  | 0.0               |
| Former site of Toshiba Shomei Precision Corporation’s Kawasaki Works | Kawasaki, Kanagawa Prefecture | Being monitored                 | A, B, F                  | —                |
| Former site of Toshiba Lighting & Technology Corporation’s Iwase Works | Sakuragawa, Ibaraki Prefecture | Purification in progress       | A                  | 0.0               |
| Lighting Device & Fixture Corporation Ibaraki Plant | Joso, Ibaraki Prefecture | Being monitored                 | A, B                  | —                |
| Toshiba Components Co., Ltd. Kimitsu Operations Center | Kimitsu, Chiba Prefecture | Purification in progress       | A, B                  | 97.8              |

*1 Purification method: (A) groundwater pumping, (B) soil gas suction, (C) reduction decomposition, (D) oxidation decomposition, (E) interception containment, (F) removal by excavating soil, and (G) bio-activation.

*2 Amount collected from April 2016 to March 2017

*3 Monitoring: Monitoring to confirm how things develop after work that will allow measures to be taken or purification is completed.

*4 At present, Toshiba Electronic Devices & Storage Corporation
In order to ensure effective prevention of groundwater contamination, an act revising part of the Water Pollution Control Act in Japan was promulgated on June 22, 2011 and came into force on June 1, 2012. To prevent groundwater from becoming contaminated with hazardous substances*, new provisions have been added that require those who install facilities where hazardous substances are used, stored, or otherwise handled to comply with structural, equipment, and usage standards to block hazardous substances from entering the ground and to record and maintain records of periodic inspection results.

As early as FY1990, Toshiba Group established the Structural Design Guidelines, an initiative that anticipated the purpose of these revisions to the Act, and has since been working to improve compliance with these guidelines by developing measures to prevent underground infiltration and by conducting periodic facility inspections to facilitate on-site improvements. Through such measures, we aim to further reduce environmental risks.

* As stipulated in Article 2 of the Order for Enforcement of the Water Pollution Control Act in Japan, the 28 hazardous substances subject to regulation include cadmium, lead, and trichloroethylene (as of April 2016).

### Storage and management of PCB

Since 1972, when the manufacture of products using polychlorinated biphenyl (PCB) was discontinued in Japan, Toshiba Group has kept PCB and PCB-containing products under strict surveillance, controlled them, and reported their storage to the relevant authorities in accordance with the Waste Management and Public Cleansing Act and the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes in Japan. In addition to meeting the prescribed storage standards, the Group makes doubly sure through the installation of dikes and double containers and other measures that they are stored appropriately.

To manage high-concentration PCB waste, Toshiba Group has registered some 7,400 transformers and condensers as well as some 73,000 stabilizers and compact condensers with Japan Environmental Storage & Safety Corporation (JESCO), which provides wide-area PCB treatment services, and is gradually disposing of the devices according to JESCO’s plan. In particular, companies that store transformers and condensers in prefectures in the Chugoku, Shikoku, and Kyushu regions as well as in Okinawa, which are covered by JESCO Kitakyushu, are obligated to entrust disposal to JESCO by the end of FY2017. Accordingly, we conducted a survey on how transformers and condensers have been registered at the production sites of Toshiba Group companies located in the relevant regions during the second half of FY2016 to confirm that there were no problems. Meanwhile, we are also working to dispose of low-concentration PCB waste at government-certified detoxification facilities and prefectoral governor-authorized facilities (39 facilities across Japan as of July 11, 2017). During FY2016A, we conducted a large-scale in-house survey on devices in use (including transformers, condensers, and stabilizers) that may contain PCB. As a result, we discovered devices that may contain PCB in use at a number of production sites.

When checking transformers for maintenance, we analyze the oil, and if we discover PCB contained in such oil, we suspend use of the transformers, upgrade them, or draft a disposal plan. Condensers are fully sealed and become useless if their oil is analyzed, regardless of whether or not they contain PCB. Therefore, we are drafting plans to gradually update condensers while taking care not to impair our business activities. These measures are incorporated into Toshiba Group’s policies for the future and shared by all company personnel.

We will continue our efforts to identify devices that contain PCB and to dispose of them properly.

### Disposal policies for the future

<table>
<thead>
<tr>
<th>High density</th>
<th>Proceed with disposal according to JESCO’s disposal plan.</th>
<th>Formulate plans to upgrade or dispose of devices.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low density</td>
<td>Proceed with disposal at government-certified facilities.</td>
<td><strong>Transformers</strong>  Analyze oil during maintenance. Formulate plans to upgrade or dispose of devices containing PCB. <strong>Condensers</strong>  Formulate plans to gradually upgrade fully sealed devices while taking care not to impair business activities. Formulate plans to dispose of devices containing PCB.</td>
</tr>
</tbody>
</table>

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![PCB-containing equipment being transported to JESCO](image)