

Address	1-1, Nishi-Hitotsuya, Settsu, Osaka 566-8585, Japan	
Site area	Approx. 413,000m <sup>2</sup>	
Completed	February 1941	
Employees	2,555 (As of March 2021)	
Main products	Fluorochemical products, Air conditioning/refrigeration equipment, oil hydraulic products, precision defense equipment, other	
ISO 14001 certified	1997	
Latest ISO 14001 update	March 24, 2019	

### ■ Yodogawa Plant Certified as Stage 2 Gold Rank Green Heart Factory

In 2019, the Yodogawa Plant received Stage 2 Gold Rank. This was the result of all employees making that all important extra effort and working together to systematically reduce environmental impact while strengthening relations with society.

#### Stage 2 Green Heart Factory:

Since fiscal 2005, the Daikin Group has established a certification system based on its original standards, which evaluate environmental and social attributes for environmentally advanced factories. In fiscal 2017, the standards were revised (Stage 2) in order to promote higher level initiatives. In addition to the existing seven standards including environmental impact reduction, such as reducing CO<sub>2</sub> emissions, and involvement with the community, a four-stage certification ranking was established (out of 200 points: bronze for 150 points and above, silver for 170 and above, gold for 190 points and above, and platinum for 195 points and above). These rankings involve additional evaluations on the rollout of systems or initiatives that involve all employees; thereby assessing whether environmental activities are conducted on an organization-wide level.



## ■ Products Developed and Manufactured at Yodogawa Plant

### Chemicals Business

- Fluorocarbon



- Fluoropolymers and Fluoroelastomers



- OPTOOL anti-smudge coating



- Semicon Etching Agents



### Oil Hydraulics Business

- Hybrid Hydraulic Unit ECORICH



- Oil Cooling Units



### Defense Systems Business

- Oxygen Concentrators



- Pulse Oximeters



## Large Air Conditioner Business

- HEXAGON Force32



- Compact Air Handling Units



## Curbing Global Warming

### ■ Recovering Fluorocarbons

In 1998, the Yodogawa Plant installed equipment for the destruction of recovered fluorocarbons so that it could carry out this activity on site.

Besides conducting thorough recovery and destruction of fluorocarbons generated during Daikin manufacturing, the Yodogawa Plant properly destroys the fluorocarbons that the Service Department recovers from customers and other outside entities.

**Destruction facilities for recovered fluorocarbon**  
After the fluorocarbons have been completely broken down at a combustion destruction temperature of 1,250°C, they are rendered harmless.



## Energy Saving

### ■ Cogeneration Systems

The Yodogawa Plant has introduced cogeneration systems, which make use of the waste heat generated during power generation. The result has been a 20% reduction in CO<sub>2</sub> emissions.



### ■ Solar Power Generation Systems

Photovoltaic panel with sun tracking mechanism: 37kW

The Yodogawa Plant is conducting a demonstration test on increasing power generation amounts using Daikin's sun tracking mechanism technology (single-axis tracking system using compressed air).



### ■ High-Efficiency Lighting

Lighting in regularly used rooms like offices and conference rooms was converted to inverter-type fluorescent fixtures, resulting in a decrease in electricity for lighting of about 30%. The plant is also gradually switching outdoor lighting to LED.



### ■ Environmental Patrols

The plant's environmental activities include patrols to ensure the facility is operating in accordance with the energy saving management guideline. For example, patrol members check things like temperature settings for space heating and cooling, the energy saving modes of PCs, and the turning off of unnecessary lights. These patrols also make all employees aware of their role in saving energy.



**Technology and Innovation Center Brings Together State-of-the-art Environmental Technologies**

The Technology and Innovation Center (TIC) inside the Yodogawa Plant is an advanced environmental facility aimed at achieving zero-energy buildings (ZEBs). The TIC's collection of the latest technologies includes state-of-the-art air conditioning equipment and an optimal control system for achieving both energy efficiency and a comfortable indoor environment, the efficient use of heat through equipment such as a tracking solar panel system, and ZEFFLE infrared reflective coating.

For these environmental efforts, the TIC earned LEED® Platinum certification from the U.S. Green Building Council for its energy efficiency and green design. It has also earned the highest certification (S class) in CASBEE (Comprehensive Assessment System for Built Environment Efficiency), a highly recognized system in Japan for the comprehensive assessment of the environmental performance of buildings, districts, and cities. CASBEE was created by the Institute for Building Environment and Energy Conservation (IBEC).



**Initiatives for Resource Recycling**

**Achieved Zero Waste Emissions**

In September 2004, the Yodogawa Plant achieved zero emissions (recycling ratio of at least 99.5%).

**Thorough Separation of Waste**

Unnecessary items from offices and production processes are separated for recycling. The recycling bins are see-through to ensure materials go in their proper place.



**Illustrated Waste Separation Poster**

Posters with photos of waste items to be separated are placed at separation stations to ensure materials get recycled properly.



### ■ How Materials are Recycled

Unnecessary items are separated and recycled as, for example, solid fuel, boards, and cement.



## Preventing Air and Water Pollution

### ■ Recovering VOC Solvents

The plant works to reduce the amount of VOCs, such as the solvents used in the fluoropolymer manufacturing process, released into the atmosphere by recovering at least 85% of them using activated charcoal.



### ■ Managing In-House Standards for Wastewater Treatment

Daikin has stipulated an in-house standard value that is 25% stricter than legal limits for plant wastewater. The plant works daily to ensure measurements for items such as fluorine and pH do not exceed in-house standard values.



### ■ Water Treatment Facilities

The plant ended using perfluorooctanoic acid (PFOA) in the fluoropolymer manufacturing process and changed to an alternative with lower environmental impacts. The plant will continue striving to reduce emissions from this alternative as well.





## Preparing for Emergencies

### ■ Joined the Special Firefighting Team of Settsu City

Fourteen employees from the Yodogawa Plant joined the special firefighting team of Settsu City, which is the first of its kind in Japan. These employees have a registered pump truck and make up the Daikin team. Since January 2010, the Daikin team responds to requests for assistance in case of a fire nearby and offers assistance under the guidance of the Settsu City Fire Department.



### ■ Stockpiling Emergency Materials and Equipment

In preparation for a range of disasters, such as flooding and fires from a major earthquake and tsunami, or chemical leaks, emergency materials and equipment are stored at 22 locations at the Yodogawa Plant. In case of a major disaster, there are stockpiles of water, food, and toiletries so that employees can monitor the chemical plant and ensure safety at the site around the clock.



### ■ Disaster Training

The plant holds comprehensive disaster training three times a year with participation from the fire department and police department. The plant also takes part in disaster training sponsored by Osaka Prefecture and Settsu City.



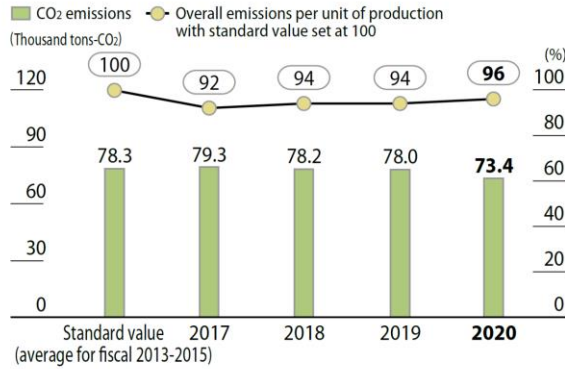
### ■ Safety Confirmation System Established

A system was established that can confirm the safety of all people on the site including visitors approximately 20 minutes after a disaster occurs, thus ensuring that each and every person is accounted for.

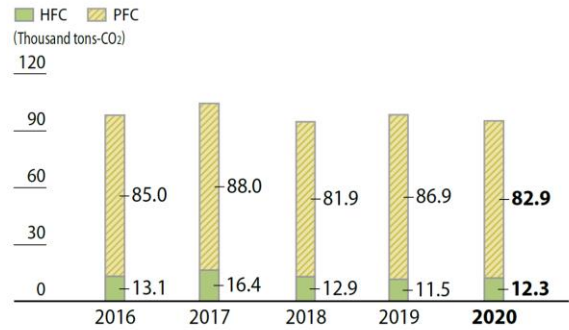


## Environmental Performance Data

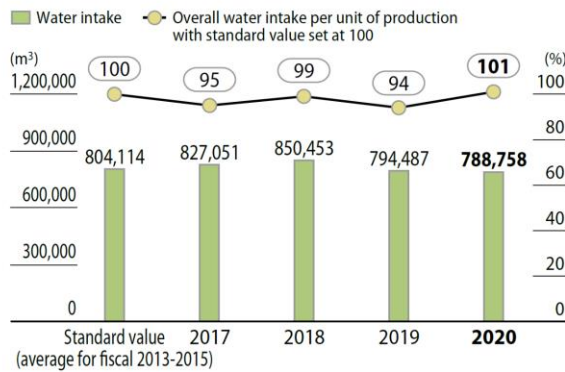
### Total Energy-Induced CO<sub>2</sub> Emissions, CO<sub>2</sub> Emissions per Unit of Production



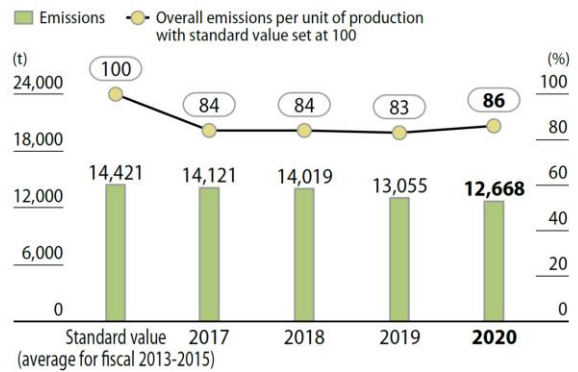
### Greenhouse Gas Emissions Other than CO<sub>2</sub>



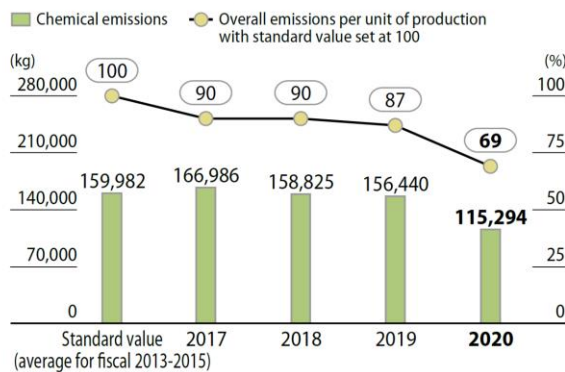
### Water Intake/per Unit of Production



### Emissions/per Unit of Production



### Chemical Emissions/per Unit of Production (total of PRTR substances and VOCs)





Unit: kg					
Substance name	Amount emitted			Amount transported	
	Air	Public waterways	Soil	Waste	Sewage
Acetonitrile	3.0	0.0	0.0	2,100.0	28.0
Allyl alcohol	0.0	0.0	0.0	0.0	0.0
Antimony and its compounds	0.0	0.0	0.0	17,000.0	0.0
Ethylbenzene	83.0	0.0	0.0	82.0	0.0
Ferric chloride	0.0	0.0	0.0	0.0	0.0
Xylene	120.0	0.0	0.0	50.0	0.0
1-chloro-1,1-difluoroethane (also called HCFC-142b)	7,200.0	0.0	0.0	0.0	0.0
Chlorodifluoromethane (also called HCFC-22)	29,000.0	0.0	0.0	0.0	0.0
2-Chloro-1,1,1,2-tetrafluoroethane (also called HCFC-124)	1,400.0	0.0	0.0	0.0	0.0
Chloroform	13.0	0.0	0.0	3,900.0	0.0
Tetrachloromethane	0.0	0.0	0.0	0.8	0.0
Dichloromethane (also called methylene chloride)	6,400.0	0.0	0.0	1,400.0	0.0
N,N-dimethylacetamide	17.0	0.0	0.0	270.0	0.0
N,N-dimethylformamide	5.4	0.0	0.0	5,200.0	0.0
copper salts (water-soluble, except complex salts)	0.0	0.0	0.0	310.0	0.0
1,2,4-trimethylbenzene	15.0	0.0	0.0	0.0	0.0
1,3,5-trimethylbenzene	47.0	0.0	0.0	0.0	0.1
Toluene	280.0	0.0	0.0	110.0	0.0
Hydrogen fluoride and its water-soluble salts	0.1	0.0	0.0	95,000.0	0.0

Normal hexane	220.0	0.0	0.0	330.0	0.0
Water-soluble salts of peroxodisulfuric acid	0.0	0.0	0.0	2.0	0.0
Poly (oxyethylene) =alkyl ether (alkyl C=12-15)	0.0	0.0	0.0	41,000.0	240.0
Methylenebis (4,1-phenylene) diisocyanate	0.0	0.0	0.0	48.0	0.0
Total	44803.5	0.0	0.0	166,802.8	268.1

## Exchange with Local Communities

\* In FY2020, some activities have been canceled due to the impact of COVID-19. (Photos are from past events)

### ■ Bon Dance Festival

Every August, local residents are invited to a Bon dance festival held on the grounds of the Yodogawa Plant. In fiscal 2018, the festival was attended by approximately 22,000 people.



### ■ Kendo Training Hall for Children

The Yodogawa Plant's Yushinkan kendo training hall has been moved to a new location and is now a multi-purpose gymnasium. It is open to the public as a way for Daikin to contribute to the community.



### ■ Factory Tours for Elementary School Students

Grade 3 students from two nearby elementary schools are invited to factory tours. The children listen and watch with intense curiosity and we receive thank-you letters from them.



### ■ Cleaning Up Streets Around the Factory

Division and section managers lead cleanups of local streets once a month. Participants are often encouraged by words of gratitude from passers-by.



■ **Cleanups of Waterways Around the Factory**

Residents of Daikin's bachelors' dormitory join local residents in cleaning up waterways, part of the Yodogawa Plant's efforts to join in preserving the local environment.



■ **Emergency Supply Shed for Local Residents**

Besides the emergency materials and equipment previously mentioned, the Yodogawa Plant has two sheds on-site containing emergency supplies for local residents to use during a disaster. At annual plant tours for the neighborhood association, Daikin shows how to use these supplies.

