

3.2 Climate Change Strategy

3.2.1 Basic Approach

The Fujifilm Group has set CO₂ emissions reduction targets toward 2030 to create of a carbon neutral society aimed at by the Paris Agreement. Along with CO₂ emissions reduction across the entire product lifecycle (from material procurement, product manufacturing, transportation, use and disposal), we are continuing to actively reduce CO₂ emissions in society through providing our products and services. At the manufacturing stage, we direct our efforts at using lower carbon energy sources, including adopting and utilizing renewable energy, in addition to the promotion of energy saving and efficient energy usage.

Targets and Progresses of Climate Change

- Long-term target:** Reduce the Fujifilm Group's CO₂ emissions by 30% by FY2030 (compared to the FY2013 level)
Progress: 22% reduction at the end of FY2018 (compared to the FY2013 level)
- Mid-term target:** Reduce the Fujifilm Group's CO₂ emissions by 30% by FY2020 (compared to the FY2005 level)
Progress: 27% reduction at the end of FY2018 (compared to the FY2005 level)
- Short-term Target:** Reduce the Fujifilm Group's CO₂ emissions by 1% by FY2019 (compared to the FY2018 level)

Long-term targets are set down in SVP2030 and certified as Science Based Targets by the SBT Initiative.

Renewable Energy Usage Targets:

- Converting 50% of purchased electric power to renewable energy-derived power by FY2030
- Converting 100% of purchased electric power to renewable energy-derived power aiming at zero CO₂ emissions from our energy consumption by converting using fuels to hydrogen in our in-house cogeneration systems by FY2050.
- This target was certified as being in line with the purpose of the RE100 by the Climate Group, an international NPO; we joined the RE100 in April 2019.

Renewable Energy (Electric Power) Consumption

Unit: MWh

	FY2014	FY2015	FY2016	FY2017	FY2018
Renewable energy consumption	22,978	46,675	102,552	101,435	96,100

3.2.2 Major Activities

At Fujifilm Group, the Energy Strategy Promotion Committee has been working group-wide to maximize efficiency in energy usage and to seek in the energy purchase based on lower carbon resources. We have been working to reduce environmental impact through our products and services, based on internal rules concerning Design for Environment.

We are directed efforts to the active introduction of renewable energy, both in Japan and other countries, including the introduction of wind power-generated electricity at FUJIFILM Manufacturing Europe B.V. (Netherlands), installation of a photovoltaic power facility at its Kumamoto Plant (Japan) and installation of a new large-scale photovoltaic power facility at Fujifilm Printing Plate (China) Co., Ltd., in FY2018.

In January 2019, the Fujifilm Group established a renewable energy usage target, and the Group plans to continue pursuing further energy conservation and introducing renewable energy sources to meet its CSR targets for the year 2030 as laid out in SVP2030.

3.2.3 Strategy and Management for the Climate Change

At the Fujifilm Group, the Energy Strategy Promotion Committee has been working group-wide to maximize efficiency in energy usage and to seek further CO₂ emissions reductions at the procurement stage. We are promoting these measures proactively throughout the Group. We are utilizing the carbon pricing scheme (price of CO₂ emissions) to evaluate risks and opportunities for climate change, and are now examining impact probabilities and future measures.

At the manufacturing stage, we promote CO₂ emissions reduction measures that include improvements to efficient energy usage, conversion to renewable energy-derived electric power, conversion of natural gas and heavy oil used in our in-house cogeneration systems to hydrogen sources (after FY2030). At the procurement stage, we are reducing the input of material resources by a more sophisticated scheme for reusing and recycling them. In response to the physical risks accompanying the climate change, we are introducing risk countermeasures for product supplies in procurement and manufacturing in various countries.

Furthermore, we are contributing to reducing CO₂ emissions on a global scale by promoting design for the environment and providing, disclosing and introducing appealing products and solutions that have a high CO₂ reduction efficiency through the FUJIFILM Holdings Environment Conscious Certification System (established in May 2018).

Information Disclosure Based on TCFD

In December 2018, the Fujifilm Group announced that it would endorse the recommendations issued by the Task Force on Climate-related Financial Disclosures (TCFD).

Furthermore, we are participating in the TCFD support program of the Ministry of the Environment and have started a scenario analysis on climate change.

Governance	Risk Management
<ul style="list-style-type: none"> Deliberate on climate change risks and opportunities at the ESG Committee (chaired by the President) to reflect them in our management, and report to the Board of Directors. <p>[Examples]</p> <ul style="list-style-type: none"> Establish a target for renewable energy use and endorse the TCFD recommendations. Join RE100, the global corporate leadership initiative. 	<ul style="list-style-type: none"> Monitor the levels of CO₂ emitted by each business and through the product lifecycle with the global system. Analyze factors affecting energy efficiency and CO₂ emissions at the Energy Strategy Promotion Committee. Identify water risks using indexes for “water stress,” “water usage” and “relation to business” at all sites.
Strategy	Index and Target
<ul style="list-style-type: none"> Establish Sustainable Value Plan 2030 (SVP 2030) with FY2030 as its long-term goal. Identify risks and countermeasures. <p>[Physical risks]</p> <ul style="list-style-type: none"> Determine raw materials procurement and factory production stoppages caused by abnormal weather (floods etc.). Establish Business Continuity Plans (BCPs) to decentralize raw materials suppliers and production sites. <p>[Transition risks]</p> <ul style="list-style-type: none"> Evaluate financial risks of the carbon pricing scheme and promote the introduction of renewable energy. Converting to 100% renewable energy at FUJIFILM Manufacturing Europe B.V. in the Netherlands, etc. <ul style="list-style-type: none"> Develop and distribute products that mitigate and address climate change making use of the internal certification system for environmentally conscious products <ul style="list-style-type: none"> Energy-saving multifunction devices, data archive storage system, process-less thermal CTP plates, etc. Convert not only purchased electric power but any fuels used by in-house cogeneration systems into renewable energy using new technologies such as hydrogen, and aim for zero CO₂ emissions. <ul style="list-style-type: none"> Clarify our approach to a non-carbon society through RE100, the international initiative, and promote infrastructure development as a consumer. 	<ul style="list-style-type: none"> Target for reducing CO₂ emissions (Certified by Science Based Targets). <ul style="list-style-type: none"> Reduce CO₂ emissions by 30% across the entire product lifecycle by FY2030 (compared to the FY2013 level). Renewable energy usage target <ul style="list-style-type: none"> Convert 50% of purchased electric power to renewable energy-derived power. Convert 100% of purchased electric power to renewable energy-derived power. (Aim at zero CO₂ emissions from energy such as electricity, fuels, etc.) Water usage reduction target <ul style="list-style-type: none"> Reduce the amount of water used in production by 30% by FY2030 (compared to the FY2013 level).

3.2.4 Data Related to Climate Change Measures

GHG Emissions (Scope 1, 2)

		Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Total direct GHG emissions (Scope 1)	Total emissions	t CO ₂ e (metric tons CO ₂ equivalents)	671,000	662,000	635,000	604,000	594,000
Total indirect GHG emissions (Scope 2)	Total emissions	t CO ₂ e (metric tons CO ₂ equivalents)	663,000	606,000	569,000	530,000	512,000

Scope 1: CO₂ emissions in fuel.

Data coverage is for 100% of total sales

The above Scope 1 & 2 data have been verified by the third party organization: SGS Japan, Inc.

CO₂ Emissions (Scope 1, 2, 3)

	FY2016	FY2017	FY2018
CO ₂ Emissions (kt- CO ₂ /year)	4,639	4,360	4,082
Scope 1	14%	14%	15%
Scope 2	12%	12%	13%
Scope 3	75%	74%	73%

FY2018 Results of GHG Scope 3 Emissions for Fujifilm Group

Unit: %

Purchased goods and services	Capital goods	Fuel and energy-related activities	Upstream transportation and distribution	Waste generated in operation	Business travel	Employee commuting	Upstream leased assets	Downstream transportation and distribution	Processing of sold products	Use of sold products	End-of-life treatment of sold products	Downstream leased assets
55.9	7.7	1.9	0.3	0.3	1.2	0.6	—	11.4	1.8	2.9	4.0	12.1

FY2018 Results for Fujifilm Group

Unit: kt-CO₂/year

	Procurement	Manufacturing		Transportation	Use	Disposal	Total
	1,720	1,105		340	428	86	3,680
Items	PET, TAC, etc.	303	Gas	514	340	Medical equipment	52
	Aluminum	1,207	Petroleum	79		Minilab	27
	Copiers/Printers/Fax machines	210	Electricity	512		Copiers/Printers/Fax machines	359
						Others	6

* Trading emissions are allocated to Use and Disposal.

CO₂ Emissions*

 Unit: kt- CO₂/year

		FY2014	FY2015	FY2016	FY2017	FY2018
R&D/ Manufacturing/ Office	Japan/Manufacturing	921	894	853	782	761
	Japan/Nonmanufacturing	27	30	33	32	30
	Overseas/Manufacturing	346	308	268	278	274
	Overseas/Nonmanufacturing	40	37	50	43	40
	Group total	1,333	1,269	1,204	1,134	1,105
Vehicle	33	31	31	31	29	
Total		1,366	1,299	1,235	1,165	1,135

* Calculation method: Calculation of CO₂ emission by energy usage specified in the Act on the Rational Use of Energy. Emission coefficient by electric power utility used for purchased power.

2018 CO₂ Emission by Region* (R&D/Manufacturing/Office)

 Unit: kt-CO₂/year

Japan		791
Overseas	Americas (USA, Canada & Brazil)	152
	Europe (Netherlands, Germany, Belgium, UK & France)	51
	China	78
	Asia excl. China & Oceania (Australia, South Korea, Singapore, etc.)	33
Group total		1,105

* Calculation method: Calculation of CO₂ emission by energy usage specified in the Act on the Rational Use of Energy. Emission coefficient by electric power utility used for purchased power in Japan, and emission coefficient released by IEA for each country used for other countries.

Annual Changes in Total CO₂ Emissions in Domestic Logistics*

 Unit: t- CO₂/year

	FY2014	FY2015	FY2016	FY2017	FY2018
Total CO₂ emissions	45,633	50,229	49,761	47,100	45,846

* Total CO₂ emissions are calculated as the amount of CO₂ emitted by FUJIFILM Logistics Co., Ltd. in its logistics activities for the Fujifilm Group companies. Since FY2006, we shifted calculation method to the method based on revised Energy Conservation Law (travel distance of empty cars not included in calculations, etc.).

Annual Changes in Amount of CO₂ Reductions and Reduction Rates through Transportation Efficiency Improvements* (Domestic distribution)

	FY2014	FY2015	FY2016	FY2017	FY2018
Amount of CO₂ reductions (tons of CO₂/year)	11,404	12,692	15,790	13,156	12,927
CO₂ reduction rate (%)	20.0	20.2	25.4	21.8	22.0

$$\text{CO}_2 \text{ reduction rate (\%)} = \frac{\text{Amount of CO}_2 \text{ reductions}}{\text{Total CO}_2 \text{ emissions} + \text{CO}_2 \text{ reductions}}$$

* In the FY2018, we enforced our activities for CO₂ reductions in collaboration with a specified consigner. Major reduction initiatives, which proved effective, include starting modal shifts (road transport to sea transport) in FY2017, as well as improving carrying efficiency by double stacking during transport and enhancing gasoline mileage by eco-driving. The amount was a total figure of each facility's CO₂ reduction measure.

Annual Changes in Domestic Transport Volume*

Unit: million tons/kilometer

	FY2014	FY2015	FY2016	FY2017	FY2018
Transportation volume	181	190	190	168	155

* Range of transportation volume is calculated within the range of ownership in compliance with reporting under the Act on the Rational Use of Energy.

3.2.5 Energy Consumption

Annual Changes in Energy Consumption*¹

Unit: TJ

		FY2014	FY2015	FY2016	FY2017	FY2018
Japan	Electric power, purchased electric power	6,766	6,718	6,583	6,032	5,760
	Heavy oil, etc.* ²	2,171	2,040	1,569	1,299	1,110
	Gas* ³	8,432	8,495	8,609	8,348	8,507
	Renewable energy	6	1	1	1	4
Overseas	Electric power, purchased electric power	5,621	5,121	4,805	4,863	4,904
	Heavy oil, etc.* ²	39	33	30	24	23
	Gas* ³	1,784	1,756	1,787	1,779	1,698
	Renewable energy* ⁴	76	291	874	844	788
Total		24,895	24,454	24,256	23,190	22,796

*1 Per unit calorific value is based on the Energy Conservation Act.

*2 Total of heavy oil A, heavy oil C, kerosene, light oil and gasoline

*3 Total of natural gas, liquefied natural gas (LNG), city gas, butane and liquefied petroleum gas (LPG)

*4 FUJIFILM Manufacturing Europe B.V. (EF) classified its energy usage as renewable energy because the supply of wind-generated power has been 100% since FY2015.

Breakdown of Consumption of Heavy oil, etc. (FY2018)*

Unit: thousand kiloliters

	Heavy oil	Kerosene	Light oil	Gasoline
Japan	26.5	1.1	0.1	0.0
Overseas	0.0	0.0	0.6	0.0
Group total	26.5	1.1	0.7	0.0

*Consumption in manufacturing only

3.2.6 Products Responding to Climate Change

The Fujifilm Group is developing products that have a low impact on the environment. We try to design products that not only reduce their environment impact by themselves but that also contribute to reducing greenhouse gas emissions in society. We believe that developing products to address climate change issues is the first step to resolving environmental issues in society as well as to creating business opportunities.

For further details, please refer to 3.4 *Product Stewardship (Design for the Environment.)*