Environmental data

Energy Purchase Amounts | Greenhouse Gas Emissions | Breakdown of Scope 1 and 2 Emissions by Country | Scope3 Emissions | Emissions Transactions | Renewable Energy Use | Total Waste / Waste Sent to Landfills | Water Resources | PRTR-VOC

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- Environmental performance coverage rate: 99.6% of sites covered by employee ratios.
  The aggregation range is equivalent to 95.3% of the entire Group (percentage figures refer to our environmental management activities aggeregated).
- Bold: the figures are verified by Independent Organization

Amounts of Energy Purchased

Note: Amounts are rounded and totals may therefore differ fi

Category		Unit	FY2017	FY2018	FY2019	
Non-renewable energy	Electricity purchased in Japan	GWh	230.147	235.376	**234.844**	
	Electricity purchased overseas	GWh	191.898	206.664	**194.063**	
	Total electricity purchased	GWh	422.045	442.040	**428.907**	
Renewable energy	Electricity purchased overseas	GWh	0.000	0.228	**1.309**	
Total electricity purchased		GWh	422.045	442.268	**430.217**	
Fuel purchased in Japan		TJ	2,000.718	2,005.359	**1,933.460**	1
		(GWh)	555.755	557.044	**537.072**	
Fuel purchased overseas		TJ	157.705	148.428	**121.560**	
		(GWh)	43.807	41.230	**33.767**	
Total Fuel purchased		TJ	2,158.423	2,153.787	**2,055.020**	1
		(GWh)	599.562	598.274	**570.839**	
Total		GWh	1,021.607	1,040.542	**1,001.056**	

Notes

1. The scope of data collection includes all domestic and overseas bases.
2. The totals for Indian and French bases were temporarily excluded in FY2021 (about 0.3%) because the objectivity and completeness of the collected data of these bases have been determined to be problematic. The totals will be recovered to the original condition in FY2022.
3. No heat was purchased.
   Volumes of fuel purchased are aggregated based on lower heating value (J) and converted at a rate of 3,600 GJ, or 3.6 TJ, to 1 GWh.
4. “Total” includes the amount of purchased electricity generated from renewable sources but excludes the amount of electricity generated in-house (both non-renewable and renewable energy).

- Fuji Electric Report/Annual Reports

Breakdown of Amount of Fuel Purchased in Fiscal 2021

	Unit	Japan	Overseas	Total	Unit	
Gasoline	kL	93.533	53.101	146.635	GWh	
Kerosene	kL	387.868	0.000	387.868	GWh	
Diesel oil	kL	66.589	57.072	123.661	GWh	
Fuel oil	kL	516.848	49.371	566.219	GWh	
Liquified petroleum gas	t	302.602	64.885	367.486	GWh	
Liquified natural gas	t	5,035.590	0.000	5,035.590	GWh	
City gas (converted to calorific value*)	1,000 m^3	33,152.738	2,278.837	35,431.575	GWh	
					total(GWh)	

* As the calorific value per area of gas varies by supplier and pressure varies by supply pipe, amounts are converted at a rate of 1,000 m3 at a pressure of 0℃1 to 45 GJ.

In-House Power Generation

Category		FY2017	FY2018	FY2019	FY2020	FY2
Non-renewable energy	**Electricity generated in Japan**	140.751	141.579	140.512	133.232	125
	Electricity generated overseas	0.402	0.050	0.289	0.113	0.
	Total electricity generated	141.153	141.629	140.802	133.345	125
Renewable energy	**Electricity generated in Japan**	0.487	0.487	0.539	0.592	0.
	Electricity generated overseas	0.638	0.672	2.113	1.575	1.

Category		FY2017	FY2018	FY2019	FY2020	FY2
	Total electricity generated	1.125	1.158	2.652	2.167	2.

Greenhouse Gas Emissions

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Category	FY2017	FY2018	FY2019 (New base year)	FY2020	FY2
CO_2 in Japan	221.2	219.3	**207.2**	**203.7**	21
Non-CO_2 greenhouse gases in Japan	69.1	74.6	**59.7**	**53.6**	5
Total greenhouse gas emissions in Japan	290.3	293.9	**266.9**	**257.2**	26
CO_2 in overseas	134.5	138.0	**128.8**	**131.7**	9
Non-CO_2 greenhouse gases overseas	59.2	88.9	**55.8**	**48.0**	3
Total greenhouse gas emissions overseas	193.7	226.9	**184.6**	**179.7**	9
Total CO_2 emissions	355.7	357.3	**336.0**	**335.4**	30
Total emissions of non-CO_2 greenhouse gases	128.3	163.5	**115.5**	**101.6**	5
Total greenhouse gas emissions	484.0	520.8	**451.5**	**437.0**	36
(per unit of net sales [t-CO_2e/¥100 million])	54.17	56.9	**50.13**	**49.89**	39

Greenhouse gas emissions reclassified based on Scope 1 (direct CO_2 from fuel use and non-CO_2 greenhouse gas emissions) and Scope 2 (indirect CO_2 emissions from electricity use)

Category	FY2017	FY2018	FY2019 (New base year)	FY2020	FY2
Scope 1 (direct) emissions in Japan	171.5	177.2	**158.1**	**147.5**	14
Scope 2 (indirect) emissions in Japan	118.8	116.7	**108.7**	**109.8**	12
Scope 1 (direct) emissions overseas	67.5	96.6	**62.2**	**54.7**	8
Scope 2 (indirect) emissions overseas	126.2	130.3	**122.4**	**125.0**	8
Total Scope 1 emissions	239.0	273.8	**220.3**	**202.2**	15
Total Scope 2 emissions	245.0	247.0	**231.1**	**234.8**	20

Category	FY2017	FY2018	FY2019 (New base year)	FY2020	FY
Total emissions (Same as total greenhouse gas emissions above)	484.0	520.8	**451.5**	**437.0**	36

Notes

1. The scope of data collection includes figures from factories, offices, etc. of Fuji Electric and all consolidated subsidiaries in Japan and from overseas consolidated production subsidiaries of the Company.
2. The totals for Indian and French bases were temporarily excluded in FY2021 (about 0.3%) because the objectivity and completeness of the collected data of these bases have been determined to be problematic. The totals will be recovered to the original condition in FY2022.
3. Power coefficients are used to calculate the indirect CO_2 emissions from power plants for each kWh of electricity purchased.
   For Japan, the average power coefficients (post credit redemption) for Japan used in Keirenden's Action Plan for Commitment to a Low-Carbon Society (0.439kg-CO_2e/kWh for fiscal 2021) are utilized.
4. For overseas, the average power coefficients for the respective countries described in IEA-Emission Factors (2021 edition) are utilized. Coefficients for [fiscal] 2019 are used for fiscal

Breakdown of Scope 1 Emissions

	Gas type	FY2017	FY2018	FY2019	FY2020	FY202
Scope 1 emissions in Japan	CO_2	102.4	102.5	**98.5**	**93.9**	91.7
	HFCs	3.1	2.8	**3.5**	**1.4**	1.5
	PFCs	43.7	45.5	**33.7**	**31.4**	33.4
	SF6	21.7	25.8	**22.1**	**20.1**	18.6
	NF3	0.6	0.6	**0.4**	**0.7**	0.6
	total	171.5	177.2	**158.1**	**147.5**	145.8
Scope 1 emissions overseas	CO_2	8.3	7.7	**6.3**	**6.7**	5.7
	HFCs	50.0	58.6	**42.5**	**46.6**	1.4
	PFCs	0.9	1.0	**0.9**	**1.0**	1.2
	SF6	8.3	29.2	**12.4**	**0.5**	0.4
	total	67.5	96.6	**62.2**	**54.7**	8.7
Total Scope 1 emissions	CO_2	110.7	110.2	**104.8**	**100.6**	97.4

	Gas type	FY2017	FY2018	FY2019	FY2020	FY202
	HFCs	53.1	61.4	**46.0**	**47.9**	2.9
	PFCs	44.6	46.5	**34.6**	**32.4**	34.6
	SF6	30.1	55.0	**34.5**	**20.5**	19.0
	NF3	0.6	0.6	**0.4**	**0.7**	0.6
	total	239.0	273.8	**220.3**	**202.2**	154.5

Breakdown of Scope 1 and 2 Emissions by Country in Fiscal 2021

(kt-CO_2e) (Power conefficien kg-CO_2e/kWh)

Country	Scope 1	Scope 2	Total	Power coefficient
Japan	145.786	121.987	267.774	0.4390
Malaysia	3.047	41.426	44.473	0.6621
China	5.084	32.625	37.709	0.6224
Philippines	0.022	10.023	10.044	0.6720
Thailand	0.572	3.159	3.731	0.3852
Singapore	0.000	0.270	0.270	0.3876

Scope3 Emissions

Category		Details	Scope3 Emissio			
			FY2017	FY2018	FY2019	
Upstream	**1**	**Products and services purchased**	166.3	248.0	**1,977.9**	
	2	**Capital goods**	76.1	124.3	**138.3**	
	3	**Fuel and energy purchases (outside Scope 1/2)**	30.7	30.8	**52.9**	
	4	**Transport and delivery (upstream)**	13.6	14.0	**15.9**	
	5	**Waste discharged from business operations**	5.1	5.4	**6.5**	

Category		Details	Scope3 Emissio			
			FY2017	FY2018	FY2019	
	6	**Business travel**	1.9	1.9	**3.6**	
	7	**Commuting**	8.2	8.2	**13.8**	
	8	**Use of lease assets (upstream)**	0	0	**5.8**	
		Subtotal	301.9	432.6	**2,214.9**	
	9	**Transport/delivery (downstream)**	×	×	**×**	
	10	**Processing of sold products**	×	×	**×**	
Down	11	**Use of products sold**	3,008.1	4,111.1	**122,065.5**	5
	12	**Waste processing of products sold**	×	×	**×**	
	13	**Use of lease assets (downstream)**	0	0	**0**	
	14	**Franchise**	0	0	**0**	
	15	**Investment**	0	0	**0**	
	Total		3,310.0	4,543.7	**124,281.3**	5

- In Category 8 (Upstream leased assets), the emissions from our company's office spaces are excluded from SC1 and 2 amounts because these spaces are rental properties as tenants or leased assets.
- Calculation methods of Category 11 (Use of Sold products) have been revised as follows: Calculation ranges are our company's seven product families, which account for 80% or more of the entire emissions when all of our products are in use.
The calculation methods of emissions from our products during entire product lifetime as follows
Finished products: The number of delivered products × Total annual power consumption (fuel consumption) × Lifetime × CO2 coefficient

Intermediate products: The number of delivered products × Total annual power loss (energy loss of components) × Lifetime × CO2 coefficient
Finished products include thermal power generation as prime contracts, industrial electric heating, showcases and others, which end users use as finished products.
Intermediate products include turbines/generators as subcontracts, power semiconductors, motors, transformers and others, which are incorporated in our clients' products which end users use.

*2 Third party evaluation will be performed for Category 1 to 8 and 11 but emission evaluation is expected to be performed around February of the next fiscal year.

Greenhouse Gas Emissions in Fuji Electric's Overall Supply Chain

	FY2017	FY2018	FY2019	FY2020	FY2021
Scope3(upstream)	302	433	**2,215**	**1,993**	2,190
Scope1(Direct emissions)	239	274	**220**	**202**	155
Scope2 (Indirect emissions)	245	247	**231**	**235**	209
Subtotal	786	953	**2,666**	**2,436**	2,554
Scope3(Down stream)	3,008	4,111	**122,066**	**54,453**	177,383
Total	3,794	5,065	**124,733**	**56,884**	179,936

Notes : The scope of calculations for categories 3 through 8 of Scope 3 were expanded Company-wide in fiscal 2019

Emissions Transactions

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Location (Period)	Emissions credit acquisition	Emissions credit purchase	Emissions credit redemption	Outstan credi
Tokyo (Tokyo Factory) (FY2015–2020)	0 (765)	0 (0)	407 (0)	3,82 (4,23
Saitama prefecture (Fukiage Factory) (FY2011–2020)	3,615 (4,059)	0 (0)	0 (0)	35,01 (31,39
Shenzhen (FY2013–2021)	0 (0)	0 (0)	4,304 (9,707)	5,40 (9,70

Notes : Figures in parentheses are from the report for the previous fiscal year.

Emissions Transaction System

Location	Second reduction period	Reduction target (Result from first reduction peri
Tokyo (Tokyo Factory)	FY2020–2024	25% reduction in emissions from b year(15% reduction)
Saitama prefecture (Fukiage Factory)	FY2020–2024	20% reduction in emissions from b year(13% reduction)

Location	Second reduction period	Reduction target (Result from first reduction peri
Shenzhen	FY2021–2025	Annual reduction in emissions of 1. (6.39% reduction)

Note: Fuji Electric no longer discloses names of verification institutions.

Renewable Energy Use

Category	FY2017	FY2018	FY2019	FY2020	FY2
Renewable energy certificates purchased	-	-	-	-	
Solar power generated in Japan	487	487	539	592	6
Solar power generated overseas	638	672	2,113	1,575	1,
Solar power purchased overseas	-	228	1,309	1,730	3,
Total	1,125	1,386	3,962	3,897	5,

Notes : Solar power is only purchased overseas.

Power Supply Capacity from Renewable Energy Projects (Feed-In Tariff Scheme Electricity Sales)

Category	FY2017	FY2018	FY2019	FY2020	FY20
Wind power	2,628	2,628	2,628	2,628	2,6
Solar power	4,205	4,205	4,205	4,205	4,2
Total	6,833	6,833	6,833	6,833	6,8

Renewable Energy Power Supply Shipment Amounts

Category	FY2017	FY2018	FY2019	FY2020	FY20
Total	249	590	488	422	18

Notes : Figures above represent total shipment amounts of geothermal power generation systems, hydro power generation systems, biomass power generation systems, and solar power generation systems (including power conditioning sub-systems).

CO_2 Emissions Reductions from Provision of Renewable Energy Power Supplies

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Category	FY2017	FY2018	FY2019	FY2020	FY20

Category	FY2017	FY2018	FY2019	FY2020	FY20
Total	7.379	9.243	11.072	12.818	13.3

of operation of products shipped for each fiscal year after fiscal 2009 and converting that amount into an amount of CO_2 corresponding with the emissions that would have occurred should that amount of power have been generated through thermal power.

Total Waste / Waste Sent to Landfills

Region	Total / Landfill	Category	FY2017	FY2018	FY2019	FY2
Japan	Total waste	Sludge	1,253	1,268	**1,667**	**1,7**
		Waste oil	1,132	1,198	**1,309**	**1,1**
		Acid / alkali waste	1,662	1,672	**1,523**	**1,3**
		Waste plastic	1,870	2,051	**1,951**	**1,6**
		Paper / wood scraps	4,062	4,364	**4,157**	**3,5**
		Metal scraps	12,443	12,039	**12,097**	**9,9**
		Others	230	226	**275**	**28**
		Total	22,652	22,819	**22,979**	**19,**
	Sent to landfills		37	145	**115**	**12**
		Ratio of waste sent to landfills	0.2%	0.6%	**0.5%**	**0.6**
Overseas	Total waste	Sludge	1,743	1,719	**1,976**	**2,0**
		Waste oil	249	287	**250**	**32**
		Acid / alkali waste	3,578	3,720	**2,689**	**1,3**
		Waste plastic	291	317	**272**	**33**
		Paper / wood scraps	256	270	**255**	**32**
		Metal scraps	3,678	4,235	**3,716**	**3,2**
		Others	200	211	**250**	**19**
		Total	9,995	10,759	**9,408**	**7,8**
	Sent to landfills		724	399	**229**	**36**
		Ratio of waste sent to landfills	7.2%	3.7%	**2.4%**	**4.7**
Total	Total waste	Sludge	2,995	2,987	**3,643**	**3,8**
		Waste oil	1,381	1,485	**1,559**	**1,4**

Region	Total / Landfill	Category	FY2017	FY2018	FY2019	FY2
		Acid / alkali waste	5,240	5,392	**4,212**	**2,6**
		Waste plastic	2,161	2,368	**2,224**	**2,0**
		Paper / wood scraps	4,318	4,634	**4,412**	**3,8**
		Metal scraps	16,122	16,274	**15,813**	**13,**
		Others	430	437	**525**	**47**
		Total	32,648	33,578	**32,387**	**27,**
			762	543	**345**	**48**
	Sent to landfills	Ratio of waste sent to landfills	2.3%	1.6%	**1.1%**	**1.8**

* Total waste is the amount of unnecessary articles created during production activities (industrial waste, general waste, and valuable waste).

* Ratio of waste sent to landfills is calculated as follows: Waste sent to landfills ÷ Total waste

Hazardous waste / non-hazardous waste

Type	Indicator	FY2017	FY2018	FY2019	FY2020	FY
Hazardous waste	Total waste	9,617	9,864	9,415	7,957	6,
	Amount of waste recycled	7,767	8,370	8,707	6,774	5,
	Recycling rate	81%	85%	92%	85%	7
	Sent to landfills	511	175	83	288	5
	Ratio of waste sent to landfills	5.3%	1.8%	0.9%	3.6%	8.
Non-hazardous waste	Total waste	23,031	23,714	22,972	19,627	23,
	Amount of waste recycled	22,221	22,854	21,993	18,988	22,
	Recycling rate	96%	96%	96%	97%	9
	Sent to landfills	251	368	262	201	1
	Ratio of waste sent to landfills	1.1%	1.6%	1.1%	1.0%	0.
Total	Total waste	32,648	33,578	32,387	27,584	30,
	Amount of waste recycled	29,988	31,224	30,700	25,762	28,

Type	Indicator	FY2017	FY2018	FY2019	FY2020	FY
	Recycling rate	92%	93%	95%	93%	9
	Sent to landfills	762	543	345	489	6
	Ratio of waste sent to landfills	2.3%	1.6%	1.1%	1.8%	2.

* Hazardous waste: Under Japan's Waste Management and Public Cleansing Act, businesses are responsible for all of the industrial waste they generate (including the issuing of manifests and final disposal). This law does not distinguish between hazardous waste and non-hazardous waste. We consider hazardous waste to be harmful waste materials and we therefore retallied our figures according to the following types of waste: waste oil, waste acid and waste alkali, organic and inorganic sludge, and used activated carbon.

Water Resources

Water Intake

Category		FY2017	FY2018	FY2019	FY2020	FY
Japan	Potable water purchased	465	591	**925**	**1,100**	9
	Industrial water purchased	2,564	2,836	**2,749**	**2,766**	2,
	Total water purchased	3,029	3,427	**3,674**	**3,866**	3,
	Groundwater intake	4,206	4,077	**3,962**	**3,894**	3,
	Total water intake in Japan	7,235	7,503	**7,636**	**7,760**	7,
Overseas	Industrial water purchased	5,288	5,974	**5,762**	**5,575**	2,
	Groundwater intake	0	0	**0**	**1**	
	Industrial water purchased	5,288	5,974	**5,762**	**5,576**	2,
Total	Total water intake	12,523	13,478	**13,398**	**13,336**	9,

Notes:

1. "Potable water" refers to drinkable tap water. "Industrial water" refers to water for industrial purposes that is not drinkable.
2. Total water intake in Japan is the sum of potable water purchased, industrial water purchased, and groundwater intake.
3. Volume of groundwater does not include groundwater used for soil cleanup, for agricultural purposes, or for melting snow.
4. The scope of data collection includes all domestic and overseas bases.

5. The totals for Indian and French bases were temporarily excluded in FY2021 because the objectivity and completeness of the collected data of these bases have been determined to be problematic. The totals will be recovered to the original condition in FY2022.

Water Recycled

Category		FY2017	FY2018	FY2019	FY2020	FY
Japan	Amount of water recycled	982	1,055	1,940	2,087	2,
	Recycling rate	11.9%	12.3%	20.3%	21.2%	23
Overseas	Amount of water recycled	227	822	725	917	2
	Recycling rate	4.1%	12.1%	11.2%	14.1%	10
Total	Amount of water recycled	1,209	1,877	2,665	3,004	2,
	Recycling rate	8.8%	12.2%	16.6%	18.4%	20

Notes : Recycling rate is calculated as follows: Amount of water recycled ÷ Amount used (Intake amount + Amount recycled)

Wastewater

Category		FY2017	FY2018	FY2019	FY2020	FY
Japan	Volume of wastewater to the sewer	1,082	1,233	1,170	1,166	1,
	Volume of wastewater to the river	6,154	6,270	6,466	6,593	6,
	Subtotal	7,235	7,503	7,636	7,760	7,
Overseas	Volume of wastewater to the sewer	558	568	520	510	5
	Volume of wastewater to the river	4,730	5,406	5,242	5,066	1,
	Subtotal	5,288	5,974	5,762	5,576	2,
Total	Volume of wastewater to the sewer	1,639	1,801	1,690	1,676	1,
	Volume of wastewater to the river	10,884	11,676	11,708	11,660	7,
	Total	12,523	13,478	13,398	13,336	9,

PRTR-VOC

Volume of PRTR Law Regulated Substances Handled / Emitted

		FY2017	FY2018	FY2019	FY2020	FY2
Japan	Handled	568.5	824.2	782.1	723.6	68
	Emitted	154.7	152.9	143.6	169.7	18
Overseas	Handled	1,882.0	1,912.7	1,516.5	939.4	52
	Emitted	1,034.1	936.4	755.3	478.6	30
Total	Handled	2,450.4	2,737.0	2,298.6	1,663.0	1,2
	Emitted	1,188.8	1,089.3	898.9	648.3	49

Volume of VOCs Handled / Emitted

		FY2017	FY2018	FY2019	FY2020	FY2
Japan	Handled	600.6	617.4	**565.4**	**597.5**	69
	Emitted	232.0	233.5	**257.0**	**260.8**	26
Overseas	Handled	1,264.8	1,205.3	**922.1**	**650.1**	49
	Emitted	1,139.6	1,023.2	**826.0**	**557.8**	34
Total	Handled	1,865.4	1,822.7	**1,487.5**	**1,247.6**	1,1
	Emitted	1,371.6	1,256.7	**1,083.0**	**818.6**	61