

# ESG Data 2023 - Environmental Data

Updated Dec. 2023

TEPCO HD and core operating companies (Tokyo Electric Power Company Holdings, Inc., TEPCO Fuel & Power, Inc., TEPCO Power Grid, Inc., TEPCO Energy Partner, Inc., and TEPCO Renewable Power, Inc.)						
GRI	UM	FY2019	FY2020	FY2021	FY2022	
<b>Coverage</b>						
Operating revenues	( Billion yen )	62,414	58,668	53,099	77,986	
Electric power operating revenues	( Billion yen )	58,781	55,142	48,416	71,321	
Other operating revenues	( Billion yen )	3,633	3,526	4,683	6,665	
TEPCO HD and core operating companies / TEPCO HD and all of consolidated subsidiary companies	( % )	94	94	91	91	
GRI	UM	FY2019	FY2020	FY2021	FY2022	
<b>Key figures</b>						
<b>Installed capacity by energy source</b>						
Total net electrical capacity	( MW )	18,194	18,199	18,200	18,122	*1
Thermal net capacity	( MW )	57	58	58	58	
Coal	( MW )	0	0	0	0	
LNG	( MW )	0	0	0	0	
Oil	( MW )	57	58	58	58	
Nuclear net capacity	( MW )	8,212	8,212	8,212	8,212	
Renewable net capacity	( MW )	9,925	9,929	9,930	9,852	
Hydroelectric	( MW )	9,874	9,878	9,879	9,801	*2
Solar	( MW )	30	30	30	30	
Wind	( MW )	21	21	21	21	
Geothermal	( MW )	0	0	0	0	
Biomass and cogeneration	( MW )	0	0	0	0	
<b>Net energy production by energy source</b>						
Total net electrical production (energy consumption)	( GWh )	10,966	11,937	13,106	11,706	*1
Thermal net production (energy consumption)	( GWh )	160	159	157	156	
Coal	( GWh )	0	0	0	0	
LNG	( GWh )	0	0	0	0	
Oil	( GWh )	160	159	157	156	
Nuclear net production (energy consumption)	( GWh )	0	0	0	0	
Renewable net production (energy consumption)	( GWh )	10,806	11,778	12,948	11,550	
Hydroelectric	( GWh )	10,743	11,722	12,882	11,489	*2
Solar	( GWh )	31	29	29	24	
Wind	( GWh )	32	26	37	36	
Geothermal	( GWh )	0	0	0	0	
Biomass and cogeneration	( GWh )	0	0	0	0	*3
<b>Efficiency</b>						
Thermal power plant	( % )	-	-	-	-	
<b>Development</b>						
Development of renewable power generation facilities	( MW )	30	138	192	326	
<b>Availability</b>						
Nuclear power plant	( % )	0	0	0	0	

## Network

### Electricity network

Total transmission network	( km )	40,804	41,059	40,966	41,037
- of which aerial line	( km )	28,391	28,585	28,453	28,480
- of which underground cable	( km )	12,413	12,474	12,513	12,557
Total distribution network	( km )	381,028	382,290	383,415	384,544
- of which aerial line	( km )	342,222	343,257	344,208	345,095
- of which underground cable	( km )	38,806	39,033	39,207	39,449

### Transmission and distribution loss

Extra high voltage	( % )	2.9	1.4	1.3	1.3	*4
High voltage	( % )	4.2	3.9	3.9	3.7	*4
Low voltage	( % )	7.1	6.4	6.6	6.9	*4
Average	( % )	4.3	4.0	4.5	3.8	

### Supply reliability

System Average Interruption Duration Index (SAIDI)	( hour )	3.3	0.12	0.12	0.08
Interruption time (min.) / year (min.)	( % )	0.038	0.001	0.001	0.001

## Smart meter

Number of installations	( 10k units )	2,533	2,840	2,840	2,840	*5
Installation rate	( % )	87.2	100	100	100	*5

## Sales

Electricity volumes	( GWh )	209,707	192,866	177,118	173,089	
CO <sub>2</sub> related electricity sales						
Adjusted emissions intensity	( kg-CO <sub>2</sub> /kWh )	0.441	0.441	0.451	0.376	*6
Basic emissions intensity	( kg-CO <sub>2</sub> /kWh )	0.457	0.447	0.457	0.457	
Adjusted emissions	( ktCO <sub>2</sub> )	92,400	85,100	79,900	65,100	*7
Basic emissions	( ktCO <sub>2</sub> )	95,800	86,300	80,900	79,100	
Gas volumes	( kt )	2,170	2,100	2,710	2,720	
Leakege rate (Transportation)	( % )	0	0	0	0	
Leakege rate (Distribution)	( % )	0	0	0	0	
Leakege rate (Strage)	( % )	0	0	0	0	

## Environmental compliance

Total monetary value of significant fines	( mil. JPY )	0	0	0	0
Total number of non-monetary sanctions	( no. )	0	0	0	0

## Significant spill

Total number of significant spill	( no. )	0	0	0	0
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GRI

UM FY2019 FY2020 FY2021 FY2022

## Emissions

305-1	<b>Direct greenhouse gas emissions (Scope 1)</b>					*8	
	Total direct emissions (Scope 1)	( ktCO <sub>2</sub> eq )	191	190	192	193	*9
	CO <sub>2</sub> emissions from electricity production and other activities	( ktCO <sub>2</sub> )	120	120	118	119	
	CO <sub>2</sub> emissions from vehicles (gasoline and diesel)	( ktCO <sub>2</sub> )	8	7	7	6	
	Total other CO <sub>2</sub> eq emissions	( ktCO <sub>2</sub> eq )	63	63	67	68	
	N <sub>2</sub> O	( ktCO <sub>2</sub> eq )	1	1	1	1	
	HFCs	( ktCO <sub>2</sub> eq )	3	3	3	6	*10
	SF <sub>6</sub>	( ktCO <sub>2</sub> eq )	59	59	63	61	*10
	Other emissions volume						
	N <sub>2</sub> O	( t )	3	3	3	3	
	SF <sub>6</sub>	( t )	2.6	2.6	2.8	2.7	*10
	SF <sub>6</sub> recovery rate						
	In equipment inspections	( % )	>99.5	>99.5	99	>99.5	
	In equipment removal	( % )	>99.5	>99.5	99	99	
	Fluorocarbon emissions						
	Leaked volumes based on the act on rational use and proper management of fluorocarbon	( ktCO <sub>2</sub> eq )	9	5	6	9	



GRI		UM	FY2019	FY2020	FY2021	FY2022
	<b>Raw materials</b>					
301-1	<b>Fuel consumption</b>					
	<b>from non-renewable sources</b>					
	Coal	( kt )	<1	<1	<1	<1
	Heavy oil, crude oil, etc.	( ML )	44	44	43	44
	Gas (LNG, LPG)	( kt )	<1	<1	<1	<1
	City Gas	( mil m <sup>3</sup> )	<1	<1	<1	<1
	Fuel for nuclear power plants	( t )	0	0	0	0
	<b>from renewable sources</b>					
	Biomass	( kt )	0	0	0	0
GRI		UM	FY2019	FY2020	FY2021	FY2022
	<b>Water</b>					
303-3	<b>Water withdrawal in "water stressed" areas</b>					
	Total	( kilo m <sup>3</sup> )	0	0	0	0
303-3	<b>Water withdrawal by source</b>					
	Total withdrawal from scarce sources	( kilo m <sup>3</sup> )	46,015,293	47,420,172	49,463,282	47,263,796
	Surface water (wetlands, lakes, rivers)	( kilo m <sup>3</sup> )	46,014,462	47,419,391	49,462,537	47,263,067
	Ground water (from wells)	( kilo m <sup>3</sup> )	42	25	27	24
	Water from municipal water supplies	( kilo m <sup>3</sup> )	789	756	719	705
	<b>Water withdrawal by uses</b>					
	Total	( kilo m <sup>3</sup> )	46,015,293	47,420,172	49,463,282	47,263,796
	River water for hydroelectric plants	( kilo m <sup>3</sup> )	46,014,244	47,419,231	49,462,389	47,262,577
	Industrial water	( kilo m <sup>3</sup> )	138	67	73	384
	Municipal water	( kilo m <sup>3</sup> )	869	849	794	811
	Groundwater	( kilo m <sup>3</sup> )	42	25	27	24
303-4	<b>Water discharge by destination</b>					
	Total	( kilo m <sup>3</sup> )	46,015,290	47,420,170	49,463,282	47,263,796
	Surface water (wetlands, lakes, rivers)	( kilo m <sup>3</sup> )	46,014,244	47,419,231	49,462,389	47,262,577
	Groundwater	( kilo m <sup>3</sup> )	0	0	0	0
	Sea (in industrial treatment plants)	( kilo m <sup>3</sup> )	432	352	335	668
	Third party water (municipal treatment plants)	( kilo m <sup>3</sup> )	614	588	558	551
303-5	<b>Freshwater consumption</b>					
	Total	( kilo m <sup>3</sup> )	3	2	<1	<1
	<b>Water treatment</b>					
	Volume of waste water treatment in power plants	( kilo m <sup>3</sup> )	-	-	-	-
	COD emissions from power plants	( t )	-	-	-	-
GRI		UM	FY2019	FY2020	FY2021	FY2022
	<b>Waste</b>					
	<b>Industrial waste by disposal method</b>					
306-3	Total generated	( kt )	146	144	148	140
306-4	Recycled volume	( kt )	146	144	148	140
306-5	Landfill treatment volume	( kt )	0.030	0.105	0.486	0.055
	Recycling rate	( % )	>99.9	99.9	99.6	99.9
	<b>Hazardous waste</b>					
	Waste volume containing PCB	( kt )	25	26	27	18
	Insulating oil (inadvertently contaminated)	( ML )	4	4	4	4
	Pole-mounted transformers	( 10k units )	9	7	5	3
	High-voltage transformers and capacitors (high contaminated)	( units )	121	3	24 -	*20
	<b>Management of remaining PCB equipments</b>					
	Pole-mounted transformers	( 10k units )	16	12	8	6
	High-voltage transformers and capacitors (high contaminated)	( units )	63	23	0 -	*20
	<b>Ash management</b>					
	Total generated	( kt )	0	0	0	0
	Recycled volume	( kt )	0	0	0	0
	Landfill treatment volume	( kt )	0	0	0	0
	Recycling rate	( % )	-	-	-	-

GRI		UM	FY2019	FY2020	FY2021	FY2022	
	<b>Other</b>						
	<b>Electric vehicle</b>						
	Number of EV or PHEV	( no. )	427	569	656	720	
	Rate of EV or PHEV fleets	( % )	10	15	18	21	
	<b>Green procurement</b>						
	Green procurement rate in office supplies (monetary value based)	( % )	>99.9	99.8	99.9	99.9	
	<b>Paper bought for printers/ photocopiers</b>						
	Number of sheets (equivalent A4 sheets)	( mil A4eq )	258	205	170	171	
	Weight	( t )	1,028	818	678	681	
	<b>TEPCO HD and all of consolidated subsidiary companies</b>						
GRI	KPI	UM	FY2019	FY2020	FY2021	FY2022	注
	<b>Key figures</b>						
	<b>Installed capacity by energy source</b>						
	Total net electrical capacity	( MW )	18,345	18,350	18,354	18,269	
	Thermal net capacity	( MW )	57	58	58	58	
	Coal	( MW )	0	0	0	0	
	LNG	( MW )	0	0	0	0	
	Oil	( MW )	57	58	58	58	
	Nuclear net capacity	( MW )	8,212	8,212	8,212	8,212	
	Renewable net capacity	( MW )	10,076	10,080	10,084	9,998	
	Hydroelectric	( MW )	10,021	10,025	10,021	9,945	*2
	Solar	( MW )	31	31	39	30	
	Wind	( MW )	21	21	21	21	
	Geothermal	( MW )	0	0	0	0	
	Biomass and cogeneration	( MW )	3	3	3	3	
	<b>Net energy production by energy source</b>						
	Total net electrical production	( GWh )	11,638	12,561	13,698	12,248	
	Thermal net production	( GWh )	160	159	157	156	
	Coal	( GWh )	0	0	0	0	
	LNG	( GWh )	0	0	0	0	
	Oil	( GWh )	160	159	157	156	
	Nuclear net production	( GWh )	0	0	0	0	
	Renewable net production	( GWh )	11,478	12,402	13,541	12,092	
	Hydroelectric	( GWh )	11,396	12,332	13,458	12,016	*2
	Solar	( GWh )	32	31	31	25	
	Wind	( GWh )	32	26	37	36	
	Geothermal	( GWh )	0	0	0	0	
	Biomass and cogeneration	( GWh )	19	13	16	16	*21
	<b>Sales</b>						
	Electricity volumes	( GWh )	222,277	204,484	233,812	242,784	*23
2-27	<b>Environmental compliance</b>						
	Total monetary value of significant fines	( mil. JPY )	0	0	0	0	
	Total number of non-monetary sanctions	( no. )	0	0	0	0	
	<b>Significant spill</b>						
	Total number of significant spill	( no. )	0	0	0	0	
	<b>ISO 14001</b>						
	Certificated offices	( no. )	24	24	19	20	*22

GRI		UM	FY2019	FY2020	FY2021	FY2022	注
	<b>Emissions</b>						
305-1	<b>Direct greenhouse gas emissions (Scope 1)</b>						
	Total direct emissions (Scope 1)	( ktCO <sub>2</sub> eq )	200	203	203	205	
305-2	<b>Indirect greenhouse gas emissions (Scope 2)</b>						
	Total of Scope2,market based	( ktCO <sub>2</sub> eq )	5,914	5,229	5,777	4,934	
	Total of Scope2,location based	( ktCO <sub>2</sub> eq )	5,920	5,231	5,773	4,913	
	Civil uses, hydroelectric and thermal electric plants						
	Related to energy purchased from the grid (Scope 2, market based)	( ktCO <sub>2</sub> eq )	520	493	489	507	
	Related to energy purchased from the grid (Scope 2, location based)	( ktCO <sub>2</sub> eq )	525	495	485	485	
	Related to technical losses from distribution and transmission network	( ktCO <sub>2</sub> eq )	5,395	4,736	5,288	4,427	
	<b>Scope 1 and 2</b>						
	Market based	( ktCO <sub>2</sub> eq )	6,114	5,432	5,980	5,139	
	Location based	( ktCO <sub>2</sub> eq )	6,120	5,433	5,976	5,118	
302-2 305-3	<b>Other indirect greenhouse gas emissions (Scope 3, per GHG protocol)</b>						
	Total of Scope 3	( ktCO <sub>2</sub> eq )	-	-	-	106,401	*24
GRI		UM	FY2019	FY2020	FY2021	FY2022	注
	<b>Energy</b>						
302-1 302-4	<b>Energy consumption</b>						
	Total	( GJ )	13,223,953	13,084,756	13,122,744	13,135,128	
GRI		UM	FY2019	FY2020	FY2021	FY2022	注
	<b>Water</b>						
303-3	<b>Water withdrawal by uses</b>						
	Total	( kilo m <sup>3</sup> )	50,038,077	51,300,384	52,787,101	50,621,370	
	River water for hydroelectric plants	( kilo m <sup>3</sup> )	50,036,857	51,299,291	52,786,057	50,619,971	
	Industrial water for thermal electric plants	( kilo m <sup>3</sup> )	138	67	73	384	
	Municipal water	( kilo m <sup>3</sup> )	1,040	1,000	944	991	
	Groundwater	( kilo m <sup>3</sup> )	42	25	27	25	
GRI	KPI	UM	FY2019	FY2020	FY2021	FY2022	注
	<b>Waste</b>						
	<b>Industrial waste by disposal method</b>						
306-3	Total generated	( kt )	158	179	212	152	
306-4	Recycled volume	( kt )	158	179	212	152	
306-5	Landfill treatment volume	( kt )	<1	<1	<1	<1	
	Recycling rate	( % )	100	100	100	100	
GRI	KPI	UM	FY2019	FY2020	FY2021	FY2022	注
	<b>Other</b>						
	<b>Electric vehicle</b>						
	Number of EV or PHEV	( no. )	430	592	690	754	*22
	<b>Green procurement</b>						
	Green procurement rate in office supplies (monetary value based)	( % )	98.9	97.6	95.3	94.8	
	<b>Paper bought for printers/ photocopiers</b>						
	Number of sheets (equivalent A4 sheets)	( mil A4eq )	348	323	247	249	
	Weight	( t )	1,390	1,289	985	993	

- Figures which are marked with ★ have been externally assured by KPMG AZSA Sustainability Co.,Ltd.
- Totals may not be exact due to significant digits or rounding.
- Due to integrating the existing thermal power generation businesses of TEPCO Fuel & Power, Inc. into JERA Co., Inc. as of 1 April 2019, since FY2019 there is a difference in the datas related to thermal electric plants compared to before FY2018.
- The values of TEPCO HD and all of consolidated subsidiary companies are the sum of the value multiplying each company data by the voting rights ratio.
- The values are for the fiscal year (from 1 April to 31 March) or as of the end of the fiscal year (31 March) unless otherwise specified.

- \*1 Source: "Surveys and Statistics of Electricity (the Agency for Natural Resources and Energy)"
- \*2 Including pumped-storage power generation
- \*3 The value in [] is the re-posted value of biomass power generation in thermal power production.
- \*4 From FY 2022 results, the transmission and distribution loss rate by voltage is the transmission and distribution loss rate by voltage stated in the wheeling supply agreement announced at the beginning of the fiscal year. The results for fiscal 2019-2021 have also been retroactively revised.
- \*5 Since the installation has been completed in all households except for some places where replacement work is difficult, the values for FY2020 are listed after FY2021.
- \*6 Adjusted emissions intensity is the value after adjustment of feed-in tariff scheme for renewable energy based on the Act on Promotion of Global Warming Countermeasures.

- \* 7 Adjusted emissions is the value after adjustment of feed-in tariff scheme for renewable energy based on the Act on Promotion of Global Warming Countermeasures.
- \* 8 Emissions of greenhouse gases released directly into the atmosphere from emission sources within organizational boundaries.  
Calculated, in principle, with the emission factors specified in the GHG emissions accounting, reporting, and disclosure system administered by Japan's Ministry of the Environment, based on the Act on the Rational Use of Energy and the Law Concerning the Promotion of the Measures to Cope with Global Warming.  
However CO2 emissions from vehicles are included in Scope 1.
- \* 9 Emissions due to the fluorocarbon emissions are not included in total direct emissions (Scope 1).
- \* 10 The value for calendar year (from January 1 to December 31)
- \* 11 Emissions due to the use of electricity, heat and steam supplied by others.
- \* 12 "Market based" emissions are emissions which are calculated based on the emissions factor of each electricity retail company.  
Calculated by using the adjusted emissions factor for each electricity retail company and the emissions factor of heat and steam specified in the Act on Promotion of Global Warming Countermeasures."Total of Scope2, market based" emissions for FY2022 have been restated from 4,909 ktCO2eq.  
Due to a revision of the emissions associated with transmission and distribution losses, "Total of Scope2, market based" emissions for FY2021 have been restated from 6,106 ktCO2eq
- \* 13 "Location based" emissions reflect the average emissions factor of grids."Total of Scope2, location based" emissions for FY2022 have been restated from 4,888 ktCO2eq.  
Due to a revision of the emissions associated with transmission and distribution losses, "Total of Scope2, location based" emissions for FY2021 have been restated from 6,097 ktCO2eq
- \* 14 Transmission and distribution losses are calculated by multiplying the electricity TEPCO Power Grid transmitted in FY 2021 by the transmission and distribution loss rate.  
Emissions associated with transmission and distribution losses are calculated by multiplying transmission and distribution losses by the emissions factor for power transmission and distribution operators.
- \* 15 Indirect greenhouse gas emissions from business  
Approach to calculation  
We follow major guidelines have been published:  
"Corporate Value Chain (Scope 3) Accounting and Reporting Standard(GHG protocol)"  
"Green Value Chain Platform (Japanese Ministry of the Environment website, which provides Scope 3 emissions calculation methods and models)"  
Calculation method for each of the categories  
Category 1: A hybrid of the following two  
    A. Calculated by multiplying the procurement amount for each product/service purchased by the emissions intensity  
    B. If the supplier publishes corporate emissions and sales on their websites, etc., calculate using the published values and our procurement amount.  
Category 2: Calculated by multiplying the amount of annual capital investment in financial report by the emission factor  
Category 3: The sum of the following two values;  
    A. Emissions from resource extraction, production and transportation  
        Calculated by multiplying electricity sales by emission factors  
    B. Emissions of energy consumption by other companies related to the amount of electricity sold  
        Calculated by multiplying the amount of electricity procured from other companies by the emission factor  
Category 4: No applicable emissions due to our type of business  
Category 5: Calculated by multiplying the volume of industrial waste by the emission factor for each type of waste treatment method  
Category 6: Calculated by multiplying the number of employees by the emission factor  
Category 7: Calculated by multiplying the number of employees by the number of business days and the emission factor for each location type of office  
Category 8: No applicable emissions due to our type of business  
Category 9: No applicable emissions due to our type of business  
Category 10: No applicable emissions due to our type of business  
Category 11: Calculated by multiplying the volume of gas sales by the emission factor  
Category 12: No applicable emissions due to our type of business  
Category 13: No applicable emissions due to our type of business  
Category 14: No applicable emissions due to our type of business  
Category 15: No applicable emissions due to our type of business
- \* 16 From FY2022 results, the scope of aggregation has been expanded to include all purchased products and services.
- \* 17 Emissions due to the extraction, production and transportation of fuel resources for power generation:  
Calculated by multiplying the electricity sold with the emissions coefficient specified in the emissions coefficients database for the calculation of GHG emissions throughout the supply chain available from Japan's Ministry of the Environment.  
Emissions associated with the electricity purchased from outside the TEPCO Group:  
Calculated by multiplying the electricity purchased from outside the TEPCO Group by the emissions factor of the TEPCO Group company that sells electricity and that for power transmission and distribution operators.
- \* 18 Emissions associated with the use of city gas we sell:  
Calculated by multiplying the city gas sold (in calorific value) by the emissions factor specified in the GHG emissions accounting, reporting, and disclosure system administered by Japan's Ministry of the Environment.  
"Scope3, Category 11 Use of sold products" emissions for FY2022 have been restated from 7,471 ktCO2eq.  
Due to a review of the summary values, the figure for FY2021 was revised retroactively from 7,329 ktCO2eq

- \* 19 Not applicable to mercury emission facilities under the Air Pollution Control Act after FY2019
- \* 20 We completed the disposal of high contaminated PCBs by the end of FY2021.
- \* 21 Regarding the value related to TEPCO Fuel & Power, Inc. of the value in [] the re-posted value of biomass power generation in thermal power production.
- \* 22 Added up without multiplying by voting rights ratio
- \* 23 Figures for FY2020 and earlier show retail electricity. And the total of retail electricity and wholesale electricity is shown since FY2021.
- \* 24 From FY2022 results, the scope of aggregation has been expanded to include all consolidated subsidiaries.