

# ESG Data 2022 - Environmental Data

Updated May 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	FY2018	FY2019	FY2020	FY2021	
<b>Coverage</b>						
Operating revenues	( Billion yen )	63,385	62,414	58,668	53,099	
Electric power operating revenues	( Billion yen )	60,327	58,781	55,142	48,416	
Other operating revenues	( Billion yen )	3,058	3,633	3,526	4,683	
TEPCO HD and core operating companies / TEPCO HD and all of consolidated subsidiary companies	( % )	95	94	94	91	
GRI	UM	FY2018	FY2019	FY2020	FY2021	
<b>Key figures</b>						
<b>Installed capacity by energy source</b>						
Total net electrical capacity	( MW )	63,697	18,194	18,199	18,200	*1
Thermal net capacity	( MW )	41,161	57	58	58	
Coal	( MW )	3,200	0	0	0	
LNG	( MW )	29,251	0	0	0	
Oil	( MW )	8,710	57	58	58	
Nuclear net capacity	( MW )	12,612	8,212	8,212	8,212	
Renewable net capacity	( MW )	9,924	9,925	9,929	9,930	
Hydroelectric	( MW )	9,873	9,874	9,878	9,879	*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 )	190,752	10,966	11,937	13,106	*1
Thermal net production (energy consumption)	( GWh )	179,610	160	159	157	
Coal	( GWh )	23,888	0	0	0	
LNG	( GWh )	153,517	0	0	0	
Oil	( GWh )	2,204	160	159	157	
Nuclear net production (energy consumption)	( GWh )	0	0	0	0	
Renewable net production (energy consumption)	( GWh )	11,142	10,806	11,778	12,948	
Hydroelectric	( GWh )	11,071	10,743	11,722	12,882	*2
Solar	( GWh )	32	31	29	29	
Wind	( GWh )	35	32	26	37	
Geothermal	( GWh )	4	0	0	0	
Biomass and cogeneration	( GWh )	[393]	0	0	0	*3
<b>Efficiency</b>						
Thermal power plant	( % )	49.7	-	-	-	
<b>Development</b>						
Development of renewable power generation facilities	( MW )	-	30	138	192	
<b>Availability</b>						
Nuclear power plant	( % )	0	0	0	0	

	<b>Network</b>					
	Electricity network					
	Total transmission network	( km )	40,663	40,804	41,059	40,966
	- of which aerial line	( km )	28,314	28,391	28,585	28,453
	- of which underground cable	( km )	12,349	12,413	12,474	12,513
	Total distribution network	( km )	379,724	381,028	382,290	383,415
	- of which aerial line	( km )	341,184	342,222	343,257	344,208
	- of which underground cable	( km )	38,540	38,806	39,033	39,207
	Transmission and distribution loss					
	Extra high voltage	( % )	1.4	1.3	1.3	- *4
	High voltage	( % )	3.9	3.9	3.7	- *4
	Low voltage	( % )	6.4	6.6	6.9	- *4
	Average	( % )	4.2	4.3	4.0	4.8
	Supply reliability					
	System Average Interruption Duration Index (SAIDI)	( min. )	19	200	7	7
	Interruption time (min.) / year (min.)	( % )	0.004	0.038	0.001	0.001
	<b>Smart meter</b>					
	Number of installations	( 10k units )	2,152	2,533	2,840	2,840 *5
	Installation rate	( % )	74.1	87.2	100	100 *5
	<b>Sales</b>					
	Electricity volumes	( GWh )	219,448	209,707	192,866	177,118
305-4	CO <sub>2</sub> related electricity sales					
	Adjusted emissions intensity	( kg-CO <sub>2</sub> /kWh )	0.455	0.441	0.441	0.451 *6
	Basic emissions intensity	( kg-CO <sub>2</sub> /kWh )	0.468	0.457	0.447	0.457
	Adjusted emissions	( ktCO <sub>2</sub> )	99,700	92,400	85,100	79,900 *7
	Basic emissions	( ktCO <sub>2</sub> )	102,700	95,800	86,300	80,900
	Gas volumes	( kt )	1,770	2,170	2,100	2,710
	Leakege rate (Transportation)	( % )	0	0	0	0
	Leakege rate (Distribution)	( % )	0	0	0	0
	Leakege rate (Strage)	( % )	0	0	0	0
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
GRI		UM	FY2018	FY2019	FY2020	FY2021
	<b>Emissions</b>					
305-1	<b>Direct greenhouse gas emissions (Scope 1)</b>					*8
	Total direct emissions (Scope 1)	( ktCO <sub>2</sub> eq )	81,604	191	190	192 ★ *9
	CO <sub>2</sub> emissions from electricity production and other activities	( ktCO <sub>2</sub> )	81,470	120	120	118
	CO <sub>2</sub> emissions from vehicles (gasoline and diesel)	( ktCO <sub>2</sub> )	8	8	7	7
	Total other CO <sub>2</sub> eq emissions	( ktCO <sub>2</sub> eq )	126	63	63	67
	N <sub>2</sub> O	( ktCO <sub>2</sub> eq )	59	1	1	1
	HFCs	( ktCO <sub>2</sub> eq )	6	3	3	3 *10
	SF <sub>6</sub>	( ktCO <sub>2</sub> eq )	61	59	59	63 *10
	Other emissions volume					
	N <sub>2</sub> O	( t )	198	3	3	3
	SF <sub>6</sub>	( t )	2.7	2.6	2.6	2.8 *10
	SF <sub>6</sub> recovery rate					
	In equipment inspections	( % )	>99.5	>99.5	>99.5	99
	In equipment removal	( % )	99	>99.5	>99.5	99
	Fluorocarbon emissions					
	Leaked volumes based on the act on rational use and proper management of fluorocarbon	( ktCO <sub>2</sub> eq )	13	9	5	6



GRI		UM	FY2018	FY2019	FY2020	FY2021
<b>Raw materials</b>						
301-1	<b>Fuel consumption</b>					
	<b>from non-renewable sources</b>					
	Coal	( kt )	8,145	<1	<1	<1
	Heavy oil, crude oil, etc.	( ML )	558	44	44	43
	Gas (LNG, LPG)	( kt )	20,785	<1	<1	<1
	City Gas	( mil m <sup>3</sup> )	2,090	<1	<1	<1
	Fuel for nuclear power plants	( t )	0	0	0	0
	<b>from renewable sources</b>					
	Biomass	( kt )	200	0	0	0
GRI		UM	FY2018	FY2019	FY2020	FY2021
<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> )	49,135,474	46,015,293	47,420,172	49,463,282
	Surface water (wetlands, lakes, rivers)	( kilo m <sup>3</sup> )	49,133,813	46,014,462	47,419,391	49,462,537
	Ground water (from wells)	( kilo m <sup>3</sup> )	39	42	25	27
	Water from municipal water supplies	( kilo m <sup>3</sup> )	1,622	789	756	719
	<b>Water withdrawal by uses</b>					
	Total	( kilo m <sup>3</sup> )	49,135,474	46,015,293	47,420,172	49,463,282
	River water for hydroelectric plants	( kilo m <sup>3</sup> )	49,124,416	46,014,244	47,419,231	49,462,389
	Industrial water	( kilo m <sup>3</sup> )	9,939	138	67	73
	Municipal water	( kilo m <sup>3</sup> )	1,102	869	849	794
	Groundwater	( kilo m <sup>3</sup> )	18	42	25	27
303-4	<b>Water discharge by destination</b>					
	Total	( kilo m <sup>3</sup> )	49,125,535	46,015,290	47,420,170	49,463,282
	Surface water (wetlands, lakes, rivers)	( kilo m <sup>3</sup> )	49,124,416	46,014,244	47,419,231	49,462,389
	Groundwater	( kilo m <sup>3</sup> )	18	0	0	0
	Sea (in industrial treatment plants)	( kilo m <sup>3</sup> )	1,102	432	352	335
	Third party water (municipal treatment plants)	( kilo m <sup>3</sup> )	0	614	588	558
303-5	<b>Freshwater consumption</b>					
	Total	( kilo m <sup>3</sup> )	9,939	3	2	<1
	<b>Water treatment</b>					
	Volume of waste water treatment in power plants	( kilo m <sup>3</sup> )	4,012	-	-	-
	COD emissions from power plants	( t )	14	-	-	-
GRI		UM	FY2018	FY2019	FY2020	FY2021
<b>Waste</b>						
	<b>Industrial waste by disposal method</b>					
306-3	Total generated	( kt )	1,084	146	144	148
306-4	Recycled volume	( kt )	1,081	146	144	148
306-5	Landfill treatment volume	( kt )	3	<1	<1	<1
	Recycling rate	( % )	99.8	>99.9	99.9	99.6
	<b>Hazardous waste</b>					
	Waste volume containing PCB	( kt )	27	25	26	27
	Insulating oil (inadvertently contaminated)	( ML )	4	4	4	4
	Pole-mounted transformers	( 10k units )	8	9	7	5
	High-voltage transformers and capacitors (high contaminated)	( units )	116	121	3	24
	<b>Management of remaining PCB equipments</b>					
	Pole-mounted transformers	( 10k units )	27	16	12	8
	High-voltage transformers and capacitors (high contaminated)	( units )	186	63	23	0

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	<b>Ash management</b>					
	Total generated	( kt )	741	0	0	0
	Recycled volume	( kt )	741	0	0	0
	Landfill treatment volume	( kt )	<1	0	0	0
	Recycling rate	( % )	>99.9	-	-	-
GRI		UM	FY2018	FY2019	FY2020	FY2021
	<b>Other</b>					
	<b>Electric vehicle</b>					
	Number of EV or PHEV	( no. )	446	427	569	656
	Rate of EV or PHEV fleets	( % )	-	10	15	18
	<b>Green procurement</b>					
	Green procurement rate in office supplies (monetary value based)	( % )	99.8	>99.9	99.8	99.9
	<b>Paper bought for printers/ photocopiers</b>					
	Number of sheets (equivalent A4 sheets)	( mil A4eq )	282	258	205	170
	Weight	( t )	1,126	1,028	818	678
	<b>TEPCO HD and all of consolidated subsidiary companies</b>					
GRI	<b>KPI</b>	UM	FY2018	FY2019	FY2020	FY2021
	<b>Key figures</b>					
	<b>Installed capacity by energy source</b>					
	Total net electrical capacity	( MW )	63,850	18,345	18,350	18,214
	Thermal net capacity	( MW )	41,161	57	58	58
	Coal	( MW )	3,200	0	0	0
	LNG	( MW )	29,251	0	0	0
	Oil	( MW )	8,710	57	58	58
	Nuclear net capacity	( MW )	12,612	8,212	8,212	8,212
	Renewable net capacity	( MW )	10,078	10,076	10,080	9,944
	Hydroelectric	( MW )	10,023	10,021	10,025	9,881
	Solar	( MW )	31	31	31	39
	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 )	191,398	11,638	12,561	13,135
	Thermal net production	( GWh )	179,610	160	159	157
	Coal	( GWh )	23,888	0	0	0
	LNG	( GWh )	153,517	0	0	0
	Oil	( GWh )	2,204	160	159	157
	Nuclear net production	( GWh )	0	0	0	0
	Renewable net production	( GWh )	12,181	11,478	12,402	12,978
	Hydroelectric	( GWh )	11,698	11,396	12,332	12,894
	Solar	( GWh )	33	32	31	31
	Wind	( GWh )	35	32	26	37
	Geothermal	( GWh )	4	0	0	0
	Biomass and cogeneration	( GWh )	[410]	19	13	16
	<b>Sales</b>					
	Electricity volumes	( GWh )	230,306	222,277	204,484	233,812
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	24	19

GRI		UM	2018年度	2019年度	2020年度	2021年度	注
	<b>Emissions</b>						
305-1	<b>Direct greenhouse gas emissions (Scope 1)</b>						
	Total direct emissions (Scope 1)	( ktCO <sub>2</sub> eq )	81,616	200	203	203	
305-2	<b>Indirect greenhouse gas emissions (Scope 2)</b>						
	Total of Scope2,market based	( ktCO <sub>2</sub> eq )	559	5,914	5,229	6,130	
	Total of Scope2,location based	( ktCO <sub>2</sub> eq )	592	5,920	5,231	6,126	
	Civil uses, hydroelectric and thermal electric plants						
	Related to energy purchased from the grid (Scope 2, market based)	( ktCO <sub>2</sub> eq )	559	520	493	489	
	Related to energy purchased from the grid (Scope 2, location based)	( ktCO <sub>2</sub> eq )	592	525	495	485	
	Related to technical losses from distribution and transmission network	( ktCO <sub>2</sub> eq )	-	5,395	4,736	5,641	
	<b>Scope 1 and 2</b>						
	Market based	( ktCO <sub>2</sub> eq )	82,175	6,114	5,432	6,333	
	Location based	( ktCO <sub>2</sub> eq )	82,208	6,120	5,433	6,328	
GRI		UM	2018年度	2019年度	2020年度	2021年度	注
	<b>Energy</b>						
302-1 302-4	<b>Energy consumption</b>						
	Total	( GJ )	1,472,295,071	13,223,953	13,084,756	13,122,744	
GRI		UM	2018年度	2019年度	2020年度	2021年度	注
	<b>Water</b>						
303-3	<b>Water withdrawal by uses</b>						
	Total	( kilo m <sup>3</sup> )	52,935,328	50,038,077	51,300,384	52,787,101	
	River water for hydroelectric plants	( kilo m <sup>3</sup> )	52,924,074	50,036,857	51,299,291	52,786,057	
	Industrial water for thermal electric plants	( kilo m <sup>3</sup> )	9,939	138	67	73	
	Municipal water	( kilo m <sup>3</sup> )	1,298	1,040	1,000	944	
	Groundwater	( kilo m <sup>3</sup> )	18	42	25	27	
GRI		UM	2018年度	2019年度	2020年度	2021年度	注
	<b>Waste</b>						
	<b>Industrial waste by disposal method</b>						
306-3	Total generated	( kt )	1,122	158	179	212	
306-4	Recycled volume	( kt )	1,119	158	179	212	
306-5	Landfill treatment volume	( kt )	3	<1	<1	<1	
	Recycling rate	( % )	100	100	100	100	
GRI		UM	2018年度	2019年度	2020年度	2021年度	注
	<b>Other</b>						
	<b>Electric vehicle</b>						
	Number of EV or PHEV	( no. )	448	430	592	690	*21
	<b>Green procurement</b>						
	Green procurement rate in office supplies (monetary value based)	( % )	99.0	98.9	97.6	95.3	
	<b>Paper bought for printers/ photocopiers</b>						
	Number of sheets (equivalent A4 sheets)	( mil A4eq )	355	348	323	247	
	Weight	( t )	1,419	1,390	1,289	985	

- 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 data 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 The average value of the loss rate results for the past three years from FY2018 due to changes in the contracts for consignment supply, etc. FY2020 data is under calculation.
  - \* 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.
  - \* 13 "Location based" emissions reflect the average emissions factor of grids.
  - \* 14 Until FY2018 the emissions equivalent to power transmission and distribution technical loss was contained in Scope 1 emissions. Since Scope 1 emissions decreased because of integrating the existing thermal power generation businesses of TEPCO Fuel & Power, Inc. into JERA Co., Inc., calculation was started based on the GHG protocol from FY2019.  
Transmission and distribution losses are calculated by multiplying the electricity TEPCO Power Grid transmitted in FY 2020 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: Calculated by multiplying the amount of purchased goods by the emission factor  
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 and 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 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.
- \* 17 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.
- \* 18 Not applicable to mercury emission facilities under the Air Pollution Control Act after FY2019
- \* 19 Reflects exclusions from high contaminated PCBs
- \* 20 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.
- \* 21 Added up without multiplying by voting rights ratio
- \* 22 Figures for FY2020 and earlier show retail electricity. And the total of retail electricity and wholesale electricity is shown in FY2021.