

Environmental Management Data 2022

Environmental Data

Updated Dec. 2022

		UNIT	2017	2018	2019	2020	2021
CO2 emissions factor from electricity sold to customers ^{※1}		kg-CO ₂ /kWh	0.472 (0.476)	0.452 (0.457)	0.424 (0.431)	0.377 (0.406)	0.382 (0.449)
CO2 emissions from electricity sold to customers ^{※1}		ten thousand t-CO ₂	5,736 (5,785)	5,339 (5,407)	4,969 (5,056)	4,174 (4,494)	4,158 (4,892)
Total greenhouse gas (GHG) emissions ^{※2,3} (Total GHG emissions including group companies) ^{※4}	scope1 ^{※5}	ten thousand t-CO ₂	5,640	5,313	6	11	10 (27)
	scope2 Total	ten thousand t-CO ₂	7	6	258	265	295 (296)
	scope2 ^{※6} - Offices, power plants, etc. ^{※7}	ten thousand t-CO ₂	7	6	19	17	15 (16)
	scope2 - Transmission and distribution losses ^{※8}	ten thousand t-CO ₂	—	—	239	247	280 (280)
	scope1, Scope2 Total	ten thousand t-CO ₂	5,647	5,319	264	276	305 (323)
	scope3 ^{※9} Total	ten thousand t-CO ₂	1,054	1,071	5,924	5,363	5,740 (5,913)
	Category 1 Purchased goods and services ^{※10}	ten thousand t-CO ₂	※19	※19	65	65	71 (110)
	Category 2 Capital goods ^{※11}	ten thousand t-CO ₂	※19	※19	51	70	48 (53)
	Category 3 Fuel- and energy- related activities (not included in scope1 or scope2) ^{※12}	ten thousand t-CO ₂	※19	※19	5,549	4,966	5,335 (5,445)
	Category 4 Upstream transportation and distribution ^{※13}	ten thousand t-CO ₂	※19	※19	—	—	— (1)
	Category 5 Waste generated in operations ^{※14}	ten thousand t-CO ₂	※19	※19	1	1	1 (1)
	Category 6 Business travel ^{※15}	ten thousand t-CO ₂	※19	※19	1	0.1	0.2 (0.3)
	Category 7 Employee commuting ^{※16}	ten thousand t-CO ₂	※19	※19	1	2	1 (2)
	Category 11 Use of sold products ^{※17}	ten thousand t-CO ₂	※19	※19	257	260	284 (285)
	Category 12 End-of-life treatment of sold products ^{※18}	ten thousand t-CO ₂	※19	※19	—	—	— (0.0)
	Category 13 Downstream leased assets ^{※18}	ten thousand t-CO ₂	※19	※19	—	—	— (16)
Total energy consumption		GWh	244,878	225,695	467	1,279	1,191
Renewable energy generation capacity ^{※3,21}	Hydroelectric(General)	ten thousand kW	214.2	214.3	214.3	214.8	215.5
	Hydroelectric(Pumped storage)	ten thousand kW	331.7	331.7	331.7	331.7	331.7
	Solar	ten thousand kW	23.9	28.3	36.8	45.1	50.9
	Wind	ten thousand kW	17.2	17.2	16.9	17.9	17.9
	Biomass	ten thousand kW	0.7	0.7	5.2	11.9	11.9
	Geothermal	ten thousand kW	—	—	—	0	0
	Total(except for pumped storage)	ten thousand kW	256.0	260.5	273.2	289.7	296.2
SF ₆ recovery rate ^{※22}	In equipment inspections	%	99.4	99.7	99.9	97.9	96.8
	In equipment removal	%	99.5	99.6	99.5	99.5	99.5
HCFC ^{※22} emissions		t	0.7	1.1	1.7	0.7	0.1
HFC ^{※22} emissions		t	1.2	0.9	0.4	0.9	0.9
Fuel consumption of vehicles		㎏	3,322	3,315	2,995	2,582	2,562
Office electricity consumption		ten thousand kW h	10,656	10,127	9,472	9,884	10,118
Total water withdrawal (including seawater and freshwater) ^{※23}		Million m ³	※20	68,843	52,365	50,585	51,258
Water use for biomass and nuclear power generation		ten thousand m ³	1,135	1,047	11	21	16
Water use for offices		ten thousand m ³	62.2	53.9	41.3	37.7	38.7
Water use for offices(per employee)		m ³ /employee	37.7	33.5	28.7	24.8	25.7
Total water discharge (including seawater and freshwater) ^{※23}		Million m ³	※20	68,835	52,365	50,585	51,258
Water discharge from biomass and nuclear power stations		ten thousand m ³	383	334	2.0	12.7	6.3
Amount of waste generated ^{※24}		ten thousand t	132.5	156.8	3.6	4.3	4.6
Hazardous waste ^{※25}		ten thousand t	—	—	0.3	0.2	0.3
Plastic waste		ten thousand t	—	—	0.2	0.2	0.1
Industrial waste, etc., recycling rate ^{※24}		%	99.7	99.7	97.2	97.2	97.8
Paper waste generated		t	1,796	1,683	1,390	1,141.3	1,149
Paper waste recycling rate		%	90.4	91.5	90.7	78.4	70.7
Green procurement rate		%	98.5	98.1	99.4	99.1	99.2
Violation of important environmental laws and regulations		Amount - accidents	0	0	0	0	0
Transmission and distribution losses	Total transmission and distribution	MWh	4,973,243	5,687,735	5,061,357	5,555,573	6,458,576
SOx emissions		t	3,854	3,686	0	1	1
NOx emissions		t	7,446	7,312	0	79	74

■ Due to integrating the thermal power generation businesses of Chubu Electric Power 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 for the individual Chubu Electric Power companies are listed up to FY2019 and the total combined values for three companies consisting of Chubu Electric Power, Chubu Electric Power Grid, and Chubu Electric Power Mirai-zo companies are listed from FY2020. (In 2020, Chubu Electric Power split off its power transmission and distribution businesses into Chubu Electric Power Grid and its sales businesses into Chubu Electric Power Mirai-zo.)

■ Figures which are marked with () have been externally assured by KPMG AZSA Sustainability Co., Ltd.

※1 Reflects adjustments involved in CO2 emission credits, non-fossil fuel energy certificates and the FIT scheme for renewable energy obtained from the methods stipulated in the Act on Promotion of Global Warming Countermeasures. Figures in parentheses represent Basic emissions factor and Basic emissions.

※2 Modified the figures for FY2019 onward as we changed our calculation method

※3 Figures are rounded and may not match the total.

※4 Chuden Auto Lease Co., Ltd., Chubu Plant Service Co., Ltd., C-TECH CORPORATION, Techno Chubu Co., Ltd., Chuden CTI Co., Ltd., Cenergy Co. and Diamond Power Corporation

※5 Scope1 :

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 Act on Promotion of Global Warming Countermeasures.

※6 Scope2 : Emissions due to the electricity consumption.

※7 Offices, power plants, etc. : Calculated by using the adjusted emissions factor for each electricity retail company

※8 Transmission and distribution losses :

Calculated by subtracting the amount of user end electricity from the amount of transmission end electricity and multiplying by the emission factor of the general electricity transmission and distribution utility. Transmission and distribution losses up to FY2020 do not include the amount of electricity in substations. Due to a change in the calculation method, the amount of electricity in substations is included in the transmission and distribution losses from FY2021 onward.

Prior to FY 2018, transmission and distribution losses are included in Scope 1. From FY 2019 onward, the calculation is based on "GHG Protocol A Corporate Accounting and Reporting Standard" and "GHG Protocol Scope 2 Guidance".

※9 Scope3 :

Indirect greenhouse gas emissions from business. We follow major guidelines have been published:

"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 Act on Promotion of Global Warming Countermeasures"

"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)"

"IDEA Ver.2.3"

"Evaluation of Life Cycle CO2 Emissions of Domestic and Foreign Biomass Fuel for Coal-fired Power Plant" (CRIEPI Report Y10010 (May 2011))"

"Comprehensive Assessment of Life Cycle CO2 Emissions from Power Generation Technologies in Japan" (CRIEPI Report Y06 (July 2016))"

※10 Category 1 : Product/service price × emission factor

※11 Category 2 : Amount of a price increase of non-current assets × emission factor

※12 Category 3 :

The sum of the following three values;

-Emissions from generation of electricity we procured and sold to end users :
the quantities of electricity procured from other companies × emission factor

-Emissions from upstream activities (extraction, production and transportation) of fuels for electricity we procured and sold to end users :
the quantities of electricity procured from other companies × emission factor

-Emissions from upstream activities (extraction, production and transportation) of fuels we consumed :
the quantities of fuels consumed × emission factor

※13 Category 4 : We are not a Specified Shippers under the Act on the Rational Use of Energy and figure is not calculated. (Calculated in some group companies) .

※14 Category 5 : Industrial waste, etc. generated × emission factor

※15 Category 6 : Business travel expenses × emission factor

※16 Category 7 : Travel expenses for employee commuting × emission factor

※17 Category11 : LNG - Gas sales volume × emission factor

※18 Category12,13 : No relevant activities (Calculated in some group companies) .

※19 Breakdown for FY2018 and earlier is omitted due to a review of our calculation method from FY2019.

- ※20 Not calculated for the fiscal year
- ※21 Power generation capacity owned by Chubu Electric Power for business (the capacity of joint project is counted by equity share) .
- ※22 The value for calendar year (from January 1 to December 31)
- ※23 Includes seawater for cooling at power plants, fresh water (river water) for hydroelectric power generation, etc.
- ※24 Industrial waste, etc. = Industrial waste + Valuables + Internally recycled goods
- ※25 The waste applicable to specially controlled industrial waste as prescribed by the Waste Management and Public Cleansing Act of Japan.

Environmental Accounting

1, Environmental Conservation Costs

UNIT : millions of yen

Category	Item	Investment			Expenses		
		FY2020	FY2021	Change	FY2020	FY2021	Change
Costs within the business areas	Preventing global warming, environmental conservation measures such as resource recycling etc.	20,722	18,673	▲ 2,049	3,983	4,217	234
Upstream/downstream costs	Additional cost due to purchase of low environmental impact product	396	586	190	60	78	18
Management programs costs	Measuring and monitoring environmental impact, development of organization such as environmental education, training etc.	0	0	0	513	516	3
Research and development costs	Research related to environmental conservation measures, contribution to environment-related research institutions	120	127	7	3,547	3,793	246
Social programs costs	International cooperation, landscape protection, greening, communication activities	19,372	19,082	▲ 290	808	769	▲ 39
Countermeasures for environmental damage costs	Countermeasures for environmental damage	0	0	0	21	20	▲ 1
Total		40,610	38,468	▲ 2,142	8,932	9,393	461


※Expenses do not include depreciation.

2, Economic Benefit Associated with Environmental Conservation Activities

Category	Items	Amount		
		FY2020	FY2021	Change
Cost saving effect	Fuel cost reductions due to change in gross thermal efficiency of thermal power plants, etc.	0	0	0
Revenues (recycling etc.)	Reuse of switch, transformers, high voltage insulator etc., selling valuables such as waste oil, metal scrap, etc.	2,074	2,986	912

Independent Assurance Report

To the President and Director of Chubu Electric Power Co., Inc.

We were engaged by Chubu Electric Power Co., Inc. (the “Company”) to undertake a limited assurance engagement of the environmental performance indicators marked with “” (the “Indicators”) for the period from April 1, 2021 to March 31, 2022 included in its ‘Environmental Management Data 2022’ (the “Data”) for the fiscal year ended March 31, 2022.

The Company’s Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the “Company’s reporting criteria”), as described in the Data.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the ‘International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information’ and the ‘ISAE 3410, Assurance Engagements on Greenhouse Gas Statements’ issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Data, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company’s responsible personnel to obtain an understanding of its policy for preparing the Data and reviewing the Company’s reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company’s reporting criteria, and recalculating the Indicators.
- Visiting one of the Company’s power plants selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Data are not prepared, in all material respects, in accordance with the Company’s reporting criteria as described in the Data.

Our Independence and Quality Control

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Shinnosuke Kayumi, Director
KPMG AZSA Sustainability Co., Ltd.
Osaka, Japan
December 2, 2022

Notes to the Reader of Independent Assurance Report :

This is a copy of the Independent Assurance Report and the original copy is kept by the Company.