Reported information on large combustion plants under the Energy Community Treaty

Information on the database structure and use

Version 2.2







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Acknowledgments

The compilation of the database and this document was done by the European Environment Agency (EEA).

The dataflow is managed by Juan Calero (EEA), please refer to him for further enquiries (juan.calero@eea.europa.eu).

Version control

Version number	Version number Description						
1.0	December 2020						
2.0	Second version with minor editing following the 2021 cycle	July 2021					
2.1	Minor editing, for publication with the data received in 2022	July 2022					
2.2	Minor editing, for publication with the data received in 2023	December 2023					

About the database

This database contains plant-by-plant data on Large Combustion Plants (LCP) for the years 2018 to 2022 reported under the Energy Community Treaty, as implemented by Council Decision 2006/500/EC of 29 May 2006. The data include rated thermal input, annual energy input and emissions of SO_2 , NO_x and dust. In addition, information on derogations under the provisions of the agreed legislation under the Treaty is provided.

As of 2023, member countries reporting to the database are: Bosnia and Herzegovina, Georgia, Moldova (from 2019), Montenegro, North Macedonia, Serbia, Ukraine and Kosovo¹.

¹ This designation is without prejudice to positions on status, and is in line with UNSCR 1244(1999) and the ICJ Opinion on the Kosovo declaration of independence.

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1 Content of the EEA dataservice entry

The EEA dataservice is the section of the EEA website where datasets are made available to the public. The permanent link to the dataset on large combustion plants from member countries of the Energy Community is as follows:

https://www.eea.europa.eu/en/datahub/datahubitem-view/b37addc8-b60e-4304-ae49-eba5828a9163

The link presents the location of the EEA's data hub where this data is. The dataset present at the top of the page is always the latest available. Users can also navigate to older versions using the relevant option in the fiche – "archived or restricted datasets" (see Figure 1). Figure 2 provides an overview of the various files that are offered in the fiche of the latest version of the dataset.

Figure 1 Option in the navigation panel to browse dataset versions

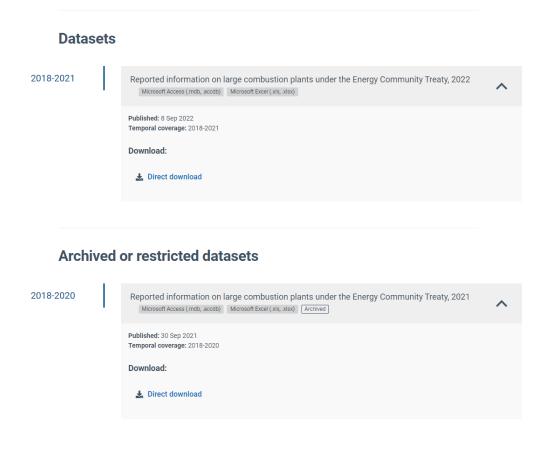




Figure 2 Overview of the content of the fiche of this dataset entry

1 folder and 3 files

2 Complete MS Access[™] database

The dataset is provided in its complete version in Microsoft Access[™] data format. This section outlines the strtucture of the data, the interpretation of the data fields and the metadata of the file.

The data model

The database consists of six tables. Its structure is shown in the figure below. The table 1_BasicData contains one entry for each Member State and each year. The table 2_PlantDetails contains entries for each individual plant and year. Tables 3 to 6 contain corresponding entries for each plant and year included in table 2_PlantDetails.

3_EnergyInput t ID FK_Plant_ID Biomass Coal Lignite Peat LiquidFuels NaturalGas 2_PlantDetails OtherGases 1_BasicData t ID OtherSolidFuels FK_BasicData_ID 1 ID Plant ID ReportingCountry PlantName ReferenceYear 4 TotalEmissionsToAir PlantAddress NumberofPlants T ID PlantBuildingNumber Organisation 00 FK_Plant_id PlantCity Address1 **SO**2 PlantPostalCode City NOx Longitude State Dust Latitude NameOfDepartmentContactPerson PlantStatus Phone MWth Email DateOfStartOfOperation OperatingHour OperatingSector 6_UsefulHeat DerogationApplied t ID Comments FK_Plant_ID UsefulHeatProportio 5 Desulphurisation t ID FK Plant ID DesulphurisationRat SulphurContent TechnicalJustificatio

Figure 3: Structure of the LCP database v1.1

The field "ID" in table 1_BasicData is the foreign key for table 2_PlantDetails. The field "ID" in table 2_PlantDetails is the foreign key for tables 3 to 6. All fields in the various tables are described below.

Tables and fields

The LCP database contains the following tables and fields:

Fields in Table 1_BasicData

Field	Data Type	Description
ID	Autonumber	Key for this Table
Member State	Short Text	Two-letter ISO2 country code
Reference Year	Number	Year which the inventory
		refers to
NumberOfPlants	Number	Number of plants reported by
		reporting country in a given
		year
Organisation	Short text	Name of the organisation
		reporting the data
Address1	Short text	Address of the organisation
		reporting the data
City	Short text	City of the organisation
		reporting the data
State	Short text	State or region address of the
		organisation reporting the
		data
NameOfDepartmentContactPerson	Short text	Department name or contact
		person at the organisation
		reporting the data
Phone	Short text	Phone number of the
		organisation reporting the
		data
Email	Short text	Email address of the
		organisation reporting the
		data

Fields in Table 2_PlantDetails

Field	Data Type	Description
ID	Autonumber	Key for table
FK_BasicData_ID	Number	Foreign Key linking each entry in Table 2_PlantDetails to the corresponding year and Reporting County in Table 1_BasicData
PlantID	Short Text	Identifier of the plant which stays the same over time.
PlantName	Short Text	Name of the Plant
PlantAddress	Short Text	Address of the Plant
PlantBuildingNumber	Short Text	Building number of the Plant
PlantCity	Short Text	City of the Plant
PlantPostalCode	Short Text	Postal code of the Plant
Longitude	Short Text	Geographical longitude of the Plant (in decimal degrees)

Latitude	Short Text	Geographical latitude of the Plant (in decimal degrees)
PlantStatus	Short Text	StatusOfPlant
MWth	Number	Rated thermal input of the Plant (megawatts thermal – MWth)
DateOfStartOfOperation	Short Text	Date when the Plant started operating
OperatingHours	Number	Number of hours of the Plant
OperatingSector	Short Text	Name of the sector the Plant operates within
DerogationApplied	Short Text	If the plant is subject to a derogation
Comments	Short Text	Comments by the reporting authority

Fields in Table 3_EnergyInput

Field	Data Type	DescriptionKey for this Table				
ID	Autonumber					
FK_Plant_ID	Number	Foreign key, linking each entry in Table 3_EnergyInput to the corresponding plant in Table 2_PlantDetails				
Biomass	Number	Total biomass energy input of the plant in the reporting year (TJ)				
Coal	Number	Total coal energy input of the plant in the reporting year (TJ)				
Lignite	Number	Total lignite energy input of the plant in the reporting year (TJ)				
Peat	Number	Total peat energy input of the plant in the reporting year (TJ)				
LiquidFuels	Number	Total liquid fuels energy input of the plant in the reporting year (TJ)				
NaturalGas	Number	Total natural gas input of the plant in the reporting year (TJ)				
OtherGases	Number	Total other gases energy input of the plant in the reporting year (TJ)				
OtherSolidFuels	Number	Total other solid fuels input of the plant in the reporting year (TJ)				

Field	Data Type	Description
ID	Autonumber	Key for this table
FK_Plant_ID	Number	Foreign key, linking each entry
		in Table
		4_TotalEmissionsToAir to the
		corresponding plant in table
		2_PlantDetails
SO ₂	Number	Total of SO ₂ emissions of the
		plant in the reporting year (t)
NOx	Number	Total of NO _x emissions of the
		plant in the reporting year (t)
Dust	Number	Total of dust emissions of the
		plant in the reporting year (t)

Fields in Table 5_Desulphurisation

Field	Data Type	Description
ID	Autonumber	Key for this table
FK_Plant_ID	Number	Foreign key, linking each entry
		in Table 5 to the
		corresponding plant in table
		2_PlantDetails
DesulpurisationRate	Number	Desulphurisation rate
		(between 0 and 1).
SulphurContent	Number	SulphurContent of the fuel
		(between 0 and 1).
TechnicalJustification	Text	Technical justification of the
		non-feasibility of applying
		with the limit values.

Fields in Table 6_UsefulHeat

Field	Data Type	Description
ID	Autonumber	Key for this table
FK_Plant_ID	Number	Foreign key, linking each entry
		in Table 6 to the
		corresponding plant in table
		2_PlantDetails
UsefulHeatProportion	Number	Proportion of useful heat
		(between 0 an 1).

Emissions to air queries

The database also contains queries which combines tables 1, 2, and 4, in order to allow for a display of data from several tables. The query can be found under "Queries" – "AllCountriesEmissionsAIR". There is a query per year (e.g. AllCoubtriesEmissionsAIR2021). These queries combinethe following fields: ReportingCountry – Reference year – PlantName – PlantID – Emissions (SO₂, NO_x, dust).

Energy input queries

Likewise, the database contains queries (one per year) combining tables 1, 2 and 3, with the following fields: ReportingCountry – Reference year – PlantName – PlantID – Energy inputs (biomass, coal, lignite, peat, other solid fuels, liquid fuels, natural gas, other gases.

Metadata

Reporting obligation: Summary of reporting on large combustion plants (LCP), Council Decision 2006/500/EC of 29 May 2006 on the conclusion by the European Community of the Energy Community Treaty <u>https://rod.eionet.europa.eu/obligations/794</u>

Temporal coverage: 2018-2022

Geographic coverage as per the treaty: Albania (no plants reported), Bosnia and Herzegovina, Kosovo¹, North Macedonia, Georgia, Moldova (plants reported since 2019), Montenegro, Serbia and Ukraine.

Units:

Total energy input, related to net calorific value: Terajoules per year SO₂, NO_x and dust emissions: Metric tonnes per year Rated thermal input: MWth Desulphurisation rate: % Sulphur content: % Useful heat: %

3 User-friendly tables with yearly data

The user-friendly tables are an extract of the database containing the most relevant fields and provided in MS Excel[™] format. It extracts the data for each year in an independent sheet. This presentation of the data is meant to help those users who are not familiar with Microsoft Access[™]. As depicted in Figure 4, the tab control at the bottom of the Excel[™] window allows to browse the different years. The colums are filtered so that the user can e.g. define a specific set of countries or restrict thefuel type presented. The first tab of the extract is a README tab with the metadata of the dataset.

Figure 4 Overview of the Excel sheet

ReportingCountry 🗐	ReferenceYear 👻	PlantName 👻	Plant ID 🚽	Biomass (TJ) 🔻	Coal (TJ) 🔽	Lignite (TJ) 👻 Peat (TJ)	- Oth	her 🖅 🛽	Liquid Fuels (TJ) 👻	Natural Gas (TJ) 👻	Other Gases (1 👻 SO ₂ (t) 💌	NO _x (t) 🔻	Dust (t)
A A		TPP Gacko-1	G-1	0.0	0.0		0.0	0.0	0.0	0.0	0.0 18545.0		3648
A.		TPP Kakanj-5	K-5	0.0	3124.8		0.0	0.0	6.9	0.0	0.0 7609.0		6
A		TPP Kakani-6	K-6	12.8	5987.4		0.0	0.0	6.6	0.0	0.0 14745.0		12
A		TPP Kakanj-7	K-7	0.0	14991.1		0.0	0.0	6.6	0.0			3:
A		ICHPP Natron Hayat LUKO-4	LUKO-4	0.0	0.0		0.0	0.0	1972.7	0.0		78.4	35
A		TPP Stanari	Stanari 1	0.0	0.0		0.0	0.0	15/2./	0.0			11
A		TPP Tuzla-3	T-3	0.0	870.6		0.0	0.0	17.1	0.0	0.0 2430.0		46
			T-4				0.0	0.0	44.9	0.0			260
A		TPP Tuzla-4	T-5	6.0	4190.2		0.0	0.0	44.9	0.0	0.0 11207.0		
A		TPP Tuzla-5		0.0	4357.3		_				0.0 11979.0		202
A	2022		T-6	17.5	8577.9		0.0	0.0	34.0	0.0			5
A		TE Ugljevik	U-1	0.0	17448.0		0.0	0.0	0.0	0.0	0.0 85526.0		86
A		ICHPP Natron Hayat UKO-3	UKO-3	0.0	0.0		0.0	0.0	0.0	0.0	0.0 0.0		(
A		ICHPP Natron Hayat UKO-4	UKO-4	0.0	849.1		0.0	0.0	0.0	0.0	0.0 1623.0		70
E	2022	LLC Georgian International Energy Corporation	GE0001	0.0	0.0		0.0	0.0	0.0	2590.8	0.0 0.0		
E		Mtkvary Energy LLC	GE0002	0.0	0.0		0.0	0.0	0.0	7624.7	0.0 0.0		
E	2022	GPower LLC	GE0003	0.0	0.0	0.0	0.0	0.0	0.0	508.1	0.0 0.0	29.0	(
E	2022	LLC Gardabani TPP	GE0004	0.0	0.0	0.0	0.0	0.0	0.0	8042.9	0.0 0.0	209.1	(
E	2022	LLC Gardabani TPP 2	GE0005	0.0	0.0	0.0	0.0	0.0	0.0	8061.7	0.0 0.0	314.8	C
1D	2022	TERMOELECTRICA Centrala Electrică cu Termofic	LCP MD 000001	0.0	0.0	0.0	0.0	0.0	2763.6	5174.7	0.0 1369.4	640.8	125
ID	2022	TERMOELECTRICA Centrala Electrică cu Termofic	LCP MD 000002	0.0	0.0	0.0	0.0	0.0	0.0	841.8	0.0 0.2	40.4	(
AE .		Thermal power plant "Pljevlja"	ME0001	0.0	0.0		0.0	0.0	232.8	0.0	0.0 46504.0		560
1K		ESM AD Skopje - REK Bitola (B1 + B2)	MK0001	0.0	0.0		0.0	0.0	1140.0	0.0	0.0 111408.0		3899
ΛK		ESM AD Skopje - REK Bitola (B3)	MK0002	0.0	0.0		0.0	0.0	0.0	0.0	0.0 0.0		(
1K		ESM AD Skopje - REK Oslomej	MK0003	0.0	0.0		0.0	0.0	144.7	0.0	0.0 2415.0		303
IK		TEC Negotino	MK0004	0.0	0.0		0.0	0.0	4654.0	0.0	0.0 2413.0		7
IK I		BEG - Toplana Istok	MK0004 MK0005	0.0	0.0		0.0	0.0	4034.0	384.6	0.0 1508.0		/:
ĸ				0.0	0.0		0.0	0.0	0.0	185.0	0.0 0.0		
		BEG - Toplana Zapad	MK0006										(
K		Rafinerija OKTA - Procesna Instalacija	MK0007	0.0	0.0		0.0	0.0	0.0	0.0	0.0 0.0		(
к		Rafinerija OKTA - Energetika	MK0008	0.0	0.0		0.0	0.0	0.0	0.0	0.0 0.0		0
S		EPS, Termoelektrana Nikola Tesla A, A1-A3	RS0001	0.0	0.0		0.0	0.0	1032.3	0.0	0.0 38463.1		1738
S		EPS, Termoelektrana Nikola Tesla A, A4-A6	RS0002	0.0	0.0		0.0	0.0	965.5	0.0	0.0 68650.7	9172.6	663
S		EPS, Termoelektrana Nikola Tesla B, B1-B2	RS0003	0.0	0.0		0.0	0.0	1951.1	0.0			1020
S	2022	EPS, Termoelektrana Nikola Tesla B, Pomocna k	RS0004	0.0	0.0	0.0	0.0	0.0	174.9	0.0	0.0 7.1	2.9	0
S	2022	EPS, Termoelektrana Kostolac A, A1	RS0005	0.0	0.0	8261.4	0.0	0.0	108.6	0.0	0.0 19281.8	1449.4	456
s	2022	EPS, Termoelektrana Kostolac A, A2	RS0006	0.0	0.0	13536.8	0.0	0.0	77.4	0.0	0.0 22409.7	2156.6	307
S	2022	EPS, Termoelektrana Kostolac B, B1-B2	RS0007	0.0	0.0	48118.9	0.0	0.0	186.2	0.0	0.0 36560.3	4014.2	497
s	2022	EPS, Termoelektrana toplana Novi Sad	RS0008	0.0	0.0	0.0	0.0	0.0	0.0	8381.7	0.0 3.4	1370.7	8
IS	2022	EPS, Toplana Vreoci, Kolubara Prerada	RS0009	0.0	0.0	1498.8	0.0	0.0	17.9	0.0	0.0 2828.6	143.4	215
IS	2022	NIS, Energana Novi Sad	RS0010	0.0	0.0	0.0	0.0	0.0	0.0	115.1	0.0 0.3	12.0	C
s	2022	NIS, Atmosferska destilacija II	RS0011	0.0	0.0	0.0	0.0	0.0	56.5	241.9	1126.6 15.4	26.5	C
s		NIS, Energana Pancevo	RS0012	0.0	0.0		0.0	0.0	497.0	863.9	0.0 54.7	194.5	8
s		EPS, Termoelektrana - TE Morava	RS0013	0.0	2775.4		0.0	0.0	133.9	0.0	0.0 33183.4		124
s		EPS, Termoelektrana - TE Kolubara A3 2	RS0014	0.0	0.0		0.0	0.0	85.9	0.0	0.0 2291.7	74.2	564
s		EPS, Termoelektrana - TE Kolubara AS 5	RS0015	0.0	0.0		0.0	0.0	167.3	0.0	0.0 5659.8		164
s		EPS, Termoelektrana - TE Kolubara AS 1	RS0015	0.0	0.0		0.0	0.0	88.5	0.0	0.0 3261.8	172.8	588
			RSUUID	0.0	0.0			0.0	00.0	0.0	0.0 5261.8		
A		Zuivska TPP, power units 1-4	1				0.0						0
A		Prydniprovska TPP, power unit 8	10.1	0.0	2054.6		0.0	0.0	0.0	24.7	0.0 1825.0		509
A		Prydniprovska TPP, power unit 9	10.2	0.0	6266.5		0.0	0.0	0.0	53.0	0.0 6281.7	1034.3	80
A		Prydniprovska TPP, power unit 10	10.3	0.0	7596.7		0.0	0.0	0.0	41.3	0.0 7779.2	1384.2	9:
A		Makiivka Metallurgical plant CHP	100	0.0			0.0	0.0			0.0		(
4		Avdiivka Coke plant CHP	101	0.0			0.0	0.0			0.0		
k i i i i i i i i i i i i i i i i i i i	2022	Mariupol CHP-1	102	0.0		0.0	0.0	0.0			0.0	0.0	
A	2022	Mariupol CHP-2	103	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	
N	2022	Mariupol CHP-3	104	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	
	2022	Sumy Machinery plant CHP	105	0.0	0.0	0.0	0.0	0.0	0.0	719.8	0.0 0.0	58.7	
4		Pervomaisk EnergoChemProm CHP	106	0.0	0.0		0.0	0.0	0.0	0.0	0.0 0.0		
A.		Simferopol CHP	107	0.0			0.0	0.0			0.0		
4		Sevastopol CHP	107	0.0			0.0	0.0			0.0		
A		Saky CHP	108	0.0			0.0	0.0			0.0		
4		Prydniprovska TPP, power units 11, 12	109	0.0	0.0		0.0	0.0	0.0	0.0	0.0 0.0		
		province ovska TPP, power units 11, 12	11	0.0	0.0	0.0	0.01	0.0	0.0	0.0	0.0 0.0	0.0	