Reported information on large combustion plants

Information on the database structure and use

Version 5.2

European Environment Agency

Cover design: EEA
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Layout: EEA

Acknowledgments

The compilation of the database and this document was done in cooperation with the European Topic Centre on Air Pollution, Transport, Noise and Industry. The main contributor to the data compilation is Ilona Dvořáková (Czech Hydrometereological Institute).

The dataflow is managed by Daniel Montalvo (EEA), please refer to him for further enquiries (daniel.montalvo@eea.europa.eu).

About the database

This database contains plant-by-plant data on Large Combustion Plants (LCP) for the years 2004 to 2015 (reported under the LCP Directive 2001/80/EC) and 2016-2017 (reported under the Industrial Emissions Directive 2010/75/EU). 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 Industrial Emissions Directive provided.

The data for 2004 to 2012 were reported by EU Member States to the European Commission. Data from 2013 onwards were reported to the EEA. The EEA implemented a two-tiered quality assurance process to identify inconsistences and including a comparison with data reported under the European Pollutant Release and Transfer Register (E-PRTR).

Data reported for the years 2007 to 2012 were checked for consistency/completeness by an external consultant on behalf of the European Commission. For the data of 2004 to 2006, no such checks were carried out and these data may be inconsistent or incomplete in some cases.

What is new in version 5.2

Version 5 is based on the reporting requirements of Article 72.3 of the Industrial Emissions Directive (IED). This means that, as from 2016 reporting year, additional fuels have been introduced. Information on derogations under the IED is also included, whereas information on derogations under the LCP Directive are no longer included in this database. Another important aspect to take into account is the definition of plant, which slightly varies as from 2016 reporting year. This means, in particular for certain countries, that additional plants are reportable. Please take this into account when analysing the data.

Specific additions in Version 5.2
Version 5.2 is an update of Version 5.1, which was published on 29 May 2019. In this version, 2017 data for Austria were added as they become available only after the publication of version 5.1.

The whole dataset for Kosovo (*) has now been removed because a separate database for a number of non-EU countries will be made available by EEA as a consequence of an agreement with the Energy Communitty Treaty.

Supplementations and corrections of various items (including emissions and rated thermal inputs) were made, based on quality checks and feedbacks from reporting countries. Resubmissions for 2017 was provided

by 11 member states (DE, DK, ES, FI, FR, HR, HU, IT, PL, PT, UK), resubmission for 2016 by one member state (PT). The correction affect, in particular, the data of Germany, which had significant errors in the continuity of identifiers over time in version 5.1.

It was found that there is potential one-order-of-magnitude error in dust emission for the source EE0100 in 2011. This matter has been communicated to the relevant country to find a possible correction.

Please note that the number of plants for PL and NL changed significantly in 2016 as a result of aggregation rules according to IED which define “combustion plants” within the scope of EU-law in a broader manner than it was the case under the now-repealed LCP Directive.

(*) This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

Table of contents

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 is this one:
https://www.eea.europa.eu/ds_resolveuid/DAT-149-en

The link always presents the latest version available but the user can also navigate to older versions using the relevant option in the fiche (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

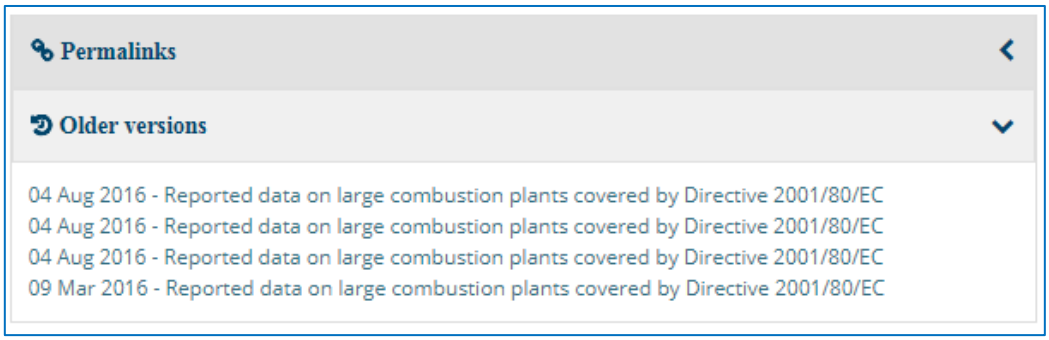
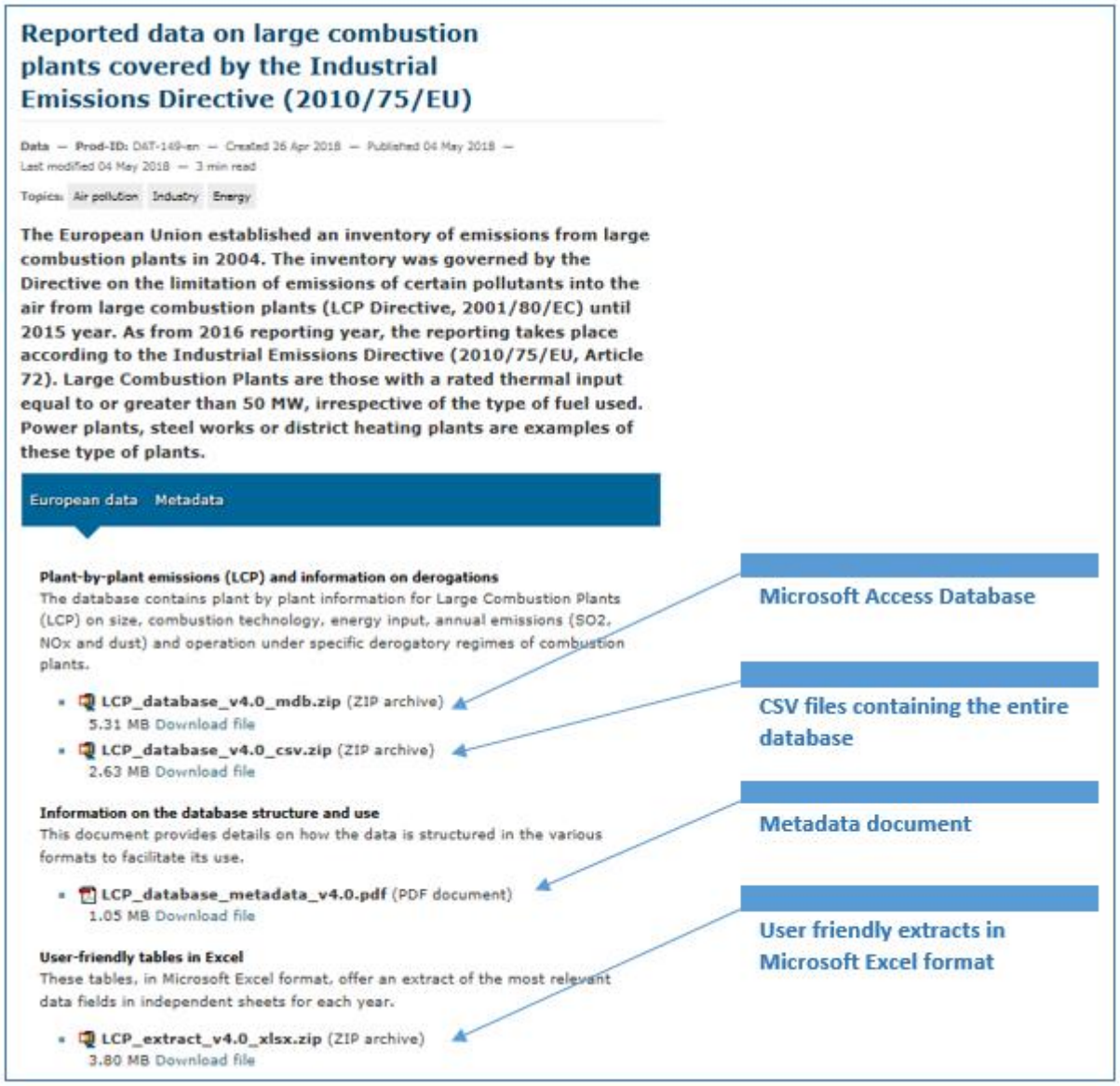


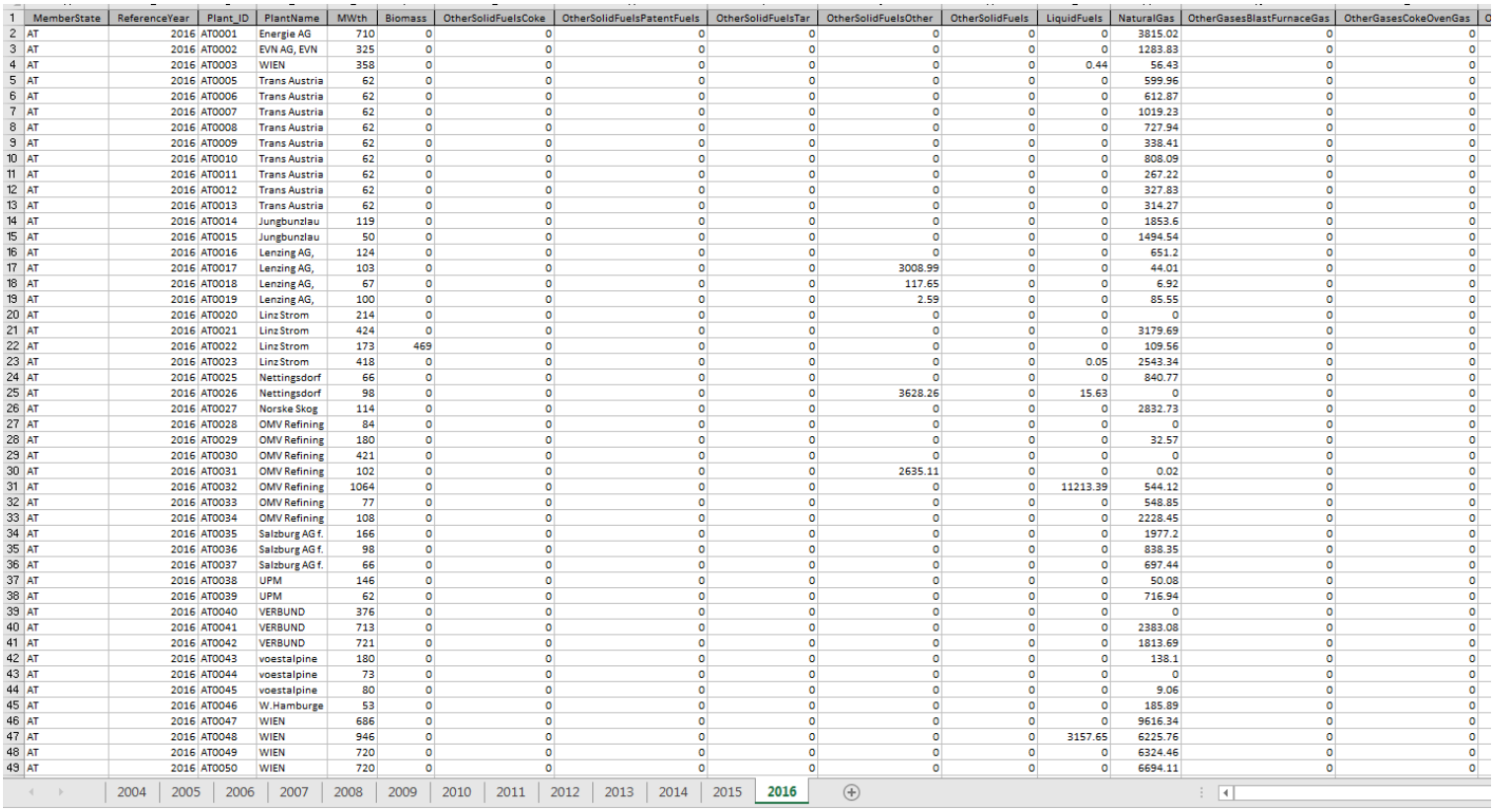
Figure 1 Overview of the content of the fiche of this dataset entry



2 User friendly tables with yearly data

The user-friendly tables are an extract of the database containing the most relevant fields and provided in 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 depictied in Figure 2, the tab control at the bottom of the Excel window allows to browse the different years. The coulums are filtered so that the user can e.g. define a specific set of countries or restrict the sizes of the plants presented.
The sheet for 2016 and 2017 contains more categories of fuel as the reporting requirement distinguished further on this aspect.

Figure 2 Overview of the Excel sheet



	MemberState	ReferenceYear	Plant_ID	PlantName	MWth	Biomass	OtherSolidFuelsCoke	OtherSolidFuelsPatentFuels	OtherSolidFuelsTar	OtherSolidFuelsOther	OtherSolidFuels	LiquidFuels	NaturalGas	OtherGasesBlastFurnaceGas	OtherGasesCokeOvenGas
2	AT	2016	AT0001	Energie AG	710	0	0	0	0	0	0	0	3815.02	0	0
3	AT	2016	AT0002	EVN AG, EVN	325	0	0	0	0	0	0	0	1283.83	0	0
4	AT	2016	AT0003	WIEN	358	0	0	0	0	0	0	0.44	56.43	0	0
5	AT	2016	AT0005	Trans Austria	62	0	0	0	0	0	0	0	599.96	0	0
6	AT	2016	AT0006	Trans Austria	62	0	0	0	0	0	0	0	612.87	0	0
7	AT	2016	AT0007	Trans Austria	62	0	0	0	0	0	0	0	1019.23	0	0
8	AT	2016	AT0008	Trans Austria	62	0	0	0	0	0	0	0	727.94	0	0
9	AT	2016	AT0009	Trans Austria	62	0	0	0	0	0	0	0	338.41	0	0
10	AT	2016	AT0010	Trans Austria	62	0	0	0	0	0	0	0	808.09	0	0
11	AT	2016	AT0011	Trans Austria	62	0	0	0	0	0	0	0	267.22	0	0
12	AT	2016	AT0012	Trans Austria	62	0	0	0	0	0	0	0	327.83	0	0
13	AT	2016	AT0013	Trans Austria	62	0	0	0	0	0	0	0	314.27	0	0
14	AT	2016	AT0014	Jungbunzlau	119	0	0	0	0	0	0	0	1853.6	0	0
15	AT	2016	AT0015	Jungbunzlau	50	0	0	0	0	0	0	0	1494.54	0	0
16	AT	2016	AT0016	Lenzing AG,	124	0	0	0	0	0	0	0	651.2	0	0
17	AT	2016	AT0017	Lenzing AG,	103	0	0	0	0	3008.99	0	0	44.01	0	0
18	AT	2016	AT0018	Lenzing AG,	67	0	0	0	0	117.65	0	0	6.92	0	0
19	AT	2016	AT0019	Lenzing AG,	100	0	0	0	0	2.59	0	0	85.55	0	0
20	AT	2016	AT0020	Linz Strom	214	0	0	0	0	0	0	0	0	0	0
21	AT	2016	AT0021	Linz Strom	424	0	0	0	0	0	0	0	3179.69	0	0
22	AT	2016	AT0022	Linz Strom	173	469	0	0	0	0	0	0	109.56	0	0
23	AT	2016	AT0023	Linz Strom	418	0	0	0	0	0	0	0.05	2543.34	0	0
24	AT	2016	AT0025	Nettingsdorf	66	0	0	0	0	0	0	0	840.77	0	0
25	AT	2016	AT0026	Nettingsdorf	98	0	0	0	0	3628.26	0	15.63	0	0	0
26	AT	2016	AT0027	Norske Skog	114	0	0	0	0	0	0	0	2832.73	0	0
27	AT	2016	AT0028	OMV Refining	84	0	0	0	0	0	0	0	0	0	0
28	AT	2016	AT0029	OMV Refining	180	0	0	0	0	0	0	0	32.57	0	0
29	AT	2016	AT0030	OMV Refining	421	0	0	0	0	0	0	0	0	0	0
30	AT	2016	AT0031	OMV Refining	102	0	0	0	0	2635.11	0	0	0.02	0	0
31	AT	2016	AT0032	OMV Refining	1064	0	0	0	0	0	0	11213.39	544.12	0	0
32	AT	2016	AT0033	OMV Refining	77	0	0	0	0	0	0	0	548.85	0	0
33	AT	2016	AT0034	OMV Refining	108	0	0	0	0	0	0	0	2228.45	0	0
34	AT	2016	AT0035	Salzburg AG f.	166	0	0	0	0	0	0	0	1977.2	0	0
35	AT	2016	AT0036	Salzburg AG f.	98	0	0	0	0	0	0	0	838.35	0	0
36	AT	2016	AT0037	Salzburg AG f.	66	0	0	0	0	0	0	0	697.44	0	0
37	AT	2016	AT0038	UPM	146	0	0	0	0	0	0	0	50.08	0	0
38	AT	2016	AT0039	UPM	62	0	0	0	0	0	0	0	716.94	0	0
39	AT	2016	AT0040	VERBUND	376	0	0	0	0	0	0	0	0	0	0
40	AT	2016	AT0041	VERBUND	713	0	0	0	0	0	0	0	2383.08	0	0
41	AT	2016	AT0042	VERBUND	721	0	0	0	0	0	0	0	1813.69	0	0
42	AT	2016	AT0043	voestalpine	180	0	0	0	0	0	0	0	138.1	0	0
43	AT	2016	AT0044	voestalpine	73	0	0	0	0	0	0	0	0	0	0
44	AT	2016	AT0045	voestalpine	80	0	0	0	0	0	0	0	9.06	0	0
45	AT	2016	AT0046	W.Hamburge	53	0	0	0	0	0	0	0	185.89	0	0
46	AT	2016	AT0047	WIEN	686	0	0	0	0	0	0	0	9616.34	0	0
47	AT	2016	AT0048	WIEN	946	0	0	0	0	0	0	3157.65	6225.76	0	0
48	AT	2016	AT0049	WIEN	720	0	0	0	0	0	0	0	6324.46	0	0
49	AT	2016	AT0050	WIEN	720	0	0	0	0	0	0	0	6694.11	0	0

2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016

3 Complete MS Access database

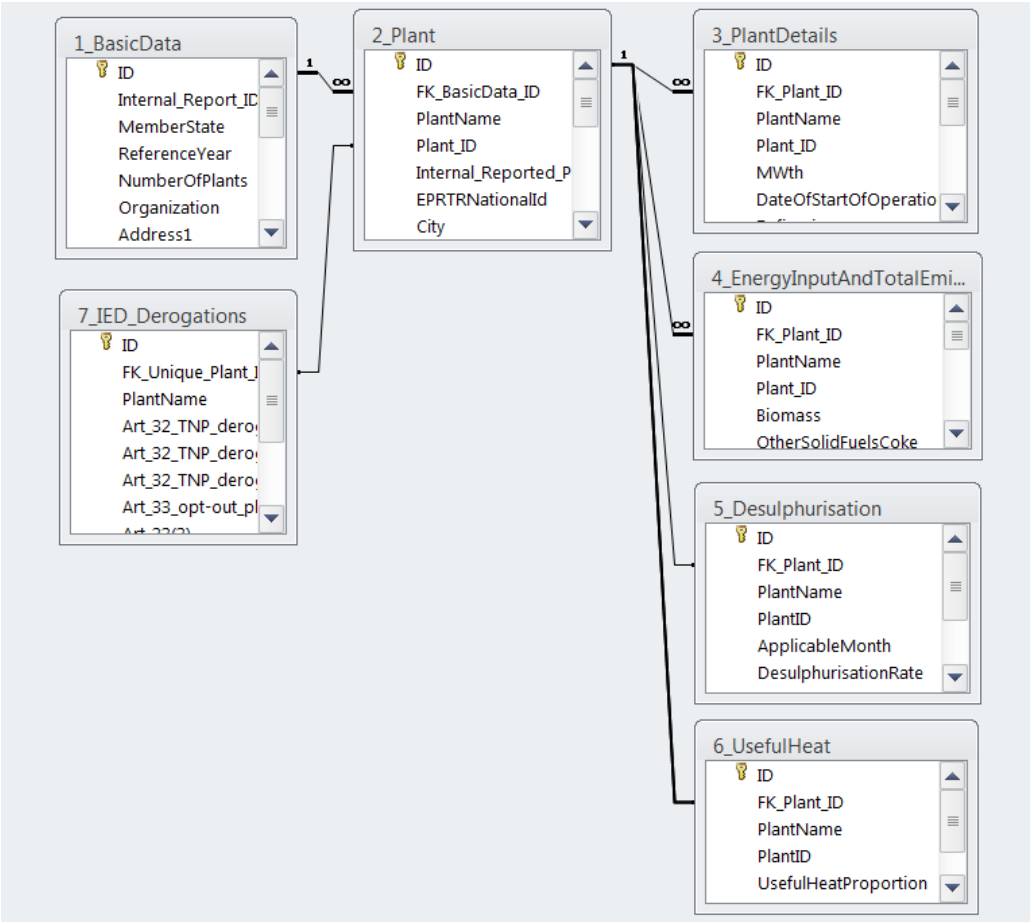
The European dataset is provided in its complete version in Microsoft Access data format. This section outlines the strtucture of the data, the interpretation of the data fields and the metadata of the file.

The data model

The database consists of 7 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_Plant contains entries for each individual plant and year.

Tables 3 to 6 contain corresponding entries for each plant and year included in table 2_Plant. Table 5_Desulphurisation contains either one or more entries for each plant and year. Table 7 contains information on plants which are subject to derogations under the Industrial Emissions Directive 2010/75/EU (IED).

Figure: Structure of the LCP database v4



The field "ID" in table 1_BasicData is the foreign key for table 2_Plant. The field "ID" in table 2_Plant is the foreign key for tables 3 to 7. The IDs and foreign keys are in "hidden mode" in the Access data tables. The field "Unique_Plant_ID" in table 2_Plant is the foreign key for table 7. 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

- ID (AutoValue, hidden field): Key for this table
- xml file and release timestamp
- Member State (Text): Two-letter ISO2 country code
- ReferenceYear (Number): Year which the inventory data refers to
- NumberOfPlants (Number): number of plants reported by a Member State in a given year
- Organization (Text): Name of the organization reporting the data
- Address1, City, State, PostalCode, NameOfDepartmentContactPerson, Phone, Email (Text): Contact details of the reporting organization

Fields in Table 2_Plant

- ID (AutoValue, hidden field): Key for this table
- FK_BasicData_ID (Text, hidden field): Foreign key, linking each entry in Table 2_Plant to the corresponding year and Member State in table 1_BasicData
- PlantName (Text): Name of the plant
- Plant_ID (Text): Identifier of the plant which stays the same over time. It consists of the two-letter country code and a four-digit number.
- EPRTRNationalID (Text): National identifier of the E-PRTR Facility associated with the plant
- City, Region, PostalCode, CountryCide, BuildingNumber, StreetName (Text): Address details of the plant.
- Longitude (Text): Geographical longitude of the plant (in decimal degrees)
- Latitude (Text): Geographical latitude of the plant (in decimal degrees)
- FacilityName (Text): Name of the E-PRTR Facility associated with the plant
- Comments (Text): Comments by the reporting authority

Fields in Table 3_PlantDetails

- ID (AutoValue, hidden field): Key for this table
- FK_Plant_ID (Text, hidden field): Foreign key, linking each entry in Table 3_PlantDetails to the corresponding plant in table 2_Plant
- PlantName (Text): Name of the plant
- Plant_ID (Text): Identifier of the plant which stays the same over time. It consists of the two-letter country code and a four-digit number.
- MWth (Number): Rated thermal input of the plant (megawatts thermal – MWth)
- DateOfStartOfOperation (Text): Date when the plant started operating
- Refineries (True/false): This entry is true where the plant is part of a refinery
- OtherSector (Text): Name of the plant's sector (other than refinery)
- OperatingHours (Number): Operating hours of the LCP
- Comments (Text): Comments by the reporting authority
- TypeOfCombustionPlant (Text): Main type of combustion plant
- TypeOfCombustionPlantFurtherDetails (Text): Further details
- Derogation (Text): If the plant is subject to a derogation, the corresponding Article of the IED is provided here.

Fields in Table 4_EnergyInputAndTotalEmissionsToAir

- ID (AutoValue, hidden field): Key for this table
- FK_Plant_ID (Text, hidden field): Foreign key, linking each entry in Table 4 to the corresponding plant in table 2_Plant
- PlantName (Text): Name of the plant
- Plant_ID (Text): Identifier of the plant which stays the same over time. It consists of the two-letter country code and a four-digit number.
- Biomass (number): Total biomass energy input of the plant in the reporting year (TJ)
- OtherSolidFuelsCoke (number): Total energy input of coke of the plant in the reporting year (TJ)
- OtherSolidFuelsPatentFuels (number): Total energy input of patent fuels of the plant in the reporting year (TJ)
- OtherSolidFuelsTar (number): Total energy input of tar of the plant in the reporting year (TJ)
- OtherSolidFuelsOther (number): Total energy input of other solid fuels of the plant in the reporting year (TJ)

- OtherSolidFuels (number): Total energy input of other solid fuels of the plant in the reporting year (TJ) – used in 2004-2015, when "other solid fuels" were not subdivided into several categories.
- LiquidFuels (number): Total liquid fuel energy input of the plant in the reporting year (TJ)
- NaturalGas (number): Total natural gas energy input of the plant in the reporting year (TJ)
- OtherGasesBlastFurnaceGas (number): Total energy input of blast furnace gas of the plant in the reporting year (TJ)
- OtherGasesCokeOvenGas (number): Total energy input of coke oven gas of the plant in the reporting year (TJ)
- OtherGasesFurnaceGas (number): Total energy input of furnace gas of the plant in the reporting year (TJ)
- OtherGasesLPG (number): Total energy input of LPG of the plant in the reporting year (TJ)
- OtherGasesOxygenSteel (number): Total energy input of oxygen steel gas of the plant in the reporting year (TJ)
- OtherGasesRefineryGas (number): Total energy input of refinery gas of the plant in the reporting year (TJ)
- OtherGasesOther (number): Total energy input of other gases of the plant in the reporting year (TJ)
- OtherGases (number): Total energy input of other gases of the plant in the reporting year (TJ) – used in 2004-2015, when "other gases" were not subdivided into several categories.
- 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)
- SO2 (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

- ID (AutoValue, hidden field): Key for this table
- FK_Plant_ID (Text, hidden field): Foreign key, linking each entry in Table 5 to the corresponding plant in table 2_Plant
- PlantName (Text): Name of the plant
- Plant_ID (Text): Identifier of the plant which stays the same over time. It consists of the two-letter country code and a four-digit number.
- ApplicableMonth (Text): Three-character abbreviation of the month for which information on desulphurization is reported.
- DesulphurisationRate (Number): Desulphurisation rate (between 0 and 1).
- SulphurContent (Text): 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

- ID (AutoValue, hidden field): Key for this table
- FK_Plant_ID (Text, hidden field): Foreign key, linking each entry in Table 6 to the corresponding plant in table 2_Plant
- PlantName (Text): Name of the plant
- Plant_ID (Text): Identifier of the plant which stays the same over time. It consists of the two-letter country code and a four-digit number.
- UsefulHeatProportion (Number): Proportion of useful heat (between 0 an 1).

Fields in Table 7_IED_Derogations

- ID (AutoValue, hidden field): Key for this table
- FK_Unique_Plant_ID (Text): Foreign key, linking each entry in Table 6 to the corresponding plant in table 2_Plant
- PlantName (Text): Name of the plant
- Art_32_TNP_derogation_for_SO2 (True/false): This entry is true if the plant is included in a Transitional National Plan according to Article 32 of the Industrial Emissions Directive 2010/75/EU for SO2
- Art_32_TNP_derogation_for_NOx (True/false): This entry is true if the plant is included in a Transitional National Plan according to Article 32 of the Industrial Emissions Directive 2010/75/EU for NOx
- Art_32_TNP_derogation_for_dust (True/false): This entry is true if the plant is included in a Transitional National Plan according to Article 32 of the Industrial Emissions Directive 2010/75/EU for dust
- Art_33_opt-out_plant (True/false): This entry is true if a limited lifetime derogation according to Article 33 of the Industrial Emissions Directive 2010/75/EU applies
- Art_33(3) (True/false): This entry is true if a limited lifetime derogation for plants in small isolated systems according to Article 33(3) of the Industrial Emissions Directive 2010/75/EU applies
- Art_34_small_isolated_system (True/false): This entry is true if an exemption from compliance with emission limit values for plants in small isolated systems according to Article 34 of the Industrial Emissions Directive 2010/75/EU applies
- Art_35_district_heating_plant (True/false): This entry is true if an exemption from compliance with emission limit values for districl heating plants according to Article 35 of the Industrial Emissions Directive 2010/75/EU applies
- Comment (Text): Comments by the reporting authority

Overview query

The database also contains a query which combines tables 1, 2, 3 and 4, in order to allow for a display of data from several tables. The query can be found under “Queries” – “Overview”. It combines the following fields: Member State – Reference year – Plant ID – PlantName – Rated Thermal Input (“MWth”) – Energy inputs (biomass, other solid fuels, liquid fuels, natural gas, other gases) – Emissions (SO2, NOX, dust) – Refineries – OtherSector.

Metadata

Reporting obligation: Summary of emission inventory for large combustion plants (LCP), Art. 4.(4) and 15.(3) - http://rod.eionet.europa.eu/obligations/9 and Reporting on Combustion Plants under Art. 72 of the IED (2010/75/EU) - http://rod.eionet.europa.eu/obligations/756

Temporal coverage: 2004 – 2017

Geographic coverage: Austria, Belgium, Bulgaria, Croatia (from 2010), Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Units:
Total energy input, related to net calorific value (TJ/year)
SO_2, NO_X and dust emissions (t/year)
Rated thermal input (MWth)