

# Reported information on large combustion plants

## Information on the database structure and use

Version 4.0



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 and Climate Change (<http://acm.eionet.europa.eu/>). The main contributor is Lorenz Moosmann (Umweltbundesamt-Austria).

The dataflow is managed by Marthe Granger (EEA), please refer to her for further enquiries ([marthe.granger@eea.europa.eu](mailto:marthe.granger@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 (reported under the Industrial Emissions Directive 2010/75/EU). The data include rated thermal input, annual energy input and emissions of SO<sub>2</sub>, NO<sub>x</sub> and dust. In addition, information on derogations under the Industrial Emissions Directive are 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 inconsistencies 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.

The data for 2016 in the database version 4.0 have not yet been subject to the complete quality assurance process. A new database version, upon completion of this process, is scheduled for July 2018.

## What is new in version 4.0

Version 4.0 is based on the reporting requirements of Article 72.3 of the Industrial Emissions Directive (IED). Compared to the previous version, 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.

Please note that the categories of fuel use a different definition for the period 2004-2015 and as from 2016. In essence, for the period 2004-2015, only 5 categories of fuel were used (biomass, liquid fuels, natural gas, other solid fuels and other gases). As from 2016, reporting of other solid fuels no longer includes coal, lignite and peat, which are reporting separately. In addition, subcategories of other solid fuels and other gases are required.

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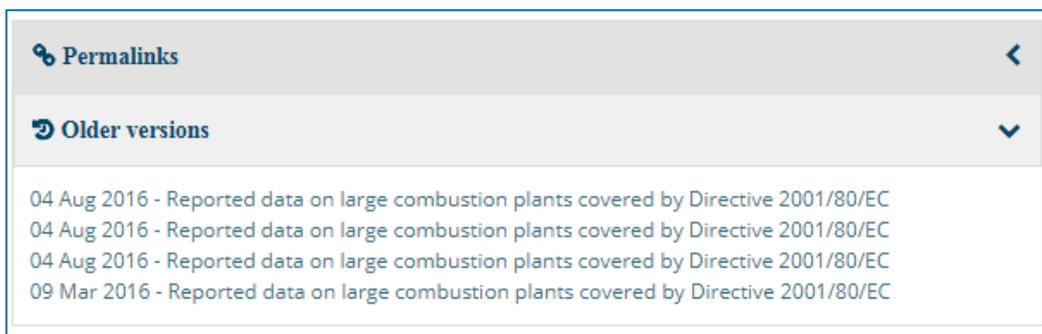
# 1 Content of the EEA dataservice entry

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 is this one:

[https://www.eea.europa.eu/ds\\_resolveuid/DAT-149-en](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**

## Reported data on large combustion plants covered by Directive 2001/80/EC

Data — Prod-ID: DAT-149-en — Created 05 Oct 2017 — Published 06 Oct 2017 — Last modified 04 Dec 2017 — 3 min read

Topics: Air pollution Industry Energy

The Directive on the limitation of emissions of certain pollutants into the air from large combustion plants (LCP Directive, 2001/80/EC) applies to combustion plants with a rated thermal input equal to or greater than 50 MW, irrespective of the type of fuel used (solid, liquid or gaseous).

European data
Metadata

**Plant-by-plant emissions (LCP) and information on derogations**

The database contains plant by plant information for Large Combustion Plants (LCP) on size, combustion technology, energy input, annual emissions (SO<sub>2</sub>, NO<sub>x</sub> and dust) and operation under specific derogatory regimes of combustion plants.

- [LCP\\_database\\_v3.1\\_mdb.zip](#) (ZIP archive)
 6.71 MB Download file
- [LCP\\_database\\_v3.1\\_csv.zip](#) (ZIP archive)
 3.08 MB Download file

**Information on the database structure and use**

- [LCP\\_database\\_metadata\\_v3.1.pdf](#) (PDF document)
 915.27 KB Download file

**User-friendly tables in Excel**

These tables, in Microsoft Excel format, offer an extract of the most relevant data fields in independent sheets for each year.

- [LCP\\_extract\\_v3.1\\_xlsx.zip](#) (ZIP archive)
 3.42 MB Download file

**Microsoft Access Database**

**CSV files containing the entire database**

**This metadata document**

**User friendly extracts in Microsoft Excel format**

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**Additional information**

The database covers plant-by-plant data for LCPs that fall under the scope of Directive 2001/80/EC. The plant-by-plant data includes total annual emissions of SO<sub>2</sub>, NO<sub>x</sub> and dust (as total suspended particles) and the total annual amount of energy input, related to the net calorific value, broken down in terms of five categories of fuel: biomass, other solid fuels, liquid fuels, natural gas, other gases.

## 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 depicted in Figure 2, the tab control at the bottom of the Excel window allows to browse the different years. The columns 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 contains more categories of fuel as the reporting requirement distinguished further on this aspect as explained earlier.

Figure 2 Overview of the Excel sheet

MemberState	ReferenceYear	Plant_ID	PlantName	MWh	Biomass	OtherSolidFuelsCoke	OtherSolidFuelsPatentFuels	OtherSolidFuelsTar	OtherSolidFuelsOther	OtherSolidFuels	LiquidFuels	NaturalGas	OtherGasesBlastFurnaceGas	OtherGasesCokeOvenGas
XX	2016	XX0005	TC Kosova B2	997	0	0	0	0	0	0	0	0	0	0
XX	2016	XX0004	TC Kosova B1	997	0	0	0	0	0	0	0	0	0	0
XX	2016	XX0003	TC Kosova A5	807	0	0	0	0	0	0	0	0	0	0
XX	2016	XX0002	TC Kosova A4	770	0	0	0	0	0	0	0	0	0	0
XX	2016	XX0001	TC Kosova A3	770	0	0	0	0	0	0	0	0	0	0
UK	2016	UK0469	Total E&P UK, 1	75.6	0	0	0	0	0	0	0	0	0	0
UK	2016	UK0467	Total E&P UK, 2	75.6	0	0	0	0	0	0	0	0	0	0
UK	2016	UK0459	Dimlington - C	80.3	0	0	0	0	0	0	0	1138.3	0	0
UK	2016	UK0407	GT4	76	0	0	0	0	0	0	2.7	0	0	0
UK	2016	UK0456	GT1	76	0	0	0	0	0	0	3.3	0	0	0
UK	2016	UK0455	Ratcliffe GT2 a	150	0	0	0	0	0	0	7.6	0	0	0
UK	2016	UK0454	Drax - GTs	420	0	0	0	0	0	0	2.3	0	0	0
UK	2016	UK0437	Hinkley Point 1	280	0	0	0	0	0	0	0	8.7	0	0
UK	2016	UK0436	Heysham GT -	66	0	0	0	0	0	0	5	0	0	0
UK	2016	UK0435	Heysham GT -	66	0	0	0	0	0	0	5.9	0	0	0
UK	2016	UK0434	Heysham GT -	66	0	0	0	0	0	0	2.9	0	0	0
UK	2016	UK0433	Heysham GT -	66	0	0	0	0	0	0	2.6	0	0	0
UK	2016	UK0432	Hartlepool GT	70	0	0	0	0	0	0	4	0	0	0
UK	2016	UK0431	Hartlepool GT	70	0	0	0	0	0	0	3.3	0	0	0
UK	2016	UK0430	Hartlepool GT	70	0	0	0	0	0	0	3.3	0	0	0
UK	2016	UK0429	Hartlepool GT	70	0	0	0	0	0	0	2.9	0	0	0
UK	2016	UK0427	Dimlington - C	80.3	0	0	0	0	0	0	0	1184.7	0	0
UK	2016	UK0423	Aberthaw Pow	246	0	0	0	0	0	0	0	2	0	0
UK	2016	UK0417	Port of Liverpool	75	0	0	0	0	0	0	0	276.1	0	0
UK	2016	UK0416	Wilton GT1	195	0	0	0	0	0	0	0	3913	0	0
UK	2016	UK0415	GT/HRSG No3	751	0	0	0	0	0	0	0	20480.2	0	0
UK	2016	UK0414	GT/HRSG A4	70	0	0	0	0	0	0	0	1136.4	0	0
UK	2016	UK0413	Brigg Renewat	114	3418.2	0	0	0	0	0	0.3	0	0	0
UK	2016	UK0412	Biomass Powe	118	3542.9	0	0	0	0	0	2	0	0	0
UK	2016	UK0408	Boiler train A5	389	0	0	0	0	0	0	0	71.8	0	0
UK	2016	UK0407	GT1 - Release	749.3	0	0	0	0	0	0	0	6654.5	0	0
UK	2016	UK0406	GT1 - Release	732.8	0	0	0	0	0	0	0	6592.9	0	0
UK	2016	UK0405	Billingham Fer	75	0	0	0	0	0	0	0	56.5	0	0
UK	2016	UK0401	GT8	712	0	0	0	0	0	0	0	11993	0	0
UK	2016	UK0397	Didcot B - OCG	392	0	0	0	0	0	0	0	50	0	0
UK	2016	UK0394	Little Barford -	58	0	0	0	0	0	0	0	3.1	0	0
UK	2016	UK0393	CHP	64.75	0	0	0	0	0	0	0	6.2	663.9	0
UK	2016	UK0383	Darkane, Boiler	110	n	n	n	n	n	n	n	n	735.8	n

## 3 Complete MS Access database

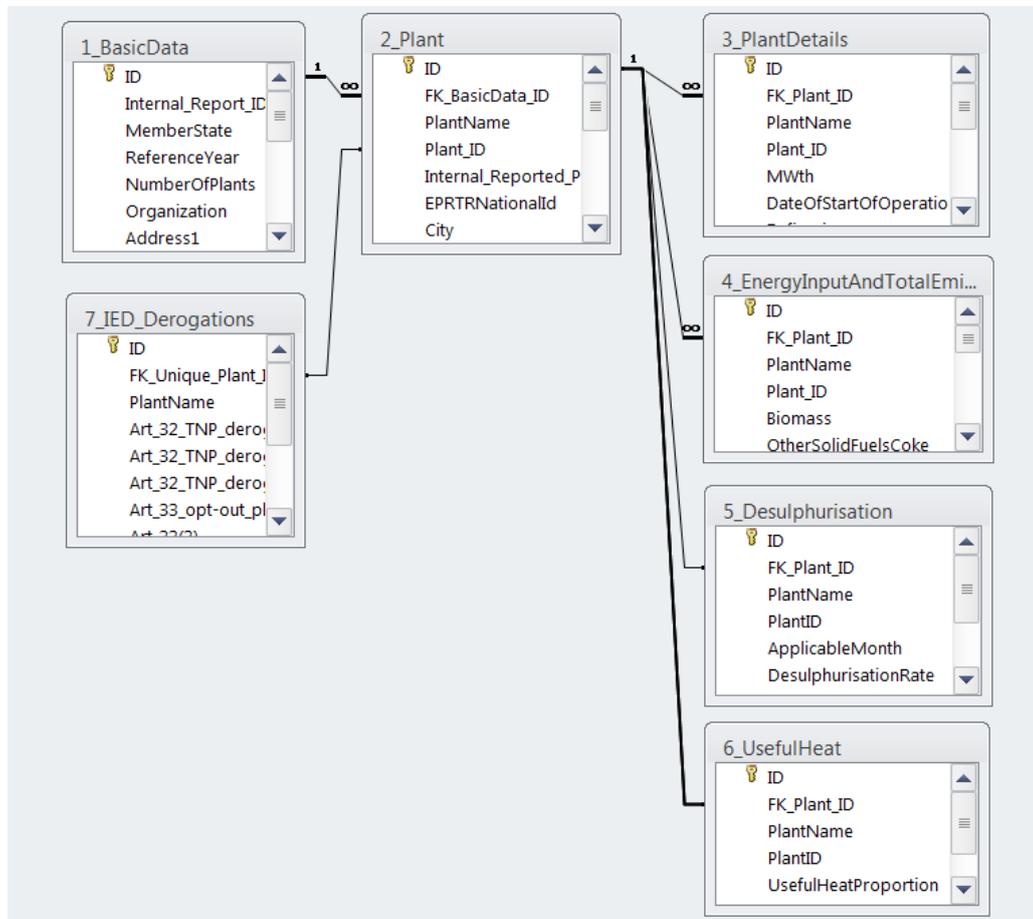
The European dataset is provided in its complete version in Microsoft Access data format. This section outlines the structure of the data, the interpretation of the data fields and the metadata of the file.

### 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). This information was collected during the year 2017 and was not updated in 2018.

Figure: Structure of the LCP database v4.0



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)
- SO<sub>2</sub> (number): Total of SO<sub>2</sub> emissions of the plant in the reporting year (t)
- NO<sub>x</sub> (number): Total of NO<sub>x</sub> 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 and 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 district 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 (various solid, liquid and gaseous fuels) – Emissions (SO<sub>2</sub>, NO<sub>x</sub>, 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 – 2016

**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, Kosovo (UNSCR 1244/99; for 2014-2016).

### Units:

Total energy input, related to net calorific value (TJ/year)

SO<sub>2</sub>, NO<sub>x</sub> and dust emissions (t/year)

Rated thermal input (MWth)