Reported information under Directive 2001/80/EC, on large combustion plants

Information on the database structure and use

Version 3.0

European Environment Agency

Acknowledgments

About the database

This database contains plant-by-plant data on Large Combustion Plants (LCP) for the years 2004 to 2015. The data include rated thermal input, annual energy input and emissions of SO_2, NO_X and dust. In addition, information on opt-outs (article 4.4) and on other derogations is provided.

The data for 2004 to 2012 were reported by EU Member States to the European Commission. Data for 2013, 2014 and 2015 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.

In 2017, the EEA asked countries to provide clarifications on important inconsistencies in the whole time series. Time series consistency, identification of plants, removal of duplicates and information gaps were tackled. Countries provided corrections covering the most pressing issues although the data can further improve.

Outliers detected in the database

The EEA has in place a procedure to identify outliers and other quality issues in the database. Once this outliers are identified, countries are notified and they start a correction procedure. Critical outliers are those that affect the totals of the relevant dimension and need to be entirely excluded to analise the data. The current version of the database does not present critical outliers for a single parameter. Some pieces of data are statistically abnormal but have been confirmed as correct by countries, reason why they are not listed as critical outliers.

The EEA has however identified inconsistencies between energy data and emissions that lead to individual emission factors that become critical outliers. These cases will be subject of checking in the next reporting cycle.

What is new in version 3.0

Version 3.0 is a major update of the database which brings in the following:
- Addition of 2015 data for all reporting countries
- Complete overhaul of data from Italy. The whole time series has been revised by the Italian authorities and a complete correction is now included in the database.
- Critical corrections for energy input in 11 plants in Poland and corrections in the identification of Polish plants.
- Updates on Austrian data to correct critical outliers present in the previous versions of the dataset
- Corrections to remove critical outliers for Belgium, Czech Republic, Spain, Greece, Ireland, Italy, Latvia, and the United Kingdom
- Update of the complete 2014 data for Belgium, Slovakia, Hungary and Ireland
- Minor updates for 2011-2014 data for Portugal

Denmark, Finland, Romania and Slovenia did not provide their input on the quality-assurance feedback that was sent to them and any eventual correction will only be taken into account in the next release of the database.

Table of contents

1 Content of the EEA daservice entry

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

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 (SO2, NOx and dust) and operation under specific derogatory regimes of combustion plants.

- LCP_database_v **X** _mdb.zip (ZIP archive)
  5.63 MB Download file
- LCP_database_v **X** _csv.zip (ZIP archive)
  2.98 MB Download file

Information on the database structure and use
- LCP_database_metadata_v **X** .pdf (PDF document)
  686.79 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_v **X** _xlsx.zip (ZIP archive)
  3.05 MB Download file

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 SO2, NOx 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.

It also includes information on derogatory regimes included in Directive 2001/80/EC, namely

Microsoft Access Database

CSV files containing the entire database

This metadata document

User friendly extracts in Microsoft Excel format

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.

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 6 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_OptOutsAndNerps contains either one or more entries for each plant and year.

Figure: Structure of the LCP database v2
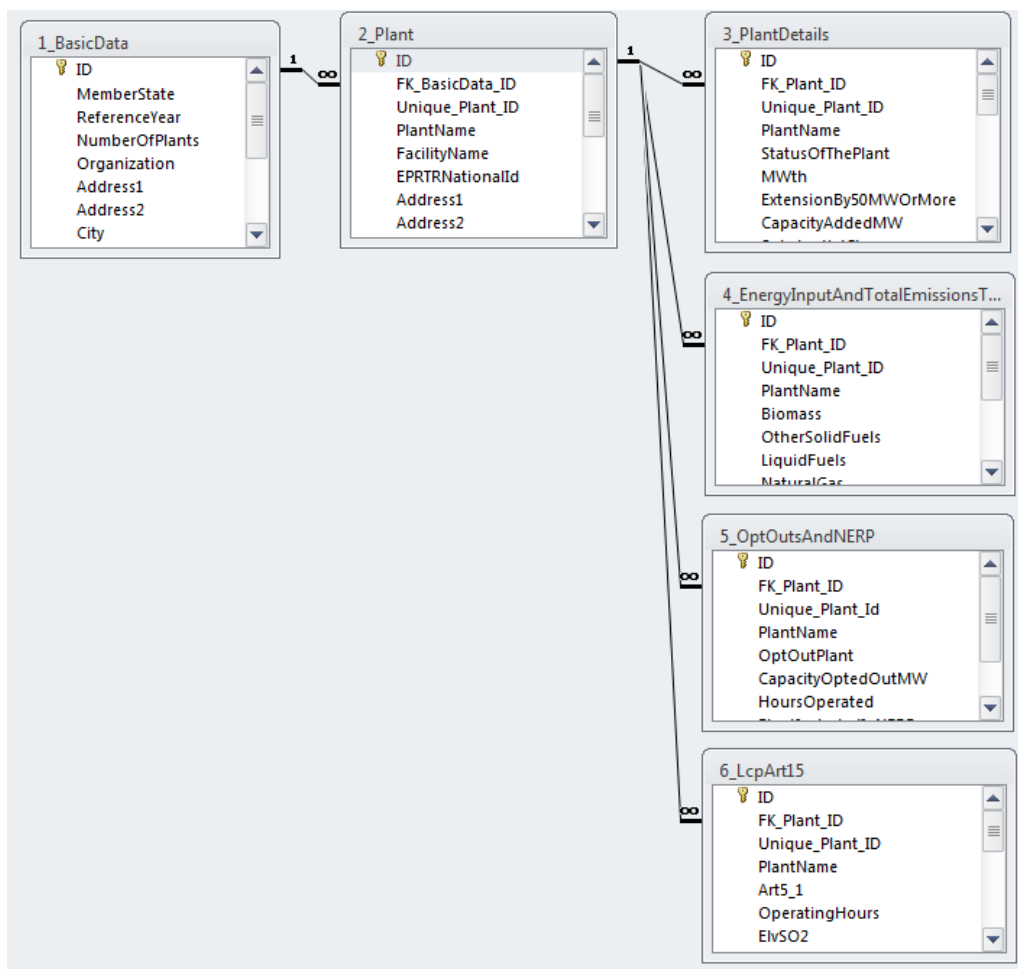
The field "ID" in table 1_BasicData is the foreign key for table 2_Plant. The field "ID" in table 2_Plant is the foreign key for tables 3 to 6. The IDs and foreign keys are in "hidden mode" in the Access data tables. All fields in the various tables are described below.

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
- 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, Address2, City, State, PostalCode, NameOfContactPerson, 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
- Unique_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.
- PlantName (Text): Name of the plant
- FacilityName (Text): Name of the E-PRTR Facility associated with the plant
- EPRTRNationalID (Text): National identifier of the E-PRTR Facility associated with the plant
- Address1, Address2, City, Region, PostalCode (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)

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
- Unique_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.
- PlantName (Text): Name of the plant
- StatusOfThePlant (Text): Whether the plant falls under Article 4(1), 4(2) or 4(3) of the LCP Directive (depending on the date of start of operation)
- MWth (Number): Rated thermal input of the plant (megawatts thermal – MWth)
- ExtensionBy50MWOrMore (True/false): This entry is true where the plant has been extended by more than 50 MWth (rated thermal input) in the reporting year
- CapacityAddedMW (Number): Increase in rated thermal input due to this extension, in MWth
- Substantial change (True/false): This entry is true where the plant has undergone a substantial change in operation according to Article 12 of the LCP Directive in the reporting year
- CapacityAffectedMW (Number): Capacity affected by this substantial change (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)
- GasTurbine (True/false): This entry is true where the plant includes a gas turbine

- GasTurbineThermalInput (Number): Rated thermal input of the gas turbine (MWth)
- Boiler (True/false): This entry is true where the plant includes a boiler
- BoilerThermalInput (Number): Rated thermal input of the boiler (MWth)
- GasEngine (True/false): This entry is true where the plant includes a gas engine
- GasEngineThermalInput (Number): Rated thermal input of the gas engine (MWth)
- DieselEngine (True/false): This entry is true where the plant includes a diesel engine
- DieselEngineThermalInput (Number): Rated thermal input of the diesel engine (MWth)
- Other (True/false): This entry is true where the plant includes another type of combustion engine
- OtherTypeOfCombustion (Text): This entry specifies the type of this combustion engine
- OtherThermalInput (Number): Rated thermal input of the other combustion engine (MWth)
- OperatingHours (Number): Operating hours of the LCP
- Comments (Text): Comments by the reporting authority

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
- Unique_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.
- PlantName (Text): Name of the plant
- Biomass (number): Total biomass energy input 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)
- 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)
- OtherGases (number): Total energy input of other gases 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_OptOutsAndNERP

- 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
- Unique_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.
- PlantName (Text): Name of the plant
- OptOutPlant (True/false): This entry is true where the plant is included in the opt-out regime under the LCP
- CapacityOptedOutMW (Number): Capacity (rated thermal input) covered by the opt-out regime (MWth)
- HoursOperated (number): Total time of operation from 1 January 2008 until the end of the reporting year (hours)
- PlantIncludedInNERP (True/false): This entry is true if the plant is included in a National Emissions Reduction Plan (NERP)

Fields in Table 6_LcpArt15

- 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
- Unique_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.
- PlantName (Text): Name of the plant
- Art5_1 (True/false): This entry is true if the plant falls under a derogation according to Article 5(1) of the LCP Directive
- OperatingHours (Number): Time of operation in the reporting year (hours)
- ElvSO2 (Number): SO_2 emission limit value applied (mg/Nm³)
- NotaBeneAnnexIII (True/false): This entry is true if the plant falls under the "nota bene" provision in Annex III of the LCP Directive
- NotaBeneElvSO2 (Number): SO_2 emission limit value applied under the "nota bene" provision (mg/Nm³)
- DesulphurisationRate (Number): Desulphurisation rate of the plant (%)
- SInput (Number): Sulphur input into the plant in the reporting year (t)
- AnnexVI_A_Footnote2 (True/false): This entry is true if the plant falls under Annex VI(A), Footnote 2 of the LCP Directive
- AnnexVI_A_Footnote2_OperatingHours (Number): Time of operation in the reporting year (hours)
- ElvNOX (Number): NO_X emission limit value applied (mg/Nm³)
- AnnexVI_A_Footnote3 (True/false): This entry is true if the plant falls under Annex VI(A), Footnote 3 of the LCP Directive
- AnnexVI_A_Footnote3_ELVNOx (Number): NO_X emission limit value applied (mg/Nm³)
- Comments (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 – Unique Plant ID – Plant Name – Rated Thermal Input ("MWth") – Energy inputs (biomass, other solid fuels, liquid fuels, natural gas, other gases) – Emissions (SO2, NOX, dust).

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

Temporal coverage: 2004 – 2015

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 and 2015).

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