



European Union

Current legislation

The first EU-wide environmental policy, the Environmental Action Programme, was introduced in 1972. The Programme was a general statement of objectives and principles for a community environmental policy. Since then there have been multiple environmental action programmes, most notably the EU Clean Air Policy Package (see http://ec.europa.eu/environment/air/clean_air_policy.htm), which includes the Clean Air for Europe Programme (see <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l28026>), National Emission Ceilings Directive, a new Directive for Medium-sized Combustion Plants and a ratification proposal for the 2012 amended Gothenburg Protocol on Long-Range Transboundary Air Pollution. The EU Clean Air Policy Package follows on from the 2005 Thematic Strategy on Air Pollution (TSAP - COM(2005) 446 final, see <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l28159>). Further regulation aimed at improving environmental air quality standards across Member States and 'Third Countries' (countries outside the EU that have also signed and ratified the agreement) is via the Convention on Long-Range Transboundary Air Pollution (see http://www.unece.org/env/lrtap/lrtap_h1.html). EU legislation takes two main forms: regulations and directives. Once approved, regulations are directly applicable and binding on Member States. Directives establish targets to be achieved, and it is up to the Member States to decide the deadline, and the form and method of implementation.

The Directive on Integrated Pollution Prevention and Control (IPPC – 2008/1/EC, see <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0001>) expired on 6 January 2014 and the Large Combustion Plant Directive (LCPD - 2001/80/EC, see <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1402653842533&uri=CELEX:32001L0080>) expired on 31 December 2015. These Directives have been overruled and replaced by the Industrial Emissions Directive (IED - 2010/75/EU, see <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0075>). A clear depiction of the LCPD and IED amalgamation can be found at <http://www.iea-coal.org.uk/documents/83364/9011/EU%20regulation%20timeline>. The legislation lays out the permitting procedures for a wide range of industrial activities, including coal-fired combustion plants with a rated thermal input greater than 50 MW, with the aim of preventing pollution by the implementation of the Best Available Techniques (BAT). Emission limits from combustion plants, have also been specified within the IED, which are more stringent than the values set within the LCPD. However, during the interim period, individual Member States can introduce a Transitional National Plan (TNP) for existing plants to ease the transition. The IED is responsible for the emissions limits of sulphur dioxide (SO₂), nitric oxide and nitrogen dioxide (NO_x) and dust (particulate matter) from combustion plants with a rated thermal input equal to or greater than 50 MW.

The Medium Combustion Plant (MCP) Directive of 25 November 2015 came into force on 18 December 2015 and will have to be transposed into domestic law by the Member States by 19 December 2017. It regulates the emissions of sulphur dioxide, nitrogen oxides and particulate matter from the combustion of fuels in plants with a rated thermal input equal to or greater than 1 MW and less than 50 MW. The Directive also lays down rules for monitoring emissions of carbon monoxide (CO). The emission limit values apply from 20 December 2018 for new plants, and from 1 January 2025 for bigger existing plants (5–50 MWth) and from 1 January 2030 for smaller existing plants (1–5 MWth).

The National Emission Ceilings for Certain Atmospheric Pollutants Directive (NECD - 2001/81/EC, see <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1402657637882&uri=CELEX:32001L0081>) sets each individual Member State their own specific national emission limit for 4 major pollutants, namely SO₂, NO_x, non-methane volatile organic compounds (NMVOC) and ammonia (NH₃). These pollutants are known to be responsible for acidification, eutrophication and the formation of tropospheric ozone.

Future legislation

The European Commission has decided (2013/0443 (COD), COM(2013) 920 final, NECD amending NEC Directive 2003/35/EC, see <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1402660918881&uri=CELEX:52013PC0920>) that full compliance of the Gothenburg Protocol 2012 (see http://www.unece.org/env/lrtap/multi_h1.html) is achievable, until 2020, based on the implementation of existing air quality policy and Member State action; thus more stringent limits will only be set for the years after 2020. The proposal repeals and replaces the current annual capping of national emissions of air pollutants, as defined in the NECD. By doing so, it ensures that the national emission ceilings set in the new NECD for 2010 onwards (for SO₂, NO_x, NMVOC and NH₃) shall apply until 2020. It also establishes new national emission reduction commitments applicable from 2020 and from 2030 for SO₂, NO_x, NMVOC, NH₃, fine particulate matter (PM_{2.5}) and methane (CH₄), as well as intermediate emission levels for the year 2025. Within this directive, compulsory reporting of several other environmentally harmful substances is also required by Member States; however, no emission limit values are set.

Market legislation

The EU has an emissions trading scheme (EU ETS 2009/29/EC, see <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0029>, which amends 2003/87/EC, see <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02003L0087-20090625>), which is responsible for the reduction in greenhouse gas emissions from facilities with a net heat output greater than 20 MW, from 31 countries within the European Economic Area. The EU ETS was launched on 1 January 2005 under Directive 2003/87/EC (see <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02003L0087-20090625>), which has since been updated via Directive 2009/29/EC (see <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0029>). The EU ETS operates on a 'Cap and Trade' system; this means there is an overall limit to the quantity of emissions possible but, within that limit, participants can buy and sell emission allowances, thus producing a marketable commodity and achieving emission cuts at the least cost. The purchasing of one emissions allowance permits the proprietor to emit 1 tonne of CO₂ or the equivalent of another greenhouse gas.

Legislated emission limit values from IED (2010/75/EU)

Directive 2010/75/EU is available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1402653842533&uri=CELEX:32001L0080>.

Emission limit values for particulate matter from existing combustion plants

Total rated thermal input, MW	Emission limit value, mg/m ³
50-100	30
100-300	25
>300	20

Note:

Applies to coal, lignite and other solid fuels.

Emission limit values for particulate matter from new combustion plants

Total rated thermal input, MW	Emission limit value, mg/m ³
50-300	20
>300	10

Emission limit values for SO₂ from existing combustion plants

Total rated thermal input, MW	Emission limit value, mg/m ³
50-100	400
100-300	250
>300	200

Note:

Combustion plants using solid fuels put into operation no later than 27 November 2003, and which do not operate for more than 1500 operating hours per year as a rolling average over a period of 5 years, shall be subject to an emission limit value for SO₂ of 800 mg/m³.

Emission limit values for SO₂ from new combustion plants

Total rated thermal input, MW	Emission limit value, mg/m ³
50-100	400
100-300	200
>300	150 200 for circulating or pressurised fluidised bed combustion

Minimum rate of desulphurisation

Existing or new combustion plants firing indigenous solid fuel, which cannot comply with the emission limit values for sulphur dioxide due to the characteristics of the fuel, may instead apply the minimum rates of desulphurisation, as set out below.

Total rated thermal input, MW	Minimum rate of desulphurisation	
	existing and operational prior to 2003*	other
50-100	80%	92%
100-300	90%	92%
>300	96%	96%

* Plants which were granted a permit before 27 November 2002 or the operators of which had submitted a complete application for a permit before that date, provided that the plant was put into operation no later than 27 November 2003.

Minimum rate of desulphurisation from new combustion plants

Total rated thermal input, MW	Minimum rate of desulphurisation
50-100	93%
100-300	93%
>300	97%

Emission limit values for NO_x from existing combustion plants

Total rated thermal input, MW	Emission limit value, mg/m ³
50-100	300 450 for pulverised lignite combustion
100-300	200
>300	200

Notes:

1. Combustion plants using solid fuels, with a total rated thermal input not exceeding 500 MW, put into operation no later than 27 November 2003, and which do not operate for more than 1500 operating hours per year as a rolling average over a period of 5 years, shall be subject to an emission limit value for NO_x of 450 mg/m³.

2. Combustion plants using solid fuels with a total rated thermal input greater than 500 MW, which were granted a permit before 1 July 1987 and which do not operate for more than 1500 operating hours per year as a rolling average over a period of 5 years, shall be subject to an emission limit value for NO_x of 450 mg/m³.

Emission limit values for NO_x from new combustion plants

Total rated thermal input, MW	Emission limit value, mg/m ³
50-100	300 400 for pulverised lignite combustion
100-300	200
>300	150 200 for pulverised lignite combustion

General notes

1. 'Existing plant' means any combustion plant for which the application for a construction and/or operation permit was granted before 7 January 2013, or the operators of which had submitted a complete application for a permit before that date, provided that such plants were put into operation no later than 7 January 2014. The emission limit values apply from 1 January 2016.

2. Existing plants that were granted an exemption under Article 4(4) of the LCPD 2001/80/EC which are in operation after 1 January 2016 will have to meet the emission limits for new plants.
3. ‘New plants’ are plants not covered by the existing plants definition, such as those that entered into operation after 7 January 2014.
4. All the above emission limit values are expressed as at 0°C, 101.3 kPa and dry flue gas basis with 6% of O₂ in the flue gas.

Legislated emission limit values from Medium Combustion Plants Directive (EU 2015/2193)

The emission limit values for medium combustion plants ($\geq 1 - < 50$ MWth) burning coal and other solid fuels (except biomass) are given in the following table. They apply from 20 December 2018 for new plants, and from 1 January 2025 for bigger existing plants ($> 5 - 50$ MWth) and from 1 January 2030 for smaller existing plants ($1 - \leq 5$ MWth). The Medium Combustion Plant (MCP) Directive is available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2193>.

	Existing plants, $\geq 1 - \leq 5$ MWth	Existing plants, $> 5 - < 50$ MWth	New plants, $\geq 1 - < 50$ MWth
Particulate matter, mg/Nm ³	50	30 ⁽¹⁾	20 ⁽³⁾
SO ₂ , mg/Nm ³	1100	400 ⁽²⁾	400
NO _x , mg/Nm ³	650	650	300 ⁽⁴⁾

⁽¹⁾ 50 mg/Nm³ in the case of plants with a rated thermal input > 5 MW and ≤ 20 MW.

⁽²⁾ 1100 mg/Nm³ in the case of plants with a rated thermal input > 5 MW and ≤ 20 MW.

⁽³⁾ 50 mg/Nm³ in the case of plants with a total rated thermal input ≥ 1 MW and ≤ 5 MW; 30 mg/Nm³ in the case of plants with a total rated thermal input > 5 MW and ≤ 20 MW.

⁽⁴⁾ 500 mg/Nm³ in the case of plants with a total rated thermal input ≥ 1 MW and ≤ 5 MW.

General notes

1. ‘Existing plant’ means a combustion plant put into operation before 20 December 2018 or for which a permit was granted before 19 December 2017, provided the plant is put into operation no later than 20 December 2018.
2. ‘New plant’ means a combustion plant other than an existing combustion plant.
3. Member States may exempt existing plants which do not operate for more than 500 operating hours per year, as a rolling average over a period of five years. However, an emission limit value for particulate matter of 200 mg/Nm³ applies to plants firing solid fuels.
4. Member States may exempt new plants which do not operate for more than 500 operating hours per year, as a rolling average over a period of three years. However, an emission limit value for particulate matter of 100 mg/Nm³ applies to plants firing solid fuels.
5. All the above emission limit values are expressed at 0°C, 101.3 kPa and dry waste gas basis with 6% of O₂ in the waste gas.

This paper reflects the IEA CCC understanding of the relevant legislation and is not a substitute for the official version. The IEA CCC does not guarantee the accuracy of the data included in this paper and accepts no responsibility for any consequences of their use.

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