



Thailand

Emission standards are set by the Pollution Control Department of the Ministry of Natural Resources and Environment under the authority of the Enhancement and Conservation of National Environmental Act, B.E. 2535 (1992) (http://www.pcd.go.th/info_serv/reg_envi.html). Emission standards for new power plants operating after 5 January 2010 were published in the Royal Thai Government Gazette, volume 127, section 7D, 3 pp (15 Jan 2010) and are available in Thai at <http://www.ratchakitcha.soc.go.th/DATA/PDF/2553/E/007/18.PDF> and http://infofile.pcd.go.th/law/2_96_air.pdf?CFID=18561820&CFTOKEN=73003884. These provide limits for the emission of SO₂, NO_x and particulate matter from new fuel burning power plants. Emission standards for existing power plants are covered in the Royal Thai Government Gazette, volume 121, section 113D, 11 pp (7 Oct 2004) and are available in Thai at <http://www.ratchakitcha.soc.go.th/DATA/PDF/0E/00150024.PDF> (also see http://infofile.pcd.go.th/law/2_7_air.pdf?CFID=18561820&CFTOKEN=73003884). Emission standards for industrial processes were published in the Royal Thai Government Gazette, volume 123, section 50D, 6 pp (18 May 2006) and are available in Thai at <http://www.ratchakitcha.soc.go.th/DATA/PDF/2549/00189175.PDF> (These provide limits for the emission of SO₂, NO_x, particulate matter and other chemicals from industrial processes. The standards are summarised (in Thai) on the Pollution Control Department's website at http://www.pcd.go.th/info_serv/reg_std_airsnd03.html).

Emission standards for new power plants

The emission standards for new power plants replaced the earlier standards issued on 30 January 1996. They are relevant for plants generating, transmitting or distributing electricity that have acquired a permit for operation or expansion since 15 January 2010. Fuel types used for generation that are covered by the notification include coal, oil, natural gas and biomass. The limits for new coal-fired power plants are as follows:

Power plant size, MW	SO ₂ , ppm	NO _x (as NO ₂), ppm	Particulate matter, mg/m ³
≤50	360	200	80
>50	180	200	80

Note: Reference conditions are 25°C at 101.3 kPa (1 atm) or 760 mmHg on a dry flue gas basis, with 50% of excess air or 7% of O₂ during combustion.

For power plants that utilise mixed fuels, for each generating unit the emission standard is calculated based upon the ratio of each fuel type as follows:

$$\text{Emission standard} = AX + BY + CZ$$

where:

- A = emission standard when only coal is used
- B = emission standard when only oil is used
- C = emission standard when only gas is used
- X = ratio of heat input from coal
- Y = ratio of heat input from oil
- Z = ratio of heat input from gas

Emission standards for existing power plants

The emission standards for existing power plants updated the earlier standard issued on 27 December 1999 for plants that use biomass. The standards impose limits on the quantity and concentrations of sulphur dioxide, nitrogen oxides (as nitrogen dioxide) and particulate matter emitted from named existing power plants and generic limits for those not mentioned. Existing coal, oil and natural gas power plants are any plant that generates, transmits or distributes electricity which acquired a permit of operation or expansion prior to 31 January 1996.

Existing power plant	SO ₂ , ppm	NO _x (as NO ₂), ppm	Particulate matter, mg/m ³
Mae Moh power plant			
Units 1-3	1300	500	180
Units 4-7 and 8-13	320	500	180
Other coal plant of any size	700	400	320

Note: Reference conditions are 25°C at 101.3 kPa (1 atm) or 760 mmHg on a dry flue gas basis, with 50% of excess air or 7% of O₂ during combustion.

Emission standards for industrial processes

The emission standards for industrial processes cover production processes with or without fuel consumption for boilers or the production process itself. Pollutants include sulphur dioxide, nitrogen oxides, particulate matter and others that are only valid for the production process.

Source	Pollutant	Emission limit
coal-burning boiler or furnace	SO ₂	700 ppm
coal-burning boiler or furnace	NO _x (as NO ₂)	400 ppm
coal-burning boiler or furnace	particulate matter	320 mg/m ³

Note: Reference conditions are 25°C at 101.3 kPa (1 atm) or 760 mmHg on a dry flue gas basis, with 50% of excess air or 7% of O₂ during combustion.

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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