EMISSIONS STANDARDS

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The Indian Central Pollution Control Board, a division of the Ministry of Environment, Forest and Climate Change, sets national ambient air quality standards under the authority conferred by the Air (Prevention and Control of Pollution) Act, which was enacted in 1981 and amended in 1987 to provide for the prevention, control and abatement of air pollution in India. The Environment (Protection) Act was enacted in 1986 with the objective of providing for the protection and improvement of the environment. It empowers the Central Government to establish authorities charged with the mandate of preventing environmental pollution in all its forms and to tackle specific environmental problems in different parts of the country; this includes the ability to set emission limit values for thermal power plants. The Act was last amended in 1991.

The latest air emission and water consumption limits for coal- and lignite-fired power plants set by the Ministry of Environment, Forest and Climate Change, dated 7 December 2015, were published in the Gazette of India: Extraordinary, Part II, Section 3(ii), no. 2620, 8 December 2015. An amendment, the Environment (Protection) Amendment Rules 2018, was published in the Gazette of India: Extraordinary, Part II, Section 3(i), no. 435, 29 June 2018. Both are included here.

Emission limits for thermal power plants

	Plants installed before 31 December 2003[1]		Plants installed 1 January 2004 to 31 December 2016[1]		New plants installed from 1 January 2017[2]
Capacity	<500 MW	≥500 MW	<500 MW	≥500 MW	Any size
Particulate matter, mg/m^3	100	100	50	50	30
SO_2, mg/m^3	600	200	600	200	100
NOx, mg/m^3	600	600	300	300	100
Mercury, mg/m^3	–	0.03	0.03	0.03	0.03

[1] Thermal power plants (units) must meet the limits within two years from the date of publication of this notification (8 December 2015).

[2] Includes all thermal power plants (units) which have been accorded environmental clearance and are under construction.

The reference conditions for the emission limits for SO_2, NOx and particulate matter are at 0°C, 101.3 kPa and corrected to 6% oxygen in the waste gas, on a dry basis.

Water consumption limits for thermal power plants

	Existing plants		New plants installed after 1 January 2017
	With once-through cooling*	With cooling towers	
Limit, m^3/MWh	3.5[1]	3.5[1]	3.0[2]

[1] Thermal power plants (units) must meet the limits within two years from the date of publication of this notification (8 December 2015).

[2] These plants must also achieve zero waste water discharge. The limit was updated under the Environment (Protection) Amendment Rules, 2018.

* Must install cooling towers.

The above water consumption limits are not applicable to thermal power plants using sea water.

STACK HEIGHT LIMITS

The Environment (Protection) Amendment Rules, 2018, introduced stack height limits for coal- and lignite-fired power plants with wet flue gas desulphurisation based on their emission rates of SO_2; they are included below.

Stack height limits for thermal power plants with wet flue gas desulphurisation (FGD)

	Power generation capacity	
	<100 MW	≥100 MW
Stack height limit, m	$H = 6.902(Q \times 0.277)^{0.555}$ or 30 m (whichever is greater)	$H = 6.902(Q \times 0.277)^{0.555}$ or 100 m minimum

Q = Emission rate of SO_2 in kg/h (total of all the units connected to the stack)
H = Physical stack height in meters.

Updated: August 2019