

EMISSIONS STANDARDS

SOUTH KOREA



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The main foundation for preserving the environment and preventing environmental pollution is the *Framework Act on Environmental Policy* that was first enacted on 1 August 1990. The latest amendment, in Korean, is [Act no. 16267](#) of 15 January 2019, that came into force on 16 July 2019. The prevention of air pollution is covered in the *Clean Air Conservation Act*, first enacted in 1990; the latest amendment in force is [Act no. 16266](#) (in Korean) of 15 January 2019 that came into force on 16 July 2019. The latest amendment that is due to come into force on 3 April 2020 is [Act no. 16306](#) of 2 April 2019 (in Korean).

Emission standards are set by the [Ministry of Environment](#). The emission limit values for coal-fired power plants, industrial boilers, coking plants and other industrial plants are stipulated in the *Enforcement Regulations of Clean Air Conservation Act*. Emission limits have been progressively tightened over the years. The latest emission limits are given in Appendix 8 of the [Enforcement Rules of Air Quality Preservation Act](#) (in Korean) that was in force on 16 July 2019. Two sets of emission limits are given in the following tables: those applicable until 31 December 2019 and those valid from 1 January 2020.

PARTICULATE MATTER

Emission limits for particulate matter from power plants until 31 December 2019

Power plant capacity, MW	Emission limit, mg/m ³		
	Installed before 30 June 2001	Installed after 1 July 2001	Installed after 1 January 2015
<100	40	30	30
≥100	12	10	5

Some exceptions:

Dangjin Eco power plant, emission limit is 5 mg/m³ for Units 1 and 2

Gangneung Anin power plant, emission limit is 5 mg/m³ for Units 1 and 2

Goseong Hai power plant, emission limit is 5 mg/m³ for Units 1 and 2

Samcheok power plant, emission limit is 5 mg/m³ for Units 1 and 2

Samcheok Green power plant, emission limit is 15 mg/m³ for Units 1 and 2

Shin Seocheon power plant, emission limit is 5 mg/m³ for Unit 1

Yeongdong power plant, emission limit is 10 mg/m³ for Unit 1

Yeongheung power plant, emission limit is 20 mg/m³ for Units 1 and 2, and 5 mg/m³ for Units 3 to 6

Emission limits for particulate matter from power plants from 1 January 2020

Power plant capacity, MW	Emission limit, mg/m ³		
	Installed before 30 June 2001	Installed after 1 July 2001	Installed after 1 January 2015
<100	20	15	10
≥100	12	10	5

Some exceptions:

Dangjin Eco power plant, emission limit is 5 mg/m³ for Units 1 and 2

Gangneung Anin power plant, emission limit is 5 mg/m³ for Units 1 and 2

Goseong Hai power plant, emission limit is 5 mg/m³ for Units 1 and 2

Samcheok power plant, emission limit is 5 mg/m³ for Units 1 and 2

Samcheok Green power plant, emission limit is 15 mg/m³ for Units 1 and 2

Shin Seocheon power plant, emission limit is 5 mg/m³ for Unit 1

Yeongdong power plant, emission limit is 10 mg/m³ for Unit 1 and 5 mg/m³ for Unit 2

Yeongheung power plant, emission limit is 10 mg/m³ for Units 1 and 2, and 5 mg/m³ for Units 3 to 6

Emission limits for particulate matter from industrial boilers

Industrial boilers	Emission limit until 31 December 2019, mg/m ³		Emission limit from 1 January 2020, mg/m ³	
	Installed before 31 December 2014	Installed after 1 January 2015	Installed before 31 December 2014	Installed after 1 January 2015
Flow rate of exhaust gas is <5 t/h or with a heating value of <3,095,000 kilocalories (12,958 MJ) per hour	50	20	30	16
Flow rate of exhaust gas is between 5 and 20 t/h or with a heating value of ≥3,095,000 kilocalories (12,958 MJ) and <12,380,000 kilocalories (51,833 MJ) per hour	40	20	25	16
Flow rate of exhaust gas is >20 t/h or with a heating value of >12,380,000 kilocalories (51,833 MJ) per hour	20	10	16	10

Emission limits for particulate matter from coal gasification and coking plants

	Emission limit until 31 December 2019, mg/m ³	Emission limit after 1 January 2020, mg/m ³
Coal gasification plants (combustion facilities)	20	15
Coking plants	20	15

Notes

1. Emission limits have also been set for metals, such as cadmium, in the particulate matter, from facilities using solid fuels.
2. The emission limits for power plants and industrial boilers include those burning mixtures with liquid fuels.
3. Emission limits are expressed at 25°C, 101.3 kPa and with 6% of O₂ in the exhaust gas (dry basis).

SULPHUR DIOXIDE

Emission limits for sulphur dioxide from power plants until 31 December 2019

Power plant capacity, MW	Emission limit, ppm		
	Installed before 30 June 1996	Installed before 31 December 2014	Installed after 1 January 2015
<100	130 (371.8 mg/m ³)	80 (228.8 mg/m ³)	50 (143 mg/m ³)
When burning Korean anthracite	150 (429 mg/m ³)	80 (228.8 mg/m ³)	50 (143 mg/m ³)
≥100	60 (171 mg/m ³)	50 (143 mg/m ³)	25 (71.5 mg/m ³)
When burning Korean anthracite	100 (286 mg/m ³)	80 (228.8 mg/m ³)	50 (143 mg/m ³)

Some exceptions:

Boryeong power plant, emission limit is 100 ppm (286 mg/m³) for Units 1 and 2

Dangjin Eco power plant, emission limit is 25 ppm (71.5 mg/m³) for Units 1 and 2

Donghae power plant, emission limit is 120 ppm (343.2 mg/m³) for Units 1 and 2

Gangneung Anin power plant, emission limit is 25 ppm (71.5 mg/m³) for Units 1 and 2

Goseong Hai power plant, emission limit is 25 ppm (71.5 mg/m³) for Units 1 and 2

Honam power plant, emission limit is 100 ppm (286 mg/m³) for units 1 and 2

Samcheok power plant, emission limit is 25 ppm (71.5 mg/m³) for Units 1 and 2

Samcheok Green power plant, emission limit is 40 ppm (114.4 mg/m³) for Units 1 and 2

Samchunpo power plant, emission limit is 70 ppm (200.2 mg/m³) for Units 1 and 2, 50 ppm (143 mg/m³) for Units 3 and 4, and 140 ppm (400.4 mg/m³) for Units 5 and 6

Shin Seocheon power plant, emission limit is 25 ppm (71.5 mg/m³) for Unit 1

Yeongheung power plant, emission limit is 45 ppm (128.7 mg/m³) for Units 1 and 2, and 25 ppm (71.5 mg/m³) for Units 3 to 6

Emission limits for sulphur dioxide from power plants from 1 January 2020

Power plant capacity, MW	Emission limit, ppm		
	Installed before 30 June 1996	Installed before 31 December 2014	Installed after 1 January 2015
<100	90 (257.4 mg/m ³)	60 (171 mg/m ³)	35 (100.1 mg/m ³)
When burning Korean anthracite	100 (286 mg/m ³)	50 (143 mg/m ³)	35 (100.1 mg/m ³)
≥100	60 (171 mg/m ³)	50 (143 mg/m ³)	25 (71.5 mg/m ³)
When burning Korean anthracite	60 (171 mg/m ³)	50 (143 mg/m ³)	35 (100.1 mg/m ³)

Some exceptions:

Boryeong power plant, emission limit is 100 ppm (286 mg/m³) for Units 1 and 2 until 31 December 2022

Dangjin Eco power plant, emission limit is 25 ppm (71.5 mg/m³) for Units 1 and 2

Donghae power plant, emission limit is 120 ppm (343.2 mg/m³) for Units 1 and 2

Gangneung Anin power plant, emission limit is 25 ppm (71.5 mg/m³) for Units 1 and 2

Goseong Hai power plant, emission limit is 25 ppm (71.5 mg/m³) for Units 1 and 2

Honam power plant, emission limit is 100 ppm (286 mg/m³) for Units 1 and 2 until 31 January 2021

Samcheok power plant, emission limit is 25 ppm (71.5 mg/m³) for Units 1 and 2

Samcheok Green power plant, emission limit is 40 ppm (114.4 mg/m³) for Units 1 and 2

Samchunpo power plant, emission limit is 50 ppm (143 mg/m³) for Units 3 and 4, 140 ppm (400.4 mg/m³) for Units 5 and 6 until 31 December 2020, and 25 ppm (71.5 mg/m³) from 1 January 2021

Shin Seocheon power plant, emission limit is 25 ppm (71.5 mg/m³) for Unit 1

Yeongdong power plant, emission limit is 10 ppm (28.6 mg/m³) for Units 1 and 2

Yeongheung power plant, emission limit is 45 ppm (128.7 mg/m³) for Units 1 and 2, and 25 ppm (71.5 mg/m³) for Units 3 to 6

Emission limits for sulphur dioxide from industrial boilers

Emission limit until 31 December 2019, ppm			Emission limit after 1 January 2020, ppm			
Installed before 30 June 2001	Installed after 1 July 2001	Installed after 1 January 2015	Installed before 30 June 2001	Installed after 1 July 2001	Installed after 1 January 2015	Installed after 1 January 2020
180 (514.8 mg/m ³)	150 (429 mg/m ³)	70 (200.2 mg/m ³)	120 (343.2 mg/m ³)	100 (286 mg/m ³)	50 (143 mg/m ³)	20 (57.2 mg/m ³)

Emission limits for sulphur dioxide from combustion facilities in coal gasification and coking plants

	Emission limit until 31 December 2019, ppm	Emission limit after 1 January 2020, ppm
Coal gasification plants	120 (343.2 mg/m ³)	80 (228.8 mg/m ³)
Coking plants	120 (343.2 mg/m ³)	85 (243.1 mg/m ³)

Notes

1. The emission limits for power plants and industrial boilers include those burning mixtures with liquid fuels.
2. Emission limits are expressed at 25°C, 101.3 kPa and with 6% of O₂ in the exhaust gas (dry basis).
3. The ppm limits have been converted into mg/m³ under the assumption that 1 ppm = molecular weight of SO₂ (64.06 g/mol) divided by a constant (22.41), that is, ppm x 2.86.

NITROGEN OXIDES

Emission limits for nitrogen oxides from power plants until 31 December 2019

Power plant capacity, MW	Emission limit, ppm		
	Installed before 30 June 1996	Installed after 1 July 1996	Installed after 1 January 2015
<100	140 (287 mg/m ³)	70 (143.5 mg/m ³)	50 (102.5 mg/m ³)
≥100	70 (143.5 mg/m ³)	50 (102.5 mg/m ³)	15 (30.7 mg/m ³)

Some exceptions:

Boryeong power plant, emission limit is 140 ppm (287 mg/m³) for Units 1 and 2 until 31 May 2022

Donghae power plant, emission limit is 80 ppm (164 mg/m³) for Units 1 and 2

Dangjin Eco power plant, emission limit is 15 ppm (30.7 mg/m³) for Units 1 and 2

Gangneung Anin power plant, emission limit is 15 ppm (30.7 mg/m³) for Units 1 and 2

Goseong Hai power plant, emission limit is 15 ppm (30.7 mg/m³) for Units 1 and 2

Honam power plant, emission limit is 140 ppm (287 mg/m³) for Units 1 and 2 until 31 January 2021

Samcheok power plant, emission limit is 15 ppm (30.7 mg/m³) for Units 1 and 2

Samchunpo power plant, emission limit is 140 ppm (287 mg/m³) for Units 1,2, 5 and 6 until 31 December 2020

Shin Seocheon power plant, emission limit is 15 ppm (30.7 mg/m³) for Unit 1

Yeongdong power plant, emission limit is 90 ppm (184.5 mg/m³) for Unit 1

Yeongheung power plant, emission limit is 55 ppm (112.7 mg/m³) for Units 1 and 2, and 15 ppm (30.7 mg/m³) for Units 3 to 6

The emission limit is 300 ppm (615 mg/m³), determined with 13% (instead of 6%) of O₂ in the exhaust gas, for facilities that installed selective catalytic reduction (SCR) before 31 January 2007.

Emission limits for nitrogen oxides from power plants from 1 January 2020

Power plant capacity, MW	Emission limit, ppm		
	Installed before 30 June 1996	Installed after 1 July 1996	Installed after 1 January 2015
<100	90 (184.5 mg/m ³)	60 (123 mg/m ³)	30 (61.5 mg/m ³)
≥100	70 (143.5 mg/m ³)	50 (102.5 mg/m ³)	15 (30.7 mg/m ³)

Some exceptions:

Dangjin Eco power plant, emission limit is 15 ppm (30.7 mg/m³) for Units 1 and 2

Gangneung Anin power plant, emission limit is 15 ppm (30.7 mg/m³) for Units 1 and 2

Goseong Hai power plant, emission limit is 15 ppm (30.7 mg/m³) for Units 1 and 2

Shin Seocheon power plant, emission limit is 15 ppm (30.7 mg/m³) for Unit 1

Yeongdong power plant, emission limit is 40 ppm (82 mg/m³) for Unit 2

Yeongheung power plant, emission limit is 55 ppm (112.7 mg/m³) for Units 1 and 2, and 15 ppm (30.7 mg/m³) for Units 3 to 6

The emission limit is 300 ppm (615 mg/m³), determined with 13% (instead of 6%) of O₂ in the exhaust gas, for facilities that installed selective catalytic reduction (SCR) before 31 January 2007.

Emission limits for nitrogen oxides from industrial boilers

Emission limit until 31 December 2019, ppm		Emission limit after 1 January 2020, ppm		
Installed before 31 January 2007	Installed after 1 February 2007	Installed before 31 January 2007	Installed after 1 February 2007	Installed after 1 January 2020
120 (246 mg/m ³)	70 (143.5 mg/m ³)	70 (143.5 mg/m ³)	60 (123 mg/m ³)	50 (102.5 mg/m ³)

Emission limits for combustion facilities at coal gasification plants

	Emission limit until 31 December 2019, ppm	Emission limit after 1 January 2020, ppm
Coal gasification plants	150 (307.5 mg/m ³)	115 (235.7 mg/m ³)

Emission limits for combustion facilities in coking plants

	Emission limit until 31 December 2019, ppm		Emission limit after 1 January 2020, ppm	
	Installed before 31 December 2006	Installed after 1 January 2007	Installed before 31 December 2006	Installed after 1 January 2007
Coking plants	250 (512.5 mg/m ³)	150 (307.5 mg/m ³)	190 (389.5 mg/m ³)	115 (235.7 mg/m ³)

Notes

1. Emission limits are expressed at 25°C, 101.3 kPa and with 6% of O₂ (unless otherwise stated) in the exhaust gas (dry basis).
2. The ppm limits have been converted into mg/m³ under the assumption that 1 ppm = molecular weight of NO + NO₂ (46.01 g/mol) divided by a constant (22.41), that is, ppm x 2.05.

MERCURY

Emission limits for mercury from power generation

	Emission limit until 31 December 2019, mg/m ³	Emission limit from 1 January 2020, mg/m ³
	0.05	0.04
If >10 t/year emitted	0.03	0.02

The emission limit is expressed at 25°C, 101.3 kPa and with 6% of O₂ in the exhaust gas (dry basis).

This paper reflects the IEACCC understanding of the relevant legislation and is not a substitute for the official version. The IEACCC 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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