

# EMISSIONS STANDARDS

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## HONG KONG

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Emissions standards for air pollutant emissions from coal-fired power plants are set in *BPM 7/1 (2018) – A Guidance Note on The Best Practicable Means for Electricity Works (Coal-Fired Plant, Gas-Fired Gas Turbine, And Oil-Fired Gas Turbine)* (available from: [https://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/air/guide\\_ref/files/bpm7\\_1.pdf](https://www.epd.gov.hk/epd/sites/default/files/epd/english/environmentinhk/air/guide_ref/files/bpm7_1.pdf)). It applies to all existing coal power generating units  $\geq 200$  MWe (output) that were constructed after 1 January 1991. The Hong Kong Authority has prohibited the installation of new coal-fired generation unit to control the emissions from power generation sector since 1997.

## Emission standards for coal-fired power plants

Pollutant	Emission limit values, mg/m <sup>3</sup>
Particulates	50 mg/m <sup>3</sup> (2-hourly average)
Combustion process <sup>1</sup>	
SO <sub>2</sub>	90% removal of the potential emission from burning of coal with a maximum allowable sulphur content of 1% by weight (air dry basis) (Approximate equivalent concentration: 200 mg/m <sup>3</sup> )
NO <sub>x</sub> (as NO <sub>2</sub> )	670 mg/m <sup>3</sup>
Hg and its compounds (as Hg)	10 µg/m <sup>3</sup> (Average value over the sampling period of around 2 hours)
Opacity (Ringelmann smoke chart)	<2 for start-up from cold <1 for other periods
Non-combustion process <sup>2</sup>	
Particulates	50 mg/m <sup>3</sup>

\*<sup>1</sup> All figures, other than smoke emission or those specified above, are based on an hourly averaging period and expressed as at 6% O<sub>2</sub> (or 12% CO<sub>2</sub> as the case may be), 0°C, 101.325 kPa and dry conditions

<sup>2</sup> The figure is expressed as at 0°C, 101.325 kPa and undiluted conditions

For every emission year, the total quantity of emission allowances (t/y) for air pollutant emissions from coal-fired power plants are set in *Technical Memorandum for Allocation of Emission Allowances in Respect of Specified Licences* (available from [https://www.epd.gov.hk/epd/english/envir\\_standards/statutory/esg\\_stat.html](https://www.epd.gov.hk/epd/english/envir_standards/statutory/esg_stat.html)).

## Emissions allowances (t/y) for existing coal-fired power plants:

### 1) Lamma Power Station and Lamma Power Station Extension

Pollutant	From 1 Jan 2020 and thereafter	From 1 Jan 2021 and thereafter	From 1 Jan 2022 and thereafter
SO <sub>2</sub>	$3130 + (2 - A) \times 0.563$	$2870 + (2 - A) \times 0.529$	$2210 + (2 - A) \times 0.459$
NO <sub>x</sub> (as NO <sub>2</sub> )	$6350 + (2 - A) \times 0.928$	$6220 + (2 - A) \times 0.938$	$4910 + (2 - A) \times 0.922$
Respirable suspended particulates	$145 + (2 - A) \times 0.019$	$130 + (2 - A) \times 0.017$	$120 + (2 - A) \times 0.018$

### 2) Black Point Power Station

Pollutant	From 1 Jan 2020 and thereafter	From 1 Jan 2021 and thereafter	From 1 Jan 2022 and thereafter
SO <sub>2</sub>	279	278	319
NO <sub>x</sub> (as NO <sub>2</sub> )	4074	4063	3381
Respirable suspended particulates	108	108	120 123

### 3) Castle Peak Power Station

Pollutant	From 1 Jan 2020 and thereafter	From 1 Jan 2021 and thereafter	From 1 Jan 2022 and thereafter
SO <sub>2</sub>	$4259 + (32 - B) \times 0.422$	$3930 + (32 - B) \times 0.407$	$2759 + (100 - B) \times 0.343$
NO <sub>x</sub> (as NO <sub>2</sub> )	$10844 + (32 - B) \times 1.073$	$10245 + (32 - B) \times 1.062$	$9237 + (100 - B) \times 1.148$
Respirable suspended particulates	$331 + (32 - B) \times 0.033$	$311 + (32 - B) \times 0.031$	$120\ 246 + (100 - B) \times 0.030$

Where:

A is the aggregate of total net sent-out electricity output (in GWh) from the Renewable Energy Systems to the electricity grid of Lamma Power Station and Lamma Power Station Extension in the emission year;

B is the aggregate of total net sent-out electricity output (in GWh) from the Renewable Energy Systems to the electricity grid of Castle Peak Power Station in the emission year.

### Emissions allowances (t/y) for new power plants:

Pollutant	From 1 Jan 2020 and thereafter	From 1 Jan 2021 and thereafter	From 1 Jan 2022 and thereafter
SO <sub>2</sub>	$36 \times (C/300) \times (D/12) - E \times 0.018$	$36 \times (C/300) \times (D/12) - E \times 0.018$	$36 \times (C/300) \times (D/12) - E \times 0.018$
NO <sub>x</sub> (as NO <sub>2</sub> )	$55 \times (C/300) \times (D/12) - E \times 0.028$	$55 \times (C/300) \times (D/12) - E \times 0.028$	$55 \times (C/300) \times (D/12) - E \times 0.028$
Respirable suspended particulates	$14 \times (C/300) \times (D/12) - E \times 0.007$	$14 \times (C/300) \times (D/12) - E \times 0.007$	$14 \times (C/300) \times (D/12) - E \times 0.007$

#### Where

C is the total installed capacity (in MW) of the New Electricity Works; or 300, whichever is smaller;

D is the total number of months in the emission year after the commencement of operation of the New Electricity Works and part of a month is taken as a full month in the determination;

E is the aggregate of total net sent-out electricity output (in GWh) from the Renewable Energy Systems to the electricity grid of the New Electricity Works in the emission year.

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