CIMC ENRIC Energy Systems (Shanghai)

Diesel vs Natural Gas Genset Emissions

Comparative reference for customer discussions

Technical Reference

At a comparable power class (approx. 500 kW), natural-gas gensets typically emit substantially less NOx, particulate matter and non-methane hydrocarbons than diesel units. Figures below are compiled from published industry sources for early customer conversations and option screening.

Exhaust emission factors (~500 kW • g/bhp • h)

Pollutant	Diesel	Natural Gas	NG vs Diesel
NOx	3.9	0.03	**~95% lower**
NMHC	0.2	≈ 0	**~98% lower**
CO	1.2	0.59	**~59% lower**
PM (particulates)	0.07	≈ 0 (negligible)	**Nearly eliminated**
SO_2	Present (even with ULSD)	Essentially none	**Near-zero sulfur**

Indicative 20-year cumulative emissions (100 operating hours/year)

Pollutant	Diesel (tons)	Natural Gas (tons)
NOx	6.54	0.05
CO	2.02	1.01
NMHC	0.34	≈ 0
PM	6.89	Negligible (often not quantified)

In short: at equal power, natural-gas gensets are clearly cleaner on NOx and particulates, and usually lower on CO. Particulate and sulfur emissions are effectively negligible. CO_2 / GHG is also typically lower than diesel (lean-burn on the order of ~40% lower; rich-burn ~11% lower — depends on engine design).

Disclaimer: Exhaust factors and the 20-year table are compiled from published industry white papers (Generac Industrial Energy, Environmental and Regulatory Advantages of Natural Gas Generators, ~500 kW appendix; CO_2 order of magnitude referenced from Schneider Electric materials). **This sheet is not CIMC ENRIC factory-test or product-certification data** and does not commit to project-specific emission limits. For tenders and permitting, use applicable local regulations, certifications and CIMC formal datasheets / test reports. Prepared by CIMC ENRIC Energy Systems • 2026-10-26 • Asia/Shanghai • cimcenergysystem.com