

		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029~	
		(NOx or NOx+NMHC / CO / PM (, PN)) or (NOx / HC / CO / PM (, PN)) Unit: g/kWh														
USA	0kW ≤ 8kW	Tier 4 7.5/8.0/0.40[G2+NRRTC]														
	8kW ≤ 19kW	Tier 4 7.5/6.6/0.40[G2+NRRTC]														
	19kW ≤ 37kW	Tier 4 4.7/5.5/0.03[C1+NRRTC]														
	37kW ≤ 56kW	Tier 4 4.7/5.0/0.03[C1+NRRTC]														
	56kW ≤ 75kW	Tier 4 0.40/0.19/5.0/0.02[C1+NRRTC]														
	130kW ≤ 560kW	Tier 4 0.40/0.19/3.5/0.02[C1+NRRTC]														
	(EPA APU)	Phase 1 (optional) PM=0.15g/kWh			Phase 1 PM=0.15g/kWh				Phase 2 PM=0.02 g / kWh or retrofit DPF							
	(CARB APU)	Phase 2 PM=0.02 g / kWh or retrofit DPF														
	※APU: Auxiliary Power Unit (not to power truck)															
	(CARB TRU)	(in-use reg.)7yrs after vehicle MY ULETRU(PM=0.03g/kWh)														
	Truck TRU: Switching over to ZE Truck TUR. Beginning on December 31 2023, fleet owners must meet required phase-in ZE Truck TRU fleet percentage. Other than Truck TRU: Starting in 2023MY, TRUs must meet PM standards at or below 0.03 g/kWh (ULETRU) addition to Tier 4 compliant.															
	※TRU: Transport Refrigeration Unit															
EU	0kW ≤ 8kW	Stage V 7.5/8.00 /0.40 [G2 or C1]														
	8kW ≤ 19kW	Stage V 7.5/6.60/0.40 [G2 or C1]														
	19kW ≤ 37kW	Stage IIIA 7.5/5.5/0.6 [C1]														
	37kW ≤ 56kW	Stage IIIIB 4.7/5.0/0.025 [C1+NRRTC]														
	56kW ≤ 75kW	Stage IV 0.4/0.19/5.0/0.025 [C1+NRRTC]														
	75kW ≤ 130kW	Stage IV 0.4/0.19/5.0/0.025 [C1+NRRTC]														
	130kW ≤ 560kW	Stage IV 0.4/0.19/3.5/0.025 [C1+NRRTC]														
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027~															
Japan	< 19kW	Voluntary emission regulations Tier 2 (LEMA) Tier 4 equivalent														
	8kW < 19kW	Designation System of the Low Emission Construction Machineries Tier 3 7.5/5.0/0.8, 40(smoke[%])[C1]														
	19kW ≤ 37kW	Designation System of the Low Emission Construction Machineries Tier 3 6.0/1.0/5.0/0.4, 40(smoke[%])[C1]														
	37kW ≤ 56kW	Designation System of the Low Emission Construction Machineries Tier 3 4.0/0.7/5.0/0.3, 35(smoke[%])[C1]														
	56kW ≤ 75kW	Designation System of the Low Emission Construction Machineries Tier 3 4.0/0.7/5.0/0.25, 30(smoke[%])[C1]														
	75kW ≤ 130kW	Designation System of the Low Emission Construction Machineries Tier 3 3.6/0.4/5.0/0.2, 25(smoke[%])[C1]														
		※Smoke applied to machines only.														
		19kW ≤ 37kW	on/off 2014 Regulation 4.0/0.7/5.0/0.03 [C1+NRRTC] ,0.5(smoke[m ⁻¹])※													
		37kW ≤ 56kW	on/off 2014 Regulation 4.0/0.7/5.0/0.025 [C1+NRRTC] ,0.5(smoke[m ⁻¹])※													
		56kW ≤ 75kW	on/off 2014 Regulation 0.4/0.19/5.0/0.02 [C1+NRRTC] ,0.5(smoke[m ⁻¹])※													
	75kW ≤ 130kW	on/off 2014 Regulation 0.4/0.19/5.0/0.02 [C1+NRRTC] ,0.5(smoke[m ⁻¹])※														
	130kW ≤ 560kW	on/off 2014 Regulation 0.4/0.19/3.5/0.02 [C1+NRRTC] ,0.5(smoke[m ⁻¹])※														
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029~															
China	0kW ≤ 19kW	※ Smoke std. for equipment started on 1 Dec. 2018. Class II applies to entire China, III only to area where use of highly emitted designated NRMM is prohibited.														
	19kW ≤ 37kW	Stage III 7.5/5.5/0.60 [G2]														
	37kW ≤ 56kW	Stage III 7.5/5.5/0.60 [C1]														
	56kW ≤ 75kW	Stage III 4.7/5.0/0.40 [C1]														
	75kW ≤ 130kW	Stage III 4.7/5.0/0.40 [C1]														
	130kW ≤ 560kW	Stage IV 3.3/0.19/5.0/0.025 [C1+NRRTC] ※II: 0.80 m-1, III: 0.50 m-1														
		Stage IV 2.0/0.19/3.5/0.025 [C1+NRRTC] ※II: 0.80 m-1, III: 0.50 m-1														
	↑ Dec. 2022~															
Beijing	0kW ≤ 8kW	Stage IV 7.5/5.5/0.6 [(G2 or C1)+NRRTC]														
	8kW ≤ 19kW	Stage IV 7.5/5.5/0.6 [(G2 or C1)+NRRTC]														
	19kW ≤ 37kW	Stage IV 7.5/5.5/0.6 [C1+NRRTC]														
	37kW ≤ 56kW	Stage IV 4.7/5.0/0.025 [C1+NRRTC]														
	56kW ≤ 75kW	Stage IV 3.3/0.19/ 5.0/0.025 [C1+NRRTC]														
	75kW ≤ 130kW	Stage IV 3.3/0.19/ 5.0/0.025 [C1+NRRTC]														
	130kW ≤ 560kW	Stage IV 2.0/0.19/ 3.5/0.025 [C1+NRRTC]														
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029~															
Korea	0kW ≤ 8kW(Const.)	Stage IV 7.5/8.0/0.4 [G2+NRRTC]				→ Dec. 2020~			Stage V 7.5/8.0/0.4 [G2]							
	8kW ≤ 19kW(Const.)	Stage IV 7.5/6.6/0.4 [G2+NRRTC]							Stage V 7.5/6.6/0.4 [G2]							
	19kW ≤ 37kW(Const.)	Stage IV 4.7/5.5/0.03 [C1+NRRTC]							Stage V 4.7/5.0/0.015, 1×10 ¹² [C1+NRRTC]							
	37kW ≤ 56kW(Const.)	Stage IV 4.7/5.0/0.03 [C1+NRRTC]							Stage V 4.7/5.0/0.015, 1×10 ¹² [C1+NRRTC]							
	56kW ≤ 130kW(Const.)	Stage IV 0.4/0.19/5.0/0.025 [C1+NRRTC]							Stage V 0.4/0.19/5.0/0.015, 1×10 ¹² [C1+NRRTC]							
	130kW ≤ 560kW(Const.)	Stage IV 0.4/0.19/3.5/0.025 [C1+NRRTC]							Stage V 0.4/0.19/3.5/0.015, 1×10 ¹² [C1+NRRTC]							
	0kW ≤ 8kW(Ag.)	Stage IV 7.5/8.0/0.4 [G2+NRRTC]				→ Jul. 2021~			Stage V 7.5/8.0/0.4 [G2]							
	8kW ≤ 19kW(Ag.)	Stage IV 7.5/6.6/0.4 [G2+NRRTC]							Stage V 7.5/6.6/0.4 [G2]							
	19kW ≤ 37kW(Ag.)	Stage IV 4.7/5.5/0.03 [C1+NRRTC]							Stage V 4.7/5.0/0.015, 1×10 ¹² [C1+NRRTC]							
	37kW ≤ 56kW(Ag.)	Stage IV 4.7/5.0/0.03 [C1+NRRTC]							Stage V 4.7/5.0/0.015, 1×10 ¹² [C1+NRRTC]							
56kW ≤ 130kW(Ag.)	Stage IV 0.4/0.19/5.0/0.025 [C1+NRRTC]							Stage V 0.4/0.19/5.0/0.015, 1×10 ¹² [C1+NRRTC]								
130kW ≤ 560kW(Ag.)	Stage IV 0.4/0.19/3.5/0.025 [C1+NRRTC]							Stage V 0.4/0.19/3.5/0.015, 1×10 ¹² [C1+NRRTC]								
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029~															
India	0kW ≤ 8kW (Ag.)	Bharat Stage IIIA 8.5/5.5/0.80 [C1]														
	8kW ≤ 19kW(Ag.)	Bharat Stage IIIA 8.5/5.5/0.80 [C1]														
	19kW ≤ 37kW(Ag.)	Bharat Stage IIIA 7.5/5.5/0.60 [C1]														
	37kW ≤ 56kW(Ag.)	Bharat Stage IIIA 4.7/5.0/0.40 [C1]														
	56kW ≤ 75kW(Ag.)	Bharat Stage IIIA 4.7/5.0/0.40 [C1]														
	75kW ≤ 130kW(Ag.)	Bharat Stage IIIA 4.0/5.0/0.30 [C1]														
	130kW ≤ 560kW(Ag.)	Bharat Stage IIIA 4.0/3.5/0.20 [C1]														
	0kW ≤ 8kW (Const.)	Bharat Stage III 7.5/8.0/0.80 [C1]														
	8kW ≤ 19kW(Const.)	Bharat Stage III 7.5/6.6/0.80 [C1]														
	19kW ≤ 37kW(Const.)	Bharat Stage III 7.5/5.5/0.60 [C1]														
37kW ≤ 56kW(Const.)	Bharat Stage III 4.7/5.0/0.40 [C1]															
56kW ≤ 75kW(Const.)	Bharat Stage III 4.7/5.0/0.40 [C1]															
75kW ≤ 130kW(Const.)	Bharat Stage III 4.0/5.0/0.30 [C1]															
130kW ≤ 560kW(Const.)	Bharat Stage III 4.0/3.5/0.20 [C1]															
0kW ≤ 8kW (Gen set)	CPCB II 7.5/3.5/0.3 [D2]															
8kW ≤ 19kW(Gen set)	CPCB II 7.5/3.5/0.3 [D2]															
19kW ≤ 37kW(Gen set)	CPCB II 4.7/3.5/0.3 [D2]															
37kW ≤ 56kW(Gen set)	CPCB II 4.7/3.5/0.3 [D2]															
56kW ≤ 75kW(Gen set)	CPCB II 4.7/3.5/0.3 [D2]															
75kW ≤ 800kW(Gen set)	CPCB II 4.7/3.5/0.2 [D2]															
56kW ≤ 560kW(Gen set)	CPCB IV+ 0.67/0.19/3.5/0.03 smoke 0.7m ⁻¹															
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029~															
Brazil	19kW ≤ 37kW(Ag.)	Proct Proconve MAR-I 7.5 /5.5 /0.6 [C1]														
	37kW ≤ 56kW(Ag.)	Proct Proconve MAR-I 4.7/5.0/0.4 [C1]														
	56kW ≤ 75kW(Ag.)	Proct Proconve MAR-I 4.7/5.0/0.4 [C1]														
	75kW ≤ 130kW(Ag.)	Proconve MAR-I 4.0/5.0/0.3 [C1]														
	130kW ≤ 560kW(Ag.)	Proconve MAR-I 4.0/3.5/0.2 [C1]														
	19kW ≤ 37kW(Const.)	Proconve MAR-I 7.5 /5.5 /0.6 [C1]														
37kW ≤ 56kW(Const.)	Proconve MAR-I 4.7/5.0/0.4 [C1]															
56kW ≤ 75kW(Const.)	Proconve MAR-I 4.7/5.0/0.4 [C1]															
75kW ≤ 130kW(Const.)	Proconve MAR-I 4.0/5.0/0.3 [C1]															
130kW ≤ 560kW(Const.)	Proconve MAR-I 4.0/3.5/0.2 [C1]															
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029~															
Chile	19kW ≤ 37kW(Ag.)	← 21 Oct. 2024~														
	37kW ≤ 56kW(Ag.)	Stage IV equivalent														
	56kW ≤ 75kW(Ag.)	Stage IV equivalent														
	75kW ≤ 130kW(Ag.)	Stage IV equivalent														
	130kW ≤ 560kW(Ag.)	Stage IV equivalent														
	19kW ≤ 37kW(others)	← 21 Oct. 2023~														
37kW ≤ 56kW(others)	Stage IV equivalent															
56kW ≤ 75kW(others)	Stage IV equivalent															
75kW ≤ 130kW(others)	Stage IV equivalent															
130kW ≤ 560kW(others)	Stage IV equivalent															
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029~															
Australia NSW	19kW ≤ 37kW	Tier 3 equivalent														
	37kW ≤ 56kW	Tier 3 equivalent														
	56kW ≤ 75kW	Tier 3 equivalent														
	75kW ≤ 130kW	Tier 3 equivalent														
	130kW ≤ 560kW	Tier 3 equivalent														
	※Items purchased by government of NSW(New South Wales State)															
Turkey	0kW ≤ 19kW	← 1 Oct. 2022~														
	19kW ≤ 37kW	Stage IIIA equivalent														
	37kW ≤ 56kW	Stage IIIA equivalent														
	56kW ≤ 75kW	Stage IIIA equivalent														
	75kW ≤ 130kW	Stage IIIA equivalent														
130kW ≤ 560kW	Stage IIIA equivalent															
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029~															
Indonesia	18kW ≤ 37kW															
	37kW ≤ 75kW															
	75kW ≤ 130kW															
	130kW ≤ 560kW															
South Africa	19kW ≤ 37kW	Stage IIIA equivalent														
	37kW ≤ 75kW	Stage IIIA equivalent														
	75kW ≤ 130kW	Stage IIIA equivalent														
	130kW ≤ 560kW	Stage IIIA equivalent														
Morocco	18kW ≤ 37kW	Stage II equivalent														
	37kW ≤ 75kW	Stage II equivalent														
	75kW ≤ 130kW	Stage II equivalent														
	130kW ≤ 560kW	Stage II equivalent														
	2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029~															
(NOx or NOx+NMHC / CO / PM (, PN)) or (NOx / HC / CO / PM (, PN)) Unit: g/kWh																

NOTE: Depending on regulation, smoke requirement and/or D2 cycle for Gen.set may be applied.