

NCTCOG PUBLIC AGENCY POLICY FOR CONSTRUCTION EQUIPMENT

Reference Sheet

Non-Road Diesel (CI) Engines NOx Emission Standards by Model Year				
Engine Power (HP)	Tier	Model Year	Emissions (NOx) g/bhp-hr	Emissions (NOx + NMHC) g/bhp-hr
25<hp<50 19<kW<37	Tier 0 (uncontrolled)	pre-1999	7.2	N/A
	Tier 1	1999-2003	6.745	7.1
	Tier 2	2004+	5.32	5.6
50<hp<100 37<kW<75	Tier 0 (uncontrolled)	pre-1998	8.8	N/A
	Tier 1	1998-2003	6.9	N/A
	Tier 2	2004-2007	5.32	5.6
	Tier 3	2008+	3.325	3.5
100<hp<175 75<kW<130	Tier 0 (uncontrolled)	pre - 1997	9.5	N/A
	Tier 1	1997-2002	6.9	N/A
	Tier 2	2003-2006	4.655	4.9
	Tier 3	2007+	2.85	3
175<hp<300 130<kW<225	Tier 0 (uncontrolled)	pre-1996	9.3	N/A
	Tier 1	1996-2002	6.9	N/A
	Tier 2	2003-2005	4.655	4.9
	Tier 3	2006+	2.85	3
300<hp<600 225<kW<450	Tier 0 (uncontrolled)	pre-1996	9.5	N/A
	Tier 1	1996-2000	6.9	N/A
	Tier 2	2001-2005	4.56	4.8
	Tier 3	2006+	2.85	3
600<hp<750 450<kW<560	Tier 0 (uncontrolled)	pre-1996	9.7	N/A
	Tier 1	1996-2001	6.9	N/A
	Tier 2	2002-2005	4.56	4.8
	Tier 3	2006+	2.85	3
hp>750 kW>560	Tier 0 (uncontrolled)	pre-2000	9.1	N/A
	Tier 1	2000-2005	6.9	N/A
	Tier 2	2006+	4.56	4.8
	Tier 3	N/A	N/A	N/A

Verified Nonroad Retrofit Technologies with NOx Emissions Reductions 25 Percent or Greater (as of May 1, 2007)				
Manufacturer	Technology	Applicability	Reduction (%)	
			PM	NOx
<u>Extengine</u>	DOC + SCR	1991-1995 Cummins 5.9 liter off-road; 15 ppm sulfur diesel or CARB diesel.	25	80
<u>Caterpillar, Inc.*</u>	Emissions Upgrade Group*	Caterpillar model 3306 diesel engines for nonroad applications with model years from 1988 to 1995 with mechanical direct fuel injection.*	15*	27*

*The verification on this technology is conditional, as the testing has not been completed.

Information on verified technologies is available at the following websites:

EPA - www.epa.gov/otag/retrofit/retroverifiedlist.htm

CARB - www.arb.ca.gov/diesel/verdev/vt/cvt.htm

For more information on the construction policy, see www.nctcoq.org/construction.