

Estimated Engine Upgrade Costs to Comply with Non-Emergency Portions of NESHAP

NESHAP Costing Data						
Generator kW	500	750	1000	1250	1500	2000
Combined DOC/Silencer (Universal Silencer)	\$3,930	\$6,620	\$6,620	\$7,640	\$7,640	\$14,820
DOC/Silencer Install	\$7,500	\$8,750	\$10,000	\$11,250	\$12,500	\$15,000
Exhaust Temperature/Backpressure Monitoring System	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Temp/BP System Install	\$500	\$500	\$500	\$500	\$500	\$500
Crankcase Ventilation System	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Maintenance (Thermal Cleaning, Chemical Cleaning)	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Temporary Stack for Emissions Testing	\$500	\$625	\$750	\$875	\$1,000	\$1,250
Stack Testing	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Field Ops (Permitting, Procurement, Project Management, Testing, Maintenance)	\$8,400	\$8,400	\$8,400	\$8,400	\$8,400	\$8,400
Contingency Markup (15%)	\$5,525	\$6,134	\$6,341	\$6,700	\$6,906	\$8,396
Total Cost	\$42,355	\$47,029	\$48,611	\$51,365	\$52,946	\$64,366

Notes:

- 1) Based on discussions with DOC manufacturers , engine suppliers who provided quotes for existing engines in Vermont, Florida, and Colorado, and engineers.
- 2) These are considered average costs and would not be applicable for engines that require structural modifications (e.g., building changes). If structural engineering is required, the costs will be significantly higher.
- 3) These costs only estimate initial stack testing; not the ongoing 3 to 5 year stack testing requirements.
- 4) These costs represent stack testing at actual load not at 100% rated load. If testing at 100% rated load is required, the rental of a load bank is required which is a significant cost. Most standby generators operate at only a fraction (usually 40 to 60%) of maximum rated load. If EPA allows testing at the actual load and then requires a permit to limit at this load, these costs do not account for permitting.
- 5) These costs do not include logistics of installations at difficult locations. For example, engines at ski lifts that are being used for non-emergency operations.
- 6) These costs do not account for pressure drops due to the installation of the required controls. Pressure drops will cause a de-rating of the engine.