

**APPENDIX D-4**  
**Beneficiary Eligible Mitigation Action Certification**

## BENEFICIARY ELIGIBLE MITIGATION ACTION CERTIFICATION

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Beneficiary State of Texas

Lead Agency Authorized to Act on Behalf of the Beneficiary Texas Commission on Environmental Quality (TCEQ)  
*(Any authorized person with delegation of such authority to direct the Trustee delivered to the Trustee pursuant to a Delegation of Authority and Certificate of Incumbency)*

<b>Action Title:</b>	TxVEMP Projects to Replace or Repower Refuse Vehicles
<b>Beneficiary's Project ID:</b>	
<b>Funding Request No.</b>	<i>(sequential)</i>
<b>Request Type: (select one or more)</b>	<input checked="" type="checkbox"/> Reimbursement <span style="margin-left: 150px;"><input type="checkbox"/> Advance</span> <input type="checkbox"/> Other (specify): _____
<b>Payment to be made to: (select one or more)</b>	<input type="checkbox"/> Beneficiary <input checked="" type="checkbox"/> Other (specify): <u>Vendors and Lead Agency</u>
<b>Funding Request &amp; Direction (Attachment A)</b>	<input type="checkbox"/> Attached to this Certification <input checked="" type="checkbox"/> To be Provided Separately

### SUMMARY

<b>Eligible Mitigation Action</b>	<input checked="" type="checkbox"/> Appendix D-2 item (specify): <u>Category 1: Local Freight Trucks Class 8</u> <input type="checkbox"/> Item 10 - DERA Option (5.2.12) (specify and attach DERA Proposal): _____
<b>Action Type</b>	
<b>Explanation of how funding request fits into Beneficiary's Mitigation Plan (5.2.1):</b> See Attachment	
<b>Detailed Description of Mitigation Action Item Including Community and Air Quality Benefits (5.2.2):</b> These actions will mitigate nitrogen oxides (NOx) emissions that can impact the formation of ground-level ozone in local and regional areas. See Attachment.	
<b>Estimate of Anticipated NOx Reductions (5.2.3):</b> The TCEQ estimates that projects funded under this action will mitigate approximately 247 tons of NOx over a four-year period.	
<b>Identification of Governmental Entity Responsible for Reviewing and Auditing Expenditures of Eligible Mitigation Action Funds to Ensure Compliance with Applicable Law (5.2.7.1):</b> TCEQ	
<b>Describe how the Beneficiary will make documentation publicly available (5.2.7.2).</b> See Attachment	
<b>Describe any cost share requirement to be placed on each NOx source proposed to be mitigated (5.2.8).</b> See Attachment	
<b>Describe how the Beneficiary complied with subparagraph 4.2.8, related to notice to U.S. Government Agencies (5.2.9).</b> See Attachment	

If applicable, describe how the mitigation action will mitigate the impacts of NOx emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions (5.2.10).  
See Attachment

**ATTACHMENTS**  
**(CHECK BOX IF ATTACHED)**

- Attachment A Funding Request and Direction.
- Attachment B Eligible Mitigation Action Management Plan Including Detailed Budget and Implementation and Expenditures Timeline (5.2.4).
- Attachment C Detailed Plan for Reporting on Eligible Mitigation Action Implementation (5.2.11).
- Attachment D Detailed cost estimates from selected or potential vendors for each proposed expenditure exceeding \$25,000 (5.2.6). [Attach only if project involves vendor expenditures exceeding \$25,000.]
- Attachment E DERA Option (5.2.12). [Attach only if using DERA option.]
- Attachment F Attachment specifying amount of requested funding to be debited against each beneficiary's allocation (5.2.13). [Attach only if this is a joint application involving multiple beneficiaries.]

**CERTIFICATIONS**

By submitting this application, the Lead Agency makes the following certifications:

1. This application is submitted on behalf of Beneficiary State of Texas, and the person executing this certification has authority to make this certification on behalf of the Lead Agency and Beneficiary, pursuant to the Certification for Beneficiary Status filed with the Court.
2. Beneficiary requests and directs that the Trustee make the payments described in this application and Attachment A to this Form.
3. This application contains all information and certifications required by Paragraph 5.2 of the Trust Agreement, and the Trustee may rely on this application, Attachment A, and related certifications in making disbursements of trust funds for the aforementioned Project ID.
4. Any vendors were or will be selected in accordance with a jurisdiction's public contracting law as applicable. (5.2.5)
5. Beneficiary will maintain and make publicly available all documentation submitted in

support of this funding request and all records supporting all expenditures of eligible mitigation action funds subject to applicable laws governing the publication of confidential business information and personally identifiable information. (5.2.7.2)

DATED: 8/23/19

  
\_\_\_\_\_  
Jon Niermann, Chairman

Texas Commission on Environmental Quality

\_\_\_\_\_  
**LEAD AGENCY**

for

State of Texas

\_\_\_\_\_  
**BENEFICIARY**

## Supplementary Form to Appendix D-4

### Explanation of how funding request fits into Beneficiary's Mitigation Plan (5.2.1).

The TCEQ requests \$21,785,317.50 in funds for the replacement or repower of refuse vehicles with cleaner models. Projects funded under this request will mitigate the potential for exposure of the public to pollutants. (Page 3, Beneficiary Mitigation Plan for Texas)

### Detailed Description of Mitigation Action Item Including Community and Air Quality Benefits (5.2.2).

This category includes the replacement or repower of class 8 vehicles configured to collect and transport municipal solid waste (refuse vehicles). Eligible refuse vehicles include: garbage trucks, roll-off trucks, dump trucks, sweeper trucks, chipper trucks, and grapple trucks. Eligible vehicles must also be powered by a diesel engine of model year 1992-2009.

The emissions from refuse vehicles that operate on regular routes result in more concentrated NO<sub>x</sub> emissions that have the potential to add to the formation of ground-level ozone in the local and regional area. In addition, these vehicles operate on routes within the community, resulting in increased potential for exposure of the public to pollutants emitted by older engines.

Eligible grantees must be in the listed Priority Area and Counties:

Priority Area	Counties
Austin Area:	Bastrop, Caldwell, Hays, Travis, Williamson
Beaumont-Port Arthur Area:	Hardin, Jefferson, Orange
Bell County:	Bell
Dallas-Fort Worth Area:	Collin, Dallas, Denton, Ellis, Hood, Johnson, Kaufman, Parker, Rockwall, Tarrant, Wise
El Paso County:	El Paso
Houston-Galveston-Brazoria Area:	Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Waller
San Antonio Area:	Bexar, Comal, Guadalupe, Wilson

### Describe how the Beneficiary will make documentation publicly available (5.2.7.2).

Documents will be made publicly available through the:

- Texas Volkswagen Environmental Mitigation Program (TxVEMP) website [www.TexasVWFund.org](http://www.TexasVWFund.org);
- TxVEMP email subscription list; and
- Texas Electronic State Business Daily website.

In addition, the Texas Commission on Environmental Quality (TCEQ) will be hosting application workshops and webinars to assist grantees with the application process.

### Describe any cost share requirement to be placed on each NO<sub>x</sub> source proposed to be mitigated (5.2.8).

Grants will be awarded on a first-come, first-served basis. An applicant may apply for and may be reimbursed for no more than the maximum percentage of cost limits or a predetermined table amount, whichever is less. See below for the maximum percentage of cost limits.

<b>Government-Owned</b>	
Replacement or Repower-Electric, Diesel, or Alternative Fuel	80%
<b>Non-Government-Owned</b>	
Replacement - Diesel or Alternative Fuel	25%
Repower - Diesel or Alternative Fuel	40%
Replacement or Repower - Electric	50%

Payments will be made on a reimbursement basis for eligible expenses incurred and paid by the grant recipient. A cost may not be considered incurred until the grant-funded goods and services have been received and accepted by the grant recipient. Grant recipients will be required to provide documentation to show that equipment or services have been received and the expenses have been incurred and paid by the grant recipient before reimbursement is provided by the TCEQ.

**Describe how the Beneficiary complied with subparagraph 4.2.8, related to notice to U.S. Government Agencies (5.2.9).**

In accordance with Section 4.2.8 of the State Trust Agreement, the TCEQ provided notice via email to the U.S. Department of Interior and U.S. Department of Agriculture of the opportunity to request Volkswagen mitigation action funds. This notice included a copy of the State Trust Agreement and informed them of the opportunity to comment on Texas' draft Beneficiary Mitigation Plan.

**If applicable, describe how the mitigation action will mitigate the impacts of NO<sub>x</sub> emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions (5.2.10).**

The plan identifies seven Priority Areas that bear a disproportionate share of air pollution and particularly ozone within Texas:

- Dallas-Fort Worth Area
- Houston-Galveston-Brazoria Area
- San Antonio Area
- Austin Area
- El Paso County
- Bell County
- Beaumont-Port Arthur Area

These include the three areas of the state identified as nonattainment for the ground-level ozone National Ambient Quality Standards (NAAQS) and four other areas of the state that have monitored ground-level ozone concentrations close to the 2015 ground-level ozone NAAQS limit of 70 parts per billion.

Nonattainment Areas:

- Dallas-Fort Worth Area: Collin, Dallas, Denton, Ellis, Hood, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise
- Houston-Galveston-Brazoria Area: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller
- San Antonio Area: Bexar

Attainment Areas:

- Austin Area: Bastrop, Caldwell, Hays, Travis, and Williamson
- El Paso County
- Bell County
- Beaumont-Port Arthur Area: Hardin, Jefferson, and Orange
- San Antonio Area: Comal, Guadalupe, and Wilson

The Priority Areas contain many of the major metropolitan centers of the state as well as approximately 71% of the state population. Because of ground-level ozone formation in these areas, the TCEQ has determined that 81% of the total funding (approximately \$169.5 million) will be allocated exclusively to these areas to provide beneficial impacts on air quality.

The replacement or repower of vehicles that operate within communities located in these areas will help address the goals of the program, including reducing the potential exposure of residents in within these communities to pollutants emitted from older vehicles. To be considered operating in an area, a majority (51% or more) of the annual mileage or hours of operation of the grant-funded vehicle or equipment must occur in the designated counties.

## Attachment B to D-4: Eligible Mitigation Action Management Plan and Budget

### I. Project Management Plan: Project Schedule and Milestones

Milestones	Date <sup>1</sup>
Application period for the replacement or repower of school buses, transit buses, and shuttle buses	Oct. 2019- Oct. 2020
Conduct application workshops in Priority Areas of Texas	Sept. 2019
Review and select project applications on a first-come, first served basis	Oct. 2019- Oct. 2020
Draft and execute contracts with entities selected for award	Oct. 2019- Oct. 2020
Process certification of disposition for equipment being replaced submitted by Awardee	Jan. 2020- Mar. 2022
Process requests for reimbursement for the new equipment submitted by Awardee	Jan. 2020- Mar. 2022
TCEQ certifies payment direction to Trustee monthly through the submission of an Attachment A.	Jan. 2020- Mar. 2022
TCEQ will submit semi-annual reports to the trustee describing the process of implementing each eligible mitigation action included in the funding requests. These reports will include the status of each project and updates on payments to grantees and agency administrative costs.	Jan. 2020-Aug. 2022
Upon confirmation of payment, Awardee begins commitment to operate the new equipment in the Priority Areas at least 51% of the equipment's total annual miles of operation.	Jan. 2020- Aug. 2027

<sup>1</sup> Dates are approximate and may vary depending on the volume of applications received and awarded.

### II. Project Budget

Budget Category	Total Requested Budget
Project Expenditures	\$20,947,420.50
Administrative Expenditures	\$837,897
<b>Total</b>	<b>\$21,785,317.50</b>

### III. Project Cost Share

Awardee Type	Project Type	% of Awardee Cost Share <sup>1</sup>
Government	Replacements and Repowers	≥ 20%
Non-Government	Replacement-Electric	≥ 50%
Non-Government	Replacement-Diesel or Alt. Fuel	≥ 75%
Non-Government	Repower-Electric	≥ 50%
Non-Government	Repower-Diesel or Alt. Fuel	≥ 40%

<sup>1</sup> The percentage of the cost share to be paid by the awardee is applied to each repower or replacement activity included in a contract.



## Attachment C to Appendix D-4: Detailed Plan for Reporting on Eligible Mitigation Action Implementation

**1. Purpose:** The Texas Volkswagen Environmental Mitigation Program (TxVEMP) is preparing to open the second round of funding for projects to replace or repower class 7 and 8 vehicles configured to collect and transport municipal solid waste (refuse vehicles). Class 7 and 8 refuse vehicles fall under two separate eligible mitigation action categories, Class 8 Local Freight Trucks and Port Drayage Trucks (large trucks) and Class 4-7 Local Freight Trucks (medium trucks). The Texas Commission on Environmental Quality (TCEQ) plans to submit a D-4 for each category. However, eligible class 7 and 8 refuse vehicles will be solicited under one Request for Grant Applications. Electric and hydrogen infrastructure may also be included in a project application for charging or refueling all-electric or hydrogen-fuel cell replacement and repower vehicles included in the project.

### 2. Program Criteria

- a. **Eligible Applicants:** Eligible applicants under the TxVEMP must operate class 8 refuse vehicles at least 51% of the vehicle's annual mileage in one of the Priority Areas.
- b. **Refuse vehicles being replaced or repowered must:**
  - have a gross vehicle weight rating greater than 26,001 lbs.;
  - be powered by a diesel engine of model year 1992- 2009;
  - be configured for the collection and transport of municipal solid waste;
  - be considered capable of performing its primary function for the next five years;
  - been continuously inspected and registered in Texas for the two years immediately preceding the application signature date;
  - been used routinely by the applicant in Texas for the two years immediately preceding the application signature date; and
  - been owned by the applicant at the time of application and for the two years immediately preceding the application signature date.
- c. **New refuse vehicles must:**
  - be powered by electricity, diesel, or an alternative fuel (e.g., CNG, propane, hybrid);
  - have an engine model year not more than one year older than the year the application is submitted;
  - be certified by the EPA or CARB to a NO<sub>x</sub> emissions standard or family emissions limit (FEL) of 0.2 g/bhp-hr or lower; and
  - be of the same type, weight category, and body and axle configuration as the vehicle being replaced.
- d. **Activity life and usage commitment:** The applicant must commit to use the grant-funded vehicle at least 51% of the vehicle's annual miles of operation in one of the Priority Areas for the duration of the five-year activity life. Annual reports on the use of the grant-funded vehicles and equipment will not be required. However, the grant recipient must agree to provide information on the use of the vehicles and equipment upon request by the TCEQ.
- e. **Eligible grant amounts will be the lesser amount of:**
  - (i) the predetermined grant amount set by the TCEQ for that type of activity; or
  - (ii) the maximum percentage of eligible costs for the actual, eligible expenditures.

**3. Application Review and Selection:** Eligible projects will be processed for approval on a first-come, first-served basis. Applicants may apply for the replacement or repower of up to 20 vehicles per Priority Area, either in one application or multiple applications, every three months.

### 4. Outreach

- a. **Program Documents:** Program documents will be available on the TxVEMP website once the round has officially opened to the public. Documents have been drafted in accordance with accessibility standards and are available in a fillable PDF format.
- b. **Program Notifications:** Notifications will be provided on the status of grant rounds through the TxVEMP email list serve and official agency press releases.
- c. **Application workshops:** TxVEMP staff will conduct application workshops in each of the Priority Areas. Webinars will also be provided for interested parties who are unable to attend a live workshop.
- d. **Funds availability status:** TxVEMP staff will regularly update a report provided on the TxVEMP website to update interested parties on the availability of funding under the first round.
- e. **Project Summaries:** TxVEMP staff will provide a monthly project summary report on the TxVEMP website. The report will include project descriptions, awarded grant amounts, and project emissions reductions.

**Attachment D to D-4: Detailed cost estimates from selection or potential vendors for each proposed expenditure exceeding \$25,000 (5.2.6).**

Attached tables show the amount a grantee could be eligible to receive for each vehicle type.

# Garbage and Recycling Trucks

## Government Replacement or Repower Projects

			Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$185,061	\$105,919	\$87,672	\$63,314	\$38,956	\$14,598
	CI	0.02	\$185,061	\$109,529	\$92,065	\$68,805	\$45,587	\$22,327
	SI	0.2	\$277,694	\$158,937	\$131,556	\$95,006	\$58,455	\$21,905
	SI	0.02	\$277,694	\$164,354	\$138,148	\$103,246	\$68,405	\$33,503

## Non-Government Replacement Projects

			Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$57,832	\$33,100	\$27,398	\$19,786	\$12,174	\$4,562
	CI	0.02	\$57,832	\$34,228	\$28,770	\$21,502	\$14,246	\$6,977
	SI	0.2	\$86,780	\$49,668	\$41,111	\$29,689	\$18,267	\$6,845
	SI	0.02	\$86,780	\$51,361	\$43,171	\$32,265	\$21,377	\$10,470

<sup>1</sup>Ignition Types are as follows: CI = Compression-Ignition (e.g., Diesel), SI = Spark-Ignition (e.g., LPG, CNG), Zero = Zero emission vehicle (e.g., electric).

<sup>2</sup>The 0.2 g/bhp-hr NO<sub>x</sub> emission rate is the current EPA federal standard for new on-road heavy-duty vehicles. The 0.02 g/bhp-hr NO<sub>x</sub> emission rate is an optional California low-NO<sub>x</sub> standard.

<sup>3</sup>The 2010 EPA NO<sub>x</sub> emission rate standard for heavy-duty, compression ignition, on-road vehicles was phased-in from 2007 thru 2010. Engines produced during these years may have a range of NO<sub>x</sub> emission rates. If the EPA certified emission rate for an engine manufactured between 2007 and 2009 falls between one of the NO<sub>x</sub> emission rate values listed on the table, round up to the nearest listed value for the purposes of determining an eligible grant amount.

# Garbage and Recycling Trucks

## Non-Government Repower Projects

			Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$92,530	\$52,959	\$43,836	\$31,657	\$19,478	\$7,299
	CI	0.02	\$92,530	\$54,764	\$46,032	\$34,402	\$22,793	\$11,164
	SI	0.2	\$138,847	\$79,468	\$65,778	\$47,503	\$29,228	\$10,952
	SI	0.02	\$138,847	\$82,177	\$69,074	\$51,623	\$34,203	\$16,752

<sup>1</sup>Ignition Types are as follows: CI = Compression-Ignition (e.g., Diesel), SI = Spark-Ignition (e.g., LPG; CNG), Zero = Zero emission vehicle (e.g., electric).

<sup>2</sup>The 0.2 g/bhp-hr NO<sub>x</sub> emission rate is the current EPA federal standard for new on-road heavy-duty vehicles. The 0.02 g/bhp-hr NO<sub>x</sub> emission rate is an optional California low-NO<sub>x</sub> standard.

<sup>3</sup>The 2010 EPA NO<sub>x</sub> emission rate standard for heavy-duty, compression ignition, on-road vehicles was phased-in from 2007 thru 2010. Engines produced during these years may have a range of NO<sub>x</sub> emission rates. If the EPA certified emission rate for an engine manufactured between 2007 and 2009 falls between one of the NO<sub>x</sub> emission rate values listed on the table, round up to the nearest listed value for the purposes of determining an eligible grant amount.

# Roll-Off Trucks

## Government Replacement or Repower Projects

			Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$143,695	\$82,243	\$68,075	\$49,161	\$30,248	\$11,335
	CI	0.02	\$143,695	\$85,047	\$71,486	\$53,425	\$35,397	\$17,337
	SI	0.2	\$222,856	\$127,551	\$105,577	\$76,244	\$46,912	\$17,579
	SI	0.02	\$222,856	\$131,898	\$110,867	\$82,857	\$54,897	\$26,887

## Non-Government Replacement Projects

			Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$44,905	\$25,701	\$21,273	\$15,363	\$9,453	\$3,542
	CI	0.02	\$44,905	\$26,577	\$22,339	\$16,696	\$11,062	\$5,418
	SI	0.2	\$69,642	\$39,859	\$32,993	\$23,826	\$14,660	\$5,493
	SI	0.02	\$69,642	\$41,218	\$34,646	\$25,893	\$17,155	\$8,402

<sup>1</sup>Ignition Types are as follows: CI = Compression-Ignition (e.g., Diesel), SI = Spark-Ignition (e.g., LPG, CNG), Zero = Zero emission vehicle (e.g., electric).

<sup>2</sup>The 0.2 g/bhp-hr NO<sub>x</sub> emission rate is the current EPA federal standard for new on-road heavy-duty vehicles. The 0.02 g/bhp-hr NO<sub>x</sub> emission rate is an optional California low-NO<sub>x</sub> standard.

<sup>3</sup>The 2010 EPA NO<sub>x</sub> emission rate standard for heavy-duty, compression ignition, on-road vehicles was phased-in from 2007 thru 2010. Engines produced during these years may have a range of NO<sub>x</sub> emission rates. If the EPA certified emission rate for an engine manufactured between 2007 and 2009 falls between one of the NO<sub>x</sub> emission rate values listed on the table, round up to the nearest listed value for the purposes of determining an eligible grant amount.

# Roll-Off Trucks

## Non-Government Repower Projects

			Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$71,848	\$41,122	\$34,038	\$24,581	\$15,124	\$5,667
	CI	0.02	\$71,848	\$42,524	\$35,743	\$26,713	\$17,698	\$8,668
	SI	0.2	\$111,428	\$63,775	\$52,788	\$38,122	\$23,456	\$8,790
	SI	0.02	\$111,428	\$65,949	\$55,433	\$41,429	\$27,448	\$13,444

<sup>1</sup>Ignition Types are as follows: CI = Compression-Ignition (e.g., Diesel), SI = Spark-Ignition (e.g., LPG, CNG), Zero = Zero emission vehicle (e.g., electric).

<sup>2</sup>The 0.2 g/bhp-hr NO<sub>x</sub> emission rate is the current EPA federal standard for new on-road heavy-duty vehicles. The 0.02 g/bhp-hr NO<sub>x</sub> emission rate is an optional California low-NO<sub>x</sub> standard.

<sup>3</sup>The 2010 EPA NO<sub>x</sub> emission rate standard for heavy-duty, compression ignition, on-road vehicles was phased-in from 2007 thru 2010. Engines produced during these years may have a range of NO<sub>x</sub> emission rates. If the EPA certified emission rate for an engine manufactured between 2007 and 2009 falls between one of the NO<sub>x</sub> emission rate values listed on the table, round up to the nearest listed value for the purposes of determining an eligible grant amount.

# Dump Trucks

## Government Replacement or Repower Projects with Optional Electric Infrastructure

			Engine Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$126,294	\$72,284	\$59,831	\$43,208	\$26,585	\$9,962
	CI	0.02	\$126,294	\$74,748	\$62,829	\$46,956	\$31,110	\$15,237

## Non-Government Replacement Projects

			Engine Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$39,467	\$22,589	\$18,697	\$13,502	\$8,308	\$3,113
	CI	0.02	\$39,467	\$23,359	\$19,634	\$14,674	\$9,722	\$4,762

## Non-Government Repower Projects

			Engine Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$63,147	\$36,142	\$29,916	\$21,604	\$13,293	\$4,981
	CI	0.02	\$63,147	\$37,374	\$31,414	\$23,478	\$15,555	\$7,619

<sup>1</sup>Ignition Types are as follows: CI = Compression-Ignition (e.g., Diesel), SI = Spark-Ignition (e.g., LPG, CNG), Zero = Zero emission vehicle (e.g., electric).

<sup>2</sup>The 0.2 g/bhp-hr NO<sub>x</sub> emission rate is the current EPA federal standard for new on-road heavy-duty vehicles. The 0.02 g/bhp-hr NO<sub>x</sub> emission rate is an optional California low-NO<sub>x</sub> standard.

<sup>3</sup>The 2010 EPA NO<sub>x</sub> emission rate standard for heavy-duty, compression ignition, on-road vehicles was phased-in from 2007 thru 2010. Engines produced during these years may have a range of NO<sub>x</sub> emission rates. If the EPA certified emission rate for an engine manufactured between 2007 and 2009 falls between one of the NO<sub>x</sub> emission rate values listed on the table, round up to the nearest listed value for the purposes of determining an eligible grant amount.

# Grapple Trucks

## Government Replacement or Repower Projects

			Engine Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$134,842	\$77,176	\$63,881	\$46,133	\$28,385	\$10,636
	CI	0.02	\$134,842	\$79,807	\$67,081	\$50,134	\$33,216	\$16,268

## Non-Government Replacement Projects

			Engine Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$42,138	\$24,118	\$19,963	\$14,416	\$8,870	\$3,324
	CI	0.02	\$42,138	\$24,940	\$20,963	\$15,667	\$10,380	\$5,084

## Non-Government Repower Projects

			Engine Model Year and Emission Standard of Old Vehicle <sup>3</sup>					
Old Ignition Type <sup>1</sup>	New Ignition Type <sup>1</sup>	New Emission Rate <sup>2</sup> (g/bhp-hr)	<2002-2003	2004-2007	2007-2009 2.0 (g/bhp-hr)	2007-2009 1.5 (g/bhp-hr)	2007-2009 1.0 (g/bhp-hr)	2007-2009 0.5 (g/bhp-hr)
CI	CI	0.2	\$67,421	\$38,588	\$31,940	\$23,066	\$14,192	\$5,318
	CI	0.02	\$67,421	\$39,903	\$33,541	\$25,067	\$16,608	\$8,134

<sup>1</sup>Ignition Types are as follows: CI = Compression-Ignition (e.g., Diesel), SI = Spark-Ignition (e.g., LPG, CNG), Zero = Zero emission vehicle (e.g., electric).

<sup>2</sup>The 0.2 g/bhp-hr NO<sub>x</sub> emission rate is the current EPA federal standard for new on-road heavy-duty vehicles. The 0.02 g/bhp-hr NO<sub>x</sub> emission rate is an optional California low-NO<sub>x</sub> standard.

<sup>3</sup>The 2010 EPA NO<sub>x</sub> emission rate standard for heavy-duty, compression ignition, on-road vehicles was phased-in from 2007 thru 2010. Engines produced during these years may have a range of NO<sub>x</sub> emission rates. If the EPA certified emission rate for an engine manufactured between 2007 and 2009 falls between one of the NO<sub>x</sub> emission rate values listed on the table, round up to the nearest listed value for the purposes of determining an eligible grant amount.