

# IOWA'S 2019

## DIESEL EMISSION REDUCTION ACT (DERA)



# GRANT PROGRAM INFORMATION GUIDE

## Summary

The Iowa Department of Transportation (Iowa DOT) is soliciting proposals from eligible entities for participation in the State of Iowa’s federal fiscal year (FFY) 2019 Diesel Emissions Reduction Program (DERA) in Iowa. This document provides information on who is eligible to apply for funding, eligible vehicles, projects, funding and match requirements, information on how to apply, the timeline of events, and evaluation criteria and scoring.

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## DERA Grant Program Overview

The DERA in the Energy Policy Act of 2005 authorizes the U.S. Environmental Protection Agency (EPA) to support grant, rebate, and loan programs administered by eligible states and territories that are designed to achieve significant reductions in diesel emissions. In accordance with DERA, EPA makes 30 percent of the annual allocation available to eligible states and territories in the form of assistance agreements under the State Clean Diesel Grant Program.

Two-thirds of the state portion of funding is provided to participating states and territories, while the remaining third is used as an incentive to those states and territories that provide a voluntary match equal to the base funding. If a state/territory provides a voluntary match equal to the base allocation offered by EPA, EPA will provide a matching incentive equal to 50 percent of the base allocation.

In FFY 2019, Iowa received a base allocation of \$319,050. Iowa is voluntarily matching the base amount with monies from the Iowa Volkswagen Settlement Environmental Mitigation Trust program. Therefore, the EPA provided an additional 50 percent to the base allocation, bringing Iowa's total 2019 DERA allocation to \$797,625.

FUNDING SOURCES	AMOUNT
EPA Base Allocation	\$319,050
Iowa's Voluntary Match for Bonus	\$319,050
EPA Matching Incentive Bonus	\$159,525
<b>TOTAL</b>	<b>\$797,625</b>

### Eligible Entities

FFY 2019 DERA grant funding is available for profit, nonprofit, and public entities that own or operate diesel fleets and equipment in any of the 99 counties in the state of Iowa.

### Ineligible Entities

Federal and state government agencies and employees are not eligible to receive funding from Iowa's 2019 DERA Grant Program. Ineligible applicants also include entities or individuals that are currently suspended or debarred by the State of Iowa or the federal government.

## Eligible Projects

A broad range of diesel emission reduction solutions are eligible for DERA grant funding. Projects must include one or more of the following diesel emission reduction solutions that utilize a certified engine configuration and/or a verified technology:

1. Diesel Engine Retrofit Technologies
2. Engine Upgrades and Remanufacture Systems
3. Cleaner Fuels and Additives
4. Idle Reduction Technologies
5. Aerodynamic Technologies Verified Low Rolling Resistance Tires
6. Engine Replacement
7. Vehicle and Equipment Replacements
8. Clean Alternative Fuel Conversions

Eligible on-road or non-road vehicles and equipment may include:

- School buses (of Type A, B, C, and D);
- Medium-duty and Heavy-duty Transit Buses (defined as Class 5 through Class 8);
- Medium-duty or Heavy-duty Trucks (defined as Class 5 through Class 8);
- Marine Engines (operating at least 1000 hours per year);
- Locomotives (operating at least 1000 hours per year);
- Nonroad engines, equipment, or vehicles used in:
  - Construction;
  - Handling of cargo (including at a port or airport);
  - Agriculture;
  - Mining; or
  - Energy production (including stationary generators or pumps)

Engine, vehicle, and equipment replacement projects are eligible for funding on the condition that the following criteria are satisfied:

1. To be eligible for replacement, the replaced vehicle, engine or equipment must be fully operational and in current, regular service.
2. The replacement vehicle, engine, or equipment will continue to perform similar function and operation as the vehicle, engine, or equipment that is being replaced.
3. The replacement vehicle, engine, or equipment will be of similar type and gross vehicle weight rating or horsepower as the vehicle, engine, or equipment being replaced.
  - a. Nonroad: Horsepower increases of more than 25 percent will require specific approval by EPA prior to purchase, and the applicant may be required to pay the additional costs associated with the higher horsepower equipment.
  - b. Highway: The replacement vehicle must not be in a larger weight class than the existing vehicle. The engine's primary intended service class must match the vehicles weight class

4. The vehicle, equipment, and/or engine being replaced must be scrapped and rendered permanently disable within ninety (90) days of being replaced. (See Scrapping of Vehicles and Equipment for more information)

### **Ineligible Projects**

Funding is not available for the following projects:

- Emissions testing: No funds awarded under this program shall be used for emissions testing and/or air monitoring activities (including the acquisition cost of emissions testing equipment), or research and development.
- Fueling infrastructure: No funds awarded under this program shall be used for fueling infrastructure, such as that used for the production and/or distribution of biodiesel, compressed natural gas, liquefied natural gas, or other fuels.
- Mandated measures: No funds under this program shall be used to fund the costs of emissions reductions that are mandated under federal law.
- Fleet expansion: Funding under this program cannot be used for the purchases of vehicles, engines, or equipment to expand a fleet.
- Single Wide Wheels: No funds awarded under this program shall be used for the purchase of single-wide wheels except where a fleet is retrofitting from standard dual tires to SmartWay-verified single-wide low rolling resistance tires.
- Auxiliary Power Units: No funds awarded under this program shall be used for the purchase of APUs or generators for vehicles with engine model year 2007 or newer.
- Replacement technologies: No funds awarded under this program shall be used for the purchase of engine retrofits, idle reductions technologies, low rolling resistance tires or advanced aerodynamic technologies if similar technologies have previously been installed on the truck or trailer.
- Non-road operating hours: No funds awarded under this program shall be used to retrofit, replace, or upgrade agricultural pumps that operate less than 250 hour per year or retrofit, replace, or upgrade a non-road engine that operates less than 500 hours per year.
- Locomotive and marine operating hours: No funds awarded under this program shall be used to retrofit, replace, upgrade, or install idle reduction technologies locomotive or marine engines that operate less than 1,000 hours per year.

A comprehensive list of eligible and ineligible projects can be found in Appendix A.

## **Funding and Cost-Share Requirements**

The Iowa DOT anticipates awarding approximately \$797,625 during the FY 2019 DERA grant program and will be providing participant support costs (e.g., rebate) to fund participating project partners equipment and installation costs. The participating project partners will own the new vehicle, engine, or technology.

### **Costs Eligible for Reimbursement**

Costs directly incurred by a participating project partner through the purchase and/or installation of eligible technologies, equipment, and vehicles after the execution of a project funding agreement are eligible for reimbursement. These costs may include the procurement of goods and services from vendors and contractors as well as labor costs incurred by the applicant's employees for installation. All costs must be supported by appropriate documentation. The Iowa DOT retains the sole authority to determine eligible project costs.

### **Costs Ineligible for Reimbursement**

Funds awarded by this program cannot be used for administrative costs, lobbying, or for the intervention in federal regulatory or adjudicatory proceedings. Costs incurred prior to the execution of the project funding agreement are also ineligible project costs and will not be reimbursed.

Participating project partners will receive reimbursement for eligible equipment and installation costs incurred up to the maximum dollar amount or percentage of total costs listed in the project funding agreement. No costs to be reimbursed may be incurred prior to the execution of the project funding agreement. A cost is considered incurred if it has been ordered, contracted, purchased, or installed. Requests for reimbursement shall be in a manner as required by the Iowa DOT and must include documentation to show that the technology and/or equipment has been received, installed, and accepted by the project sponsor; that vehicle and/or engine scrapping (if required according to this guidance) has occurred, all requirements of the project funding agreement have been met, and that the costs have been incurred and paid by the project sponsor.

### **Cost-Share Requirements**

Mandatory cost-shares are required for all projects that are not eligible for 100 percent reimbursement. Projects involving engine upgrades, certain idle reduction technologies, shore connection systems, electrified parking space technologies, certified engine replacements, or certified vehicle /equipment replacements (as defined in Appendix A) are subject to the DERA funding limits and mandatory cost-share requirements shown in the table below.

The "DERA Funding Limits" (percentages) shown below represent the maximum portion of the equipment costs (parts and labor) that can be covered with a combination of EPA DERA funds and any non-federal voluntary matching funds provided by Iowa DOT. The portion of the costs that exceed the DERA funding limits is referred to as the "mandatory cost-share" and is provided by the participating project partner (e.g. fleet owner). Mandatory cost-shares must be

monetary and federal funds for other federal grants may not be used. The Iowa DOT will reimburse organizations, dependent on their project, up to the percentages outlined in the following table:

**DERA Funding Limits and Mandatory Cost-Share Requirements for Eligible Activities**

DERA ELIGIBLE ACTIVITIES	DERA FUNDING LIMITS	MINIMUM COST-SHARE (FLEET OWNER CONTRIBUTION)
Exhaust Control Retrofit	100%	0%
Engine Upgrade/Remanufacture	40%	60%
Highway Idle Reduction bundled with Exhaust Control Retrofit	100%	0%
Stand-alone Highway Idle Reduction	25%	75%
Locomotive Idle Reduction	40%	60%
Marine Shore Power	25%	75%
Electrified Parking Space	30%	70%
Engine Replacement – Diesel or Alternative Fuel	40%	60%
Engine Replacement – Low NOx*	50%	50%
Engine Replacement – Zero Emission	60%	40%
Vehicle/Equipment Replacement – Diesel or Alternative Fuel	25%	75%
Vehicle/Equipment Replacement – Low NOx*	35%	65%
Vehicle/Equipment Replacement – Zero Emission	45%	55%
Vehicle Replacement - Drayage	50%	50%
Clean Alternative Fuel Conversion	40%	60%

\*Low NOx = Certified to CARB’s Optional Low-NOx Standards. Certified engines may be found by searching CARB’s Heavy-Duty Low NOx website at: <https://arb.ca.gov/msprog/hdlownox/hdlownox.htm>.

**Funding Restrictions**

Funds awarded by the Iowa DOT cannot be used to:

- Match federal funds: No funds awarded under this program shall be used for matching funds for other federal grants. Likewise, a recipient may not use federal funds as matching or cost-share funds for the DERA program, including funds received under EPA’s National Clean Diesel Emissions Reductions Programs and federal Supplemental Environmental Project funds.
- Cover expenses incurred prior to the project period. No funds awarded under this program shall be used to cover expenses incurred prior to the project period set forth in

the project funding agreement. Additionally, expenses incurred prior to the project period set forth in the project funding agreement are not eligible as a cost-share.

### **Disqualification from Funding**

The applicant shall not receive reimbursement if complete and truthful information has not been submitted to the Iowa DOT. The applicant will be disqualified and shall not receive reimbursement if the applicant has:

- Not scrapped the engine replaced by engine repowers or vehicle replacement as required by this guidance and the executed project funding agreement,
- Not submitted a claim for reimbursement and all required documentation by the deadline included in the project funding agreement,
- Altered equipment or vehicles in such a way that results in the release of more diesel exhaust than the original condition of the equipment or vehicles, or
- Incurred costs prior to the execution of the agreement.
- Not used a competitive process for obtaining contracts for products and services as applicable to federal, state, local, or internal procurements requirements.

### **Evaluation of Applications**

The Iowa DOT will evaluate applications on a competitive basis. While the scoring criteria provided below are the primary means of determining a selected project, Iowa DOT may also consider other factors not included in these scoring criteria in making the final selection of projects. The following criteria, in no particular order, may be used to evaluate projects:

- Completeness of application;
- Number of registered Volkswagen vehicles in the county of the project (due to Iowa's choice to use monies from the Volkswagen Environmental Mitigation Trust Fund to match EPA's base allocation);
- Mobile source air pollution in areas of concern;
- Emission reduction estimates for nitrogen oxides, particulate matter, volatile organic compounds, and carbon monoxides;
- Impacts of diesel emissions on sensitive populations related to human health (rate of asthma and rate of heart disease), environment (ozone), global climate (carbon dioxides) and areas of vulnerable populations;
- Priority county locations as noted in the 2019 Priority County List (air quality concerns);
- Cost effectiveness of nitrogen oxide emission reduction (dollars per amount of nitrogen oxide emissions reduced)
- Applicants demonstration of previous efforts to reduce air pollution and existing policy and procedures;



## **Award Timeline and Requirements**

All applicants will be notified regarding their award status at the conclusion of the funding cycle. Applicants selected to receive funding will be required to execute a project funding agreement with the Iowa DOT. Execution of the agreement is expected to be completed in October 2019. If the apparent successful applicant fails to deliver an executed agreement within 30 days of receipt, the Iowa DOT, at its sole discretion, may cancel the award and award the funds to another applicant.

Upon execution of the agreement by the Iowa DOT, a copy of the fully executed agreement will be returned to the applicant, at which time the funding will be considered awarded. The project, including the purchase of technology, may not occur prior to the execution of the agreement.

## **Agreement Terms**

Applicants interested in applying for funding should consider the following items that will be part of the requirements addressed in the agreement:

- All projects must be completed by August 30, 2020. All services or work must be completed within the scope, time frame, and funding limitation specified by the agreement.
- Applicants will be required to submit quarterly and final reports to the Iowa DOT.
- The claim for reimbursement of costs and all required documentation is due to the Iowa DOT within one month after the completion of the project. The Iowa DOT will not reimburse the applicant until all requirements are met. Under no circumstances will reimbursement be made for costs incurred prior to the execution of the agreement. Applicants should expect to allow a minimum of 90 days for reimbursement processing.
- Applicants will be required to complete pre-testing of all vehicles being considered for exhaust control devices to verify that the technology can indeed be placed on the vehicle.
  - If pre-testing has been completed for other reasons prior to the start of the project, pre-testing requirements will be waived if the applicant can provide results showing that the vehicle passed.
  - If a diesel particulate filter (DPF) is the exhaust control technology being used, all vehicles will be required to have the exhaust temperature data logged on the vehicle.
- Applicants will be required to use an open and fair competitive process for obtaining products and services. Copies of the process and documents will be provided to the Iowa DOT.
- Receipts for reimbursement are due to the Iowa DOT by September 15, 2020. The Iowa DOT will reimburse the approved expenses after the entire project has been completed as outlined in the contract. Under no circumstances will reimbursement payments be issued for expenses incurred prior to the date of the execution of the agreement. Allow a minimum of 90 days for reimbursement processing.

- A vehicle, equipment, and/or engine being replaced must be scrapped or rendered permanently disabled.

### **Scrapping of Vehicles or Equipment**

The vehicle, equipment, and/or engine being replaced must be scrapped or rendered permanently disabled within ninety (90) days of being replaced. Scrapping requirements are:

- Cutting a three-inch by three-inch hole in the engine block (the part of the engine containing the cylinders) is the preferred scrapping method.
- Disabling the chassis may be completed by cutting through the frame/frame rails on each side at a point located between the front and rear axles
- Evidence of appropriate disposal is required to be submitted to the Iowa DOT and includes digital photos of the engine tag (showing serial number, engine family number, and engine model year), the destroyed engine block, and cut frame rails or other cut structural components as applicable. Evidence also includes a signed certificate of destruction.
- Equipment and vehicle components that are not part of the chassis or engine may be salvaged or scrapped. If scrapped or salvaged engines, vehicles, equipment, or parts are to be sold, program income requirements apply.
- For tire replacement projects, the original tires should be scrapped according to local or state requirements, or the tires can be salvaged for reuse or retreading. If salvaged tires are sold, program income requirements apply

### **How to Apply**

Applicants may apply for funds for more than one DERA project. However, no applicant may request funds for more than one reduction strategy in a single grant application, unless the reduction strategy cannot be funded as a stand-alone project, such as cleaner fuels and additives or aerodynamic technologies and verified low rolling resistance tires. To be considered for this funding opportunity, please submit the following application materials, which can be found at <http://www.iowadot.gov/DERA>.

- DERA 2019 Application Form
- DERA 2019 Fleet Description Form
- DERA 2019 Project Costs Form
- DERA 2019 Certification Form
- Minority Impact Statement

**Compete applications are due by email, before 5:00 pm CST on September 16, 2019.**

Applications received after the deadline will be deemed ineligible and not reviewed. Incomplete applications may be disqualified from consideration. The Iowa DOT is not responsible for any errors or delays by technical difficulties resulting from the emailing of applications.

Submit the signed, completed application packet (application form, signed certification, fleet description form, project costs form, and minority impact statement) in the Word or Excel format downloaded, to [Zachary.bitting@iowadot.us](mailto:Zachary.bitting@iowadot.us) with the subject line: “**DERA GRANT 2019.**”

### **Application Questions**

Questions or requests for clarification about the grant program may be submitted in writing to Zac Bitting via email at [Zachary.bitting@iowadot.us](mailto:Zachary.bitting@iowadot.us); with the subject line “**DERA 2019 Question.**” If the questions or requests for clarification pertain to a specific section of this guidance document, please reference the page number and section.

The Iowa DOT reserves the right to amend this guidance at any time using an addendum. If the addendum occurs after the closing date for receipt of applications, the Iowa DOT may, in sole discretion, allow applicants to amend their project applications in response to the Iowa DOT’s addendum, if necessary.

### **Amendment or Withdrawal of an Application**

Applicants may withdraw or amend and resubmit project applications at any time before the deadline. The amended proposal or application withdrawal must be in writing, signed by the applicant and received **before 5:00 pm CST on September 16, 2019.**

### **Iowa DOT Discretion**

The Iowa DOT may select part of an application for funding and/or may offer to fund less than the dollar amount requested in an application. The Iowa DOT reserves the right to reject any or all applications, in whole or in part, any time prior to the execution of a project funding agreement.

The Iowa DOT is not obligated to fund an application from an applicant that has demonstrated marginal or unsatisfactory performance on previous grants or contracts with the Iowa DOT or other state agencies.

The Iowa DOT reserves the right to verify information contained in the application. This may include utilizing publicly available information and other outside sources to evaluate the applicant’s performance under other contracts.

### **Disqualification of Applications**

The Iowa DOT may reject outright and may not evaluate applications for any one of the following reasons:

- The applicant fails to deliver the application by the due date and time.
- The applicant acknowledges that a requirement of the application cannot be met.
- The applicant’s proposal materially changes a requirement of this guidance or the proposal is not compliant with the requirements of this guidance.
- The applicant’s proposal limits the rights of the Iowa DOT.

- The applicant fails to timely respond to the Iowa DOT's request for information, documents, or references.
- The applicant fails to include an original signature.
- The applicant presents the information requested by this guidance in a format inconsistent with the instructions of the guidance or otherwise fails to comply with the requirements of the guidance.
- The applicant provides misleading or inaccurate responses.
- There is insufficient evidence (including evidence submitted by the applicant and evidence obtained by the Iowa DOT from other sources) to satisfy the Iowa DOT that the applicant is properly qualified to satisfy the requirements of the guidance or application.
- The proposed project(s) are not in compliance with applicable state and federal statutes and rules.

### **Process for Clarification of Application Information**

The Iowa DOT reserves the right to contact an applicant after the submission of an application for the purpose of clarifying the application to ensure mutual understanding. The Iowa DOT will not consider information received if the information materially alters the content of the application or alters the type of project the applicant is proposing. Failure to comply with requests for additional information may result in rejection of the application as non-compliant.

### **Disposition of Applications and Copyrights**

All applications become the property of the Iowa DOT and shall not be returned to the applicant at the conclusion of the selection process. The contents of all applications will be in the public domain and be open to inspection by interested parties subject to exceptions provided in Iowa Code Chapter 22 or other applicable laws.

The applicant agrees that the Iowa DOT may copy the application for purposes of facilitating the evaluation of the application or to respond to requests for public records. By submitting an application, the applicant consents to such copying and warrants that such copying will not violate the rights of any third party.

## Appendix A: Eligible Projects

Additional information regarding the diesel emission reduction solutions listed below can be found at [nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100WK7X.pdf](https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100WK7X.pdf)

### 1. Diesel Engine Retrofit Technologies

Diesel engine retrofits include pollution control devices installed in the exhaust system, such as diesel oxidation catalysts (DOCs) and diesel particulate filters (DPFs), or systems that include closed crankcase ventilation filtration systems. These are one of the most cost-effective solutions reducing diesel engine emissions.

Funding Restrictions: This funding can cover up to 100% of the cost (labor and equipment) for an eligible verified diesel engine retrofit technology.

- The eligible cost of retrofits includes the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional, including related labor expenses. Examples of eligible retrofit costs include, but are not limited to: DPF cleaning machines, spare DPFs for maintenance rotation, replacement CCV filters, mechanic training, and filter cleaning contracts.

The type(s) (e.g., DOC, DPF, etc.) of diesel engine retrofits technology being proposed must be included on the list of EPA verified diesel engine retrofit technologies ([www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel](https://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel)) or California Air Resources Board (CARB) verified diesel engine retrofit technologies ([www.arb.ca.gov/diesel/verdev/vt/cvt.htm](https://www.arb.ca.gov/diesel/verdev/vt/cvt.htm)) for the specific vehicle/engine application specified at the time of application submission to the Iowa DOT. The actual engine retrofit technologies used by the grant recipient must be specifically named on EPA or CARB's Verified Technologies lists at the time of acquisition and used only for the vehicle/engine applications specified on the list, to be eligible for funding.

If DPF is the diesel engine retrofit technology being proposed, it is highly recommended that the applicant consult with retrofit suppliers to confirm that the proposed vehicles/engines and their duty-cycles are good candidates for DPFs.

Please see Table 1 for additional information on the eligibility of verified diesel engine retrofit technologies for medium and heavy-duty trucks, transit buses, and school buses.

Please see Table 5 for additional information on the eligibility of verified diesel engine retrofit technologies for locomotive engines.

### 2. Engine Upgrades and Remanufacture Systems

Generally, an engine upgrade involves the removal of parts on an engine during a rebuild and replacement with parts that cause the engine to represent an engine configuration which is cleaner than the original engine.

Some nonroad and marine engines can be upgraded to reduce their emissions by applying manufacturer upgrades that are diesel engine retrofits currently verified by EPA or CARB as a package of components demonstrated to achieve specific levels of emissions reductions. Some locomotives and marine engines can be upgraded through the application of a certified remanufacture system that is used to rebuild the engine to represent a cleaner engine configuration. Engine upgrades may not be available for all engines, and not all upgrades may achieve an emissions benefit.

Applications for upgrades should include a discussion of the availability of engine upgrade kits/systems and indicate the pre-and post-project emission standard levels of the engines to demonstrate that the upgrade will result in a significant emissions benefit.

**Funding Restrictions:** This funding can cover up to 40% of the cost (labor and equipment) of an eligible nonroad, locomotive or marine engine upgrade. To be eligible for funding, the upgrade must either be a verified retrofit as described above, or a certified remanufacture system that will result in a significant emissions benefit by rebuilding the engine to a cleaner engine configuration. For an engine to be eligible for an upgrade, the engine must be currently operating and performing its intended function. If a certified remanufacture system for a locomotive includes a full engine replacement, the following criteria applies:

- The current engine must be fully operational and in current, regular service
- The replacement engine must continue to perform similar function and operation as the engine that is being replaced
- The replacement engine will be of similar type and horsepower as the engine being replaced
- The engine being replaced must be scrapped or rendered permanently disabled.

If a certified remanufacture system is applied at the time of rebuild, funds under this award cannot be used for the entire cost of the engine rebuild, but only for the cost of the certified remanufacture system and associated labor costs for installation.

A list of eligible, EPA verified engine upgrade technologies is available at: [www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel](http://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel). Lists of certified remanufacture systems for locomotives and marine engines are available at: [www.epa.gov/compliance-and-fuel-economy-data/engine-certification-data](http://www.epa.gov/compliance-and-fuel-economy-data/engine-certification-data), and additional information on remanufacture systems, are available at [www.epa.gov/vehicle-and-engine-certification/remanufacture-systems-category-1-and-2-marine-diesel-engines](http://www.epa.gov/vehicle-and-engine-certification/remanufacture-systems-category-1-and-2-marine-diesel-engines).

Engine upgrades proposed for funding under this category must exist on one of these lists for the specific vehicle/engine application specified in the application at the time of application submission to the Iowa DOT.

Please see Table 3 for additional information on the eligibility of verified engine upgrades for nonroad engines.

Please see Table 4 for additional information on the eligibility of engine upgrades and remanufacture systems for marine engines.

Please see Table 5 for additional information on the eligibility of certified remanufacture system for locomotive engines.

### **3. Cleaner Fuels and Additives**

Eligible cleaner fuels and additives are limited to those verified by EPA and/or CARB to achieve emissions reductions when applied to an existing diesel engine.

Funding Restrictions: EPA will not fund stand-alone cleaner fuel/additive use. For new or expanded use, this funding can cover the cost differential between the cleaner fuel/additive and conventional diesel fuel if that cleaner fuel is used in combination, and on the same vehicle, with a new eligible verified engine retrofit or an eligible engine upgrade or an eligible certified engine replacement or an eligible certified vehicle/equipment replacement funded under DERA.

A list of eligible, EPA verified cleaner fuels and additives is available at: [www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel](http://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel); a list of eligible, CARB-verified cleaner fuels and additives is available at: [www.arb.ca.gov/diesel/verdev/vt/cvt.htm](http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm). The types of fuels and additives (e.g., biodiesel, cetane enhancers) proposed for funding under this category must exist on one of these lists for the specific vehicle/engine application specified in the application and used only for the vehicle/engine applications specified on the list to be eligible for funding.

### **4. Idle Reduction Technologies**

An idle reduction project is generally defined as the installation of a technology or device that reduces unnecessary idling of diesel vehicles or equipment and/or is designed to provide services (such as heat, air conditioning, and/or electricity) to vehicles and equipment that would otherwise require the operation of the main drive or auxiliary engine(s) while the vehicle is temporarily parked or remains stationary. The reduction in idling will conserve diesel fuel and must also lower emissions.

Lists of eligible, EPA verified idle reduction technologies are available at: [www.epa.gov/verified-diesel-tech/smartway-technology](http://www.epa.gov/verified-diesel-tech/smartway-technology). The types of idle reduction technologies proposed for funding under this category must exist on this list for the vehicle/engine application specified in the application at the time of application submission to EPA. The technology categories include: Auxiliary power units and generator sets, battery air conditioning systems, thermal storage systems, electrified

parking spaces (truck stop electrification), fuel operated heaters, shore connection systems and alternative maritime power, shore connection systems for locomotives, and automatic shutdown/start-up systems for locomotives. The actual idle reduction technologies used must be specifically named on EPA's SmartWay Verified Technologies list at the time of acquisition and used only for the vehicle/engine applications specified on the list, to be eligible for funding.

Funding Restrictions:

**a) Locomotive Idle Reduction Technologies:** Funding can cover up to 40% of the cost (labor and equipment) of eligible verified idle reduction technologies for locomotives.

Please see Table 5 for additional information on the eligibility of idle reduction technologies for locomotive engines.

**b) Electrified Parking Spaces:** Electrified Parking Spaces (EPS), also known as Truck Stop Electrification (TSE), operates independent of the truck's engine and allows the truck engine to be turned off as the EPS system supplies heating, cooling, and/or electrical power. The EPS system provides off-board electrical power to operate either:

- an independent heating, cooling, and electrical power system, or
- a truck-integrated heating and cooling system, or
- a plug-in refrigeration system that would otherwise be powered by an engine.

Funding can cover up to 30% of the cost (labor and equipment) of eligible electrified parking space technologies, including the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional. Examples of eligible EPS costs include, but are not limited to, the purchase and installation of electrical infrastructure or equipment to enable heating, cooling, and the use of cab power for parked trucks, or to enable the use of power for transport refrigeration units (TRUs) and auxiliary power systems at distribution centers, intermodal facilities, and other places where trucks congregate. Examples of ineligible costs for EPS include but are not limited to: on-board auxiliary power units and other equipment installed on trucks; equipment and services unrelated to heating and cooling (e.g., telephone, internet, television, etc.); TRUs; electricity costs; and operation and maintenance costs.

**c) Marine Shore Power Connection Systems:** Shore power systems allow maritime vessels to "plug into" an electrical power source instead of using diesel main or auxiliary engines while at port. This funding can cover up to 25% of the cost (labor and equipment) of eligible marine shore power connection systems, including the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional. Examples of eligible marine shore power connection costs include but are not limited to various components such as cables, cable management



systems, shore power coupler systems, distribution control systems, transformers, grounding switches, service breakers, capacitor banks, and power distribution. Funding may support new installations, or expansions of existing shore power systems. Examples of ineligible costs for marine shore power connection systems include, but are not limited to, shipside modifications to accept shore-based electrical power, electricity costs, and operation and maintenance costs. Due to the unique nature and custom design of marine shore power connection systems, EPA will review and approve the marine shore power connection system proposed by the applicant on a case-by-case basis.

No funds awarded under this program shall be used for marine shore connection system projects that are expected to be utilized less than 1,000 MW-hr/year.

- i. Marine Shore Power Criteria: Projects are eligible for funding on the condition that the following criteria are satisfied:
  - Applicants must attest to compliance with international shore power design standards (ISO/IEC/IEEE 80005-1:2012 High Voltage Shore Connection Systems or the IEC/PAS 80005-3:2014 Low Voltage Shore Connection Systems).
  - Shore power connection systems must be supplied with electricity from the local utility grid.
  - Demonstration that the proposed system has the capacity, demand, and commitment to be utilized for more than 1,000 MW-hours per year. Smaller projects will be considered if the applicant can demonstrate cost/benefits.
  - If the project application is selected for funding, the final design of the marine shore power connection system will require specific EPA approval prior to purchase and installation.
  - Applicants must commit to reporting usage information to EPA for five years after the system is operational.
  - Shore power capable vessels docked at a berth where shore power is available must be required to turn off the vessel's engines and utilize the shore power system, with limited exceptions for extreme circumstances.
- ii. Marine Shore Power Project Description: Applicants proposing marine shore power connection systems should provide a project description that includes, but is not limited to:
  - the annual number of ship visits to berth where the shore power system is to be installed;
  - average hoteling (or idling) time per visit; and
  - information about the fleet of vessels that has, or will have, the ability to use the shore-side connection system, including:

- the estimated annual number of ship visits to the shore power enabled berth that will utilize the shore power system;
- estimated annual hoteling hours using shore power system;
- fuel type and average sulfur content of fuel used in the auxiliary engines for each vessel;
- auxiliary engine and boiler information for each vessel;
- estimated annual hoteling load requirements (MW-hours);
- any documented commitment of visits and hours by the fleet of vessels that has, or will have, the ability to use the shore-side connection system; and
- estimated emissions reductions

**d) Highway Idle Reduction Technologies:** Funding can cover up to 100% of the cost (labor and equipment) for verified idle reduction technologies installed on long haul Class 8 trucks and school buses, if combined on the same vehicle with the new installation of one or more of the Verified Engine Retrofit Technologies funded under this Program.

Funding can cover up to 100% of the cost (labor and equipment) for verified idle reduction technologies installed on long haul Class 8 trucks and school buses with model year 2006 or older engines that have been previously retrofitted with a verified emission control device.

Funding can cover up to 25% of the cost (labor and equipment) of stand-alone installations of eligible, verified idle reduction technologies on long-haul trucks and school buses.

Please see Table 1 for additional information on the eligibility of idle reduction technologies for medium and heavy-duty trucks, transit buses, and school buses.

## 5. Aerodynamic Technologies and Verified Low Rolling Resistance Tires

To improve fuel efficiency, long haul Class 8 trucks can be retrofitted with aerodynamic trailer fairings or the fairings can be provided as new equipment options. Certain tire models can provide a reduction in NOx emissions and fuel savings, relative to the “standard” new tires for long haul Class 8 trucks, when used on all axles.

A list of eligible, EPA verified aerodynamic technologies is available at: [www.epa.gov/verified-diesel-tech/smartway-verified-list-aerodynamic-devices](http://www.epa.gov/verified-diesel-tech/smartway-verified-list-aerodynamic-devices), and includes:

- a) gap fairings that reduce the gap between the tractor and the trailer to reduce turbulence;
- b) trailer side skirts that minimize wind under the trailer; and
- c) trailer rear fairings that reduce turbulence and pressure drop at the rear of the trailer.

A list of EPA verified low rolling resistance tires is available at: [www.epa.gov/verifieddiesel-tech/smartway-verified-list-low-rolling-resistance-lrr-new-and-retread-tire](http://www.epa.gov/verifieddiesel-tech/smartway-verified-list-low-rolling-resistance-lrr-new-and-retread-tire), and includes both dual tires and single wide tires (single wide tires replace the double tire on each end of a drive or trailer axle, in effect turning an "18" wheeler into a "10" wheeler). Low rolling resistance tires can be used with lower-weight aluminum wheels to further improve fuel savings, however aluminum wheels are not eligible for funding under this program.

The actual technologies/tires used by the grant recipient must be specifically named on EPA's SmartWay Verified Technologies list at the time of acquisition and used only for the vehicle/engine applications specified on the list, in order to be eligible for funding.

Funding Restrictions:

EPA will not fund stand-alone aerodynamic technologies or low rolling resistance tires. Funding can cover up to 100% of the cost (labor and equipment) for verified aerodynamic technologies or verified low rolling resistance tires installed on long haul Class 8 trucks, if combined on the same vehicle with the new installation of one or more of the Verified Engine Retrofit Technologies funded under this program, as described in this Section.

Note: Low rolling resistance tires are not eligible for funding where these types of tires have already been installed on the truck.

Please see Table 1 for additional information on the eligibility of aerodynamics and tires for medium and heavy-duty trucks, transit buses, and school buses.

## **6. Engine Replacement**

Engine Replacement includes, but is not limited to, diesel engine replacement with an engine certified for use with diesel or an alternative fuel (e.g., gasoline, CNG, propane), diesel engine replacement with a zero tailpipe emissions power source (grid, battery or fuel cell\*), and/or diesel engine replacement with an electric generator(s) (genset). Zero tailpipe emissions engine replacements do not require EPA or CARB certification.

The eligible cost of engine replacement includes the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional, including related labor expenses. Charges for equipment and parts on engine replacement projects are only eligible for funding if they are included in the certified engine configuration and/or are required to ensure the effective installation and functioning of the new technology but are not part of typical vehicle or equipment maintenance or repair. Examples of ineligible engine replacement costs include, but are not limited to: tires, cabs, axles, paint, brakes, and mufflers. For engine replacement with battery, fuel cell, and grid electric, examples of eligible engine replacement costs

include, but are not limited to: electric motors, electric inverters, battery assembly, direct drive transmission/gearbox, regenerative braking system, vehicle control/central processing unit, vehicle instrument cluster, hydrogen storage tank, hydrogen management system, fuel cell stack assembly, and the purchase and installation of electrical infrastructure or equipment to enable the use of power. Examples of ineligible costs include, but are not limited to, electricity, and operation and maintenance costs.

\*Hydrogen fuel cells are only eligible for engine replacements for eligible urban transit buses, shuttle buses, and drayage trucks.

Funding Restrictions:

**a) Locomotive, Marine, and Nonroad Diesel Vehicles and Equipment:**

- i. Funding can cover up to 40% of the cost (labor and equipment) of replacing a diesel engine with a 2019 model year or newer engine certified to EPA emission standards. Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to the engine in EMY 2019. Nonroad, locomotive, and marine engine emission standards are on EPA's website at: [www.epa.gov/emissionstandards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles](http://www.epa.gov/emissionstandards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles).
- ii. Funding can cover up to 60% of the cost (labor and equipment) of replacing a diesel engine with a zero tailpipe emissions power source.

Please see Table 3 for additional information on the eligibility of engine replacements for nonroad engines.

Please see Table 4 for additional information on the eligibility of engine replacements for marine engines.

Please see Table 5 for additional information on the eligibility of engine replacements for locomotive engines.

**b) Highway Diesel Vehicles:**

- i. Funding can cover up to 40% of the cost (labor and equipment) of replacing a diesel engine with a 2016 model year or newer engine certified to EPA emission standards. Highway engine emission standards are on EPA's website at: [www.epa.gov/emission-standards-reference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles](http://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles).
- ii. Funding can cover up to 50% of the cost (labor and equipment) of replacing a diesel engine with a 2016 model year or newer engine that is certified to CARB's Optional Low-NOx Standards of 0.1 g/bhp-hr, 0.05 g/bhp-hr, or 0.02 g/bhp-hr NOx. Engines certified to CARB's Optional Low NOx Standards may be found by

searching CARB's Executive Orders for Heavy-duty Engines and Vehicles, found at: [www.arb.ca.gov/msprog/onroad/cert/cert.php](http://www.arb.ca.gov/msprog/onroad/cert/cert.php).

iii. Funding can cover up to 60% of the cost (labor and equipment) of replacing a diesel engine with a zero tailpipe emissions power source.

Please see Table 1 for additional information on the eligibility of engine replacements for medium and heavy-duty trucks, transit buses, and school buses.

## **7. Vehicle and Equipment Replacements**

Nonroad and highway diesel vehicles and equipment, locomotives, and marine vessels can be replaced under this program with newer, cleaner vehicles and equipment that operate on diesel or alternative fuels and use engines certified by EPA and, if applicable, CARB to meet a more stringent set of engine emission standards. Replacement includes, but is not limited to, diesel vehicle/equipment replacement with newer, cleaner diesel, zero tailpipe emission (grid, battery or fuel cell<sup>e</sup>), hybrid or alternative fuel (e.g., gasoline, CNG, propane) vehicles/equipment. Zero tailpipe emissions vehicles and equipment do not require EPA or CARB certification.

The eligible cost of a vehicle/equipment replacement includes the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional. The cost of additional "optional" components or "add-ons" that significantly increase the cost of the vehicle may not be eligible for funding under the grant; the replacement vehicle should resemble the replaced vehicle in form and function. For grid electric powered equipment replacements, examples of eligible replacement costs include, but are not limited to, the purchase and installation of electrical infrastructure or equipment to enable the use of power. Examples of ineligible costs include, but are not limited to, electricity, and operation and maintenance costs.

### Funding Restrictions:

#### **a) Locomotives, Marine Vessels and Nonroad Diesel Vehicles and Equipment:**

i. Funding can cover up to 25% of the cost of a replacement locomotive, marine vessel, or nonroad vehicle or piece of equipment powered by a 2019 model year or newer engine certified to EPA emission standards. Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to EMY 2019. Nonroad, locomotive and marine engine emission standards are on EPA's website at: [www.epa.gov/emission-standards-reference-guide/epa-emissionstandards-nonroad-engines-and-vehicles](http://www.epa.gov/emission-standards-reference-guide/epa-emissionstandards-nonroad-engines-and-vehicles).

ii. Funding can cover up to 45% of the cost of a new, zero tailpipe emissions locomotive, marine vessel, or nonroad vehicle or piece of equipment.

Please see Table 3 for additional information on the eligibility of vehicle and equipment replacements for nonroad engines.

Please see Table 4 for additional information on the eligibility of vehicle and equipment replacements for marine engines.

Please see Table 5 for additional information on the eligibility of vehicle and equipment replacements for locomotive engines.

**b) Highway Diesel Vehicles and Buses (other than Drayage):**

- i. Funding can cover up to 25% of the cost of a replacement vehicle powered by a 2016 model year or newer engine certified to EPA emission standards. Highway engine emission standards are on EPA's website at: [www.epa.gov/emission-standardsreference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles](http://www.epa.gov/emission-standardsreference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles).
- ii. Funding can cover up to 35% of the cost of a replacement vehicle powered by a 2016 of 0.1 g/bhp-hr, 0.05 g/bhp-hr, or 0.02 g/bhp-hr NOx. Engines certified to CARB's Optional Low NOx Standards may be found by searching CARB's Executive Orders for Heavy-duty Engines and Vehicles, found at: [www.arb.ca.gov/msprog/onroad/cert/cert.php](http://www.arb.ca.gov/msprog/onroad/cert/cert.php).
- iii. Funding can cover up to 45% of the cost of a new, zero tailpipe emissions replacement vehicle.

Please see Table 1 for additional information on the eligibility of vehicle and equipment replacements for medium and heavy-duty trucks, transit buses, and school buses.

**c) Drayage Vehicles: Funding can cover up to 50% of the cost of a replacement drayage truck powered by a 2013 model year or newer certified engine.**

- i. Definition of Drayage Truck: A "Drayage Truck" means any Class 8 (GVWR greater than 33,000) highway vehicle operating on or transgressing through port or intermodal rail yard property for the purpose of loading, unloading or transporting cargo, such as containerized, bulk or break-bulk goods.
- ii. Drayage Operating Guidelines: If an application for the replacement of drayage trucks is selected for funding, the grant recipient will be required to establish guidelines to ensure that any existing truck replaced with grant funds has a history of operating on a frequent basis over the prior year as a drayage truck, and to ensure any new truck purchased with grant funds is operated in a manner consistent with the definition of a drayage truck, as defined above. For an example of sample guidelines, see <https://www.epa.gov/cleandiesel/clean-diesel-state-forms-and-documents>.
- iii. Required/Scheduled Maintenance: EPA will fund the required/scheduled vehicle maintenance, as specified in the owner's manual, which is necessary to meet the warranty requirements for diesel particulate filters installed on drayage

trucks. Funding for required maintenance is available for the duration of the project period.

## **8. Clean Alternative Fuel Conversions**

Conventional, original equipment manufacturer (OEM) highway diesel vehicles and engines that are altered to operate on alternative fuels such as propane or natural gas are classified as aftermarket clean alternative fuel conversions. Clean alternative fuel conversions are accomplished by applying a certified or compliant alternative fuel conversion “kit” to an existing highway diesel engine.

### Funding Restrictions:

Funding can cover up to 40% of the cost (labor and equipment) of an eligible certified or compliant clean alternative fuel conversion. Eligible conversions are limited to those systems that have been certified by EPA and/or CARB, and those systems that have been approved by EPA for Intermediate-Age engines. EPA’s lists of “Certified Conversion Systems for New Vehicles and Engines” and “Conversion Systems for Intermediate-Age Vehicles and Engines” are available at [www.epa.gov/vehicle-and-engine-certification/lists-epa-compliant-alternative-fuel-conversion-systems](http://www.epa.gov/vehicle-and-engine-certification/lists-epa-compliant-alternative-fuel-conversion-systems); CARB’s list of “Approved Alternate Fuel Retrofit Systems” are available at: [www.arb.ca.gov/msprog/aftermkt/altfuel/altfuel.htm](http://www.arb.ca.gov/msprog/aftermkt/altfuel/altfuel.htm).

To be eligible for funding, conversion systems for engine model years 1995-2006 must achieve at least a 30% NOx reduction and a 10% PM reduction from the applicable certified emission standards of the original engine. To be eligible for funding, conversion systems for engine model years 2007-2009 must achieve at least a 20% NOx reduction with no increase in PM from the applicable certified emission standards of the original engine. Applications for clean alternative fuel conversions should include a discussion of the availability of conversion systems and indicate the pre-and post-project emission standard levels of the engines to demonstrate that the conversions result in the required emissions benefit.

Most states require the use of EPA approved systems. Vehicles operating in California, and other States that require CARB approved aftermarket systems, must follow conversion rules issued by CARB. Compliance with applicable state law is the sole responsibility of the fleet owner.

Please see Table 1 for additional information on the eligibility of clean alternative fuel conversions for medium and heavy-duty trucks, transit buses, and school buses.

**Table 1: Funding Restrictions for Medium and Heavy-Duty Trucks, Transit Buses, and School Buses**

CURRENT ENGINE MODEL YEAR (EMY)	DOC +/- CCV	DPF	SCR	VERIFIED IDLE REDUCTION, TIRES, OR AERODYNAMICS	VEHICLE OR ENGINE REPLACEMENT: EMY 2016+ (2013+ FOR DRAYAGE)	VEHICLE OR ENGINE REPLACEMENT: EMY 2016+ ZERO EMISSION OR LOW-NOx	CLEAN ALTERNATIVE FUEL CONVERSION
Older - 1995	No	No	No	No	No	No	No
1996 - 2006	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2007 - 2009	No	No	Yes	Yes*	Yes	Yes	Yes
2010 - newer	No	No	No	Yes*	No	Yes	Yes

\*Auxiliary Power Units and generators are not eligible on vehicles with EMY 2007 or newer.

**Table 2: Nonroad Engine Funding Restrictions for Vehicle/Equipment Replacement**

CURRENT ENGINE HORSEPOWER	CURRENT EMY AND TIER	VEHICLE/EQUIPMENT REPLACEMENT: EMY 2019+					VERIFIED RETROFIT
		COMPRESSION IGNITION			SPARK IGNITION	ZERO EMISSION	
		TIER 0-2	TIER 3-4i	TIER 4	TIER 2		
0 – 50	2006 and Newer; Unregulated – Tier 2	No	No	Yes	Yes	Yes	Yes
51 – 300	1996 and Newer; Tier 0 – Tier 2	No	Yes*	Yes	Yes	Yes	Yes
51 - 300	1996 and Newer; Tier 3	No	No	Yes	Yes	Yes	Yes
301+	1986 and Newer; Tier 0 – Tier 2	No	Yes*	Yes	Yes	Yes	Yes
301+	1986 and Newer; Tier 3	No	No	Yes	Yes	Yes	Yes

\* Tier 3 and Tier 4 interim (4i) allowed for vehicle/equipment replacement only when Tier 4 final is not yet available from OEM for 2019 model year equipment under the Transition Program for Equipment Manufacturers (TPEM).



**Table 3: Nonroad Engine Funding Restrictions for Engine Replacement**

CURRENT ENGINE HORSEPOWER	CURRENT EMY AND TIER	ENGINE REPLACEMENT: EMY 2019+*				VERIFIED ENGINE UPGRADE
		COMPRESSION IGNITION		SPARK IGNITION	ZERO EMISSION	
		TIER 0-3	TIER 4	TIER 2		
0 – 50	2006 and Newer; Unregulated – Tier 2	No	Yes	Yes	Yes	Yes
51 – 300	1996 and Newer; Tier 0 – Tier 3	No	Yes	Yes	Yes	Yes
301 – 750	1986 and Newer; Tier 0 – Tier 3	No	Yes	Yes	Yes	Yes
751+	1986 and Newer; Tier 0 – Tier 2	No	Yes	Yes	Yes	Yes

\* Previous engine model year engines may be used for engine replacement if the engine is certified to the same emission standards applicable to EMY 2019.

**Table 4: Marine Engine Funding Restrictions for Vessel or Engine Replacement**

CURRENT ENGINE TIER	VESSEL OR ENGINE REPLACEMENT: EMY 2019+*				CERTIFIED REMANUFACTURE SYSTEM	VERIFIED ENGINE UPGRADE
	COMPRESSION IGNITION		SPARK IGNITION	ZERO EMISSION		
	TIER 1-2	TIER 3-4				
Unregulated – Tier 2	No	Yes	Yes	Yes	Yes	Yes
Tier 3 - 4	No	No	No	Yes	No	No

\* Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to EMY 2019.

**Table 5: Locomotive Engines Funding Restrictions for Locomotive or Engine Replacement**

CURRENT LOCOMOTIVE TIER	LOCOMOTIVE REPLACEMENT OR ENGINE REPLACEMENT: EMY 2019+* OR ZERO EMISSION			VERIFIED RETROFIT	IDLE REDUCTION TECHNOLOGY	CERTIFIED REMANUFACTURE SYSTEM
	TIER 0+ -3	TIER 4	ZERO EMISSION			
	Unregulated – Tier 2	No	Yes			
Tier 2+ switcher	No	Yes	Yes	Yes	Yes**	Yes
Tier 2+ line haul	No	No	No	Yes	Yes**	Yes
Tier 3 – Tier 4	No	No	No	No	No	No

\* Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to EMY 2019.

\*\* Automatic Engine Start-Stop technologies are only eligible to be installed on locomotives currently certified to Tier 0 or unregulated.