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2019 – FDIC Technical Committee Meeting

GHG Phase 2 Emissions Overview

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Preface

Regulations pertaining to Greenhouse Gas (GHG) are very complex and provide multiple scenarios for certification. Information contained herein is not be considered legal advice and does not include all details or requirements related to compliance. It is intended to provide an general overview of GHG regulations for Emergency Vehicles. For complete, comprehensive requirements that relate to your products and their certification you might consider working with counsel, on-staff compliance persons, or the US EPA.



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When does it start

2021

“ Begins with Model Year 2021

“ Can begin prior to January 1, 2021

“ **Small Manufacturers meeting certain criteria may delay until January 1, 2022.**

“ **EPA Targets Fall 2019 for Inputs to the certification modules**

January

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February

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14	15	16	17	18	19	20
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28						

March

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14	15	16	17	18	19	20
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28	29	30	31			

April

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17	18	19	20	21	22	23
24	25	26	27	28	29	30

May

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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June

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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

July

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17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

August

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21	22	23	24	25	26	27
28	29	30	31			

September

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23	24	25	26	27	28	29
30	31					

October

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23	24	25	26	27	28	29
30	31					

November

Su	Mo	Tu	We	Th	Fr	Sa
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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December

Su	Mo	Tu	We	Th	Fr	Sa
						1
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					



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General Requirements



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Phase 2 Changes

- “ **Vocational Vehicles will have an assigned service class defined as:**
 - “ Light Heavy Duty Vehicles (Light HDV) or Class 2b through Class 5
 - “ Medium Heavy Duty Vehicles (Medium HDV) or Class 6 through Class 8
 - “ Heavy Heavy Duty Vehicles (Heavy HDV) or Class 6 through 8 when equipped with an engine whose primary intended service class is heavy heavy-duty
- “ **Categorizes Custom Chassis (Emergency Vehicles fall here)**
- “ **Extends application of GHG Regulations to Small Manufacturers and Trailers**
- “ **Requires certification of the Air Conditioning System**
- “ **Amends useful life to 11 years or 120K miles, whichever occurs first**



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Vocational Vehicle Requirements for MY 2021 – MY 2026 G/Ton Mile

Engine cycle	Vehicle size	Multi-purpose	Regional	Urban
Compression-ignition	Light HDV	344	296	385
Compression-ignition	Medium HDV	246	221	271
Compression-ignition	Heavy HDV	242	194	283
Spark-ignition	Light HDV	385	324	432
Spark-ignition	Medium HDV	279	251	310



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Vocational Vehicle Requirements for MY 2027+ G/Ton Mile

Engine cycle	Vehicle size	Multi-purpose	Regional	Urban
Compression-ignition	Light HDV	330	291	367
Compression-ignition	Medium HDV	235	218	258
Compression-ignition	Heavy HDV	230	189	269
Spark-ignition	Light HDV	372	319	413
Spark-ignition	Medium HDV	268	247	297



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Optional Emergency Vehicle Requirements g/ton mile

Vehicle type	Assigned vehicle service class	MY 2021-2026	MY 2027+
School bus	Medium HDV	291	271
Motor home	Medium HDV	228	226
Coach bus	Heavy HDV	210	205
Other bus	Heavy HDV	300	286
Refuse hauler	Heavy HDV	313	298
Concrete mixer	Heavy HDV	319	316
Mixed-use vehicle	Heavy HDV	319	316
Emergency vehicle	Heavy HDV	324	319

Emergency vehicles choosing this method must be equipped with tires with TRRL at or below 8.4 kg/tonne (8.7 g/tonne for model years 2021 through 2026) and must use an engine certified to the appropriate model year. Emergency vehicles may also use certified with loose provision engines as defined in the applicable regulations.



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A/C Requirements



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A/C Leakage Requirements

- “ Cannot exceed loss of 11 grams of refrigerant per year or;
- “ Have a percent leak rate of 1.5% per year, which ever is greater.
- “ This does not apply to self contained air conditioning, or refrigeration, units used on vocational vehicles even if they draw power from the engine used to propel the vehicle.



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Labeling requirements



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Additional Labels for the Apparatus

- " %VEHICLE EMISSIONS CONTROL INFORMATION+
 - " Refer to the regulations for additional information required
- " %THIS VEHICLE COMPLIES WITH U.S. EPA REGULATIONS FOR [MODEL YEAR] HEAVY-DUTY VEHICLES.+
- " %THIS VEHICLE HAS A LIMITED EXEMPTION AS AN EMERGENCY VEHICLE.+
- " If Optional Certification is used, %THIS VEHICLE WAS CERTIFIED AS A [identify vehicle type as identified in Table 5 of this section] UNDER 40 CFR 1037.105(h)).+



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Owner's Manual Requirements



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Owners Manual Requirements

- “ Must include information related to emissions related warranty provisions
- “ Specific maintenance instructions for emissions related components
- “ Explain the owner's responsibility for proper maintenance



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Warranty Requirements



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Emissions Related Warranty

- “ Applies to all parts of the vehicles emissions control system
- “ At the time of sale to the ultimate purchaser and subsequent purchaser
- “ Warranty period = 5 years/100K miles (except tires) for M/HDV
- “ 5 years for trailers
- “ 1 year for tires on trailers
- “ 2 years/24K miles for all other tires
- “ Begins when the vehicle is placed into service



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GHG Emissions Related Components

- " Tires
- " Automatic Fire Inflation Systems
- " Tire pressure monitoring systems
- " Vehicle Speed Limiters
- " Idle-Reduction Systems
- " Hybrid System Components
- " Other non-standard devices used to improve aerodynamic performance to the extent they are listed in the application for certification
- " Components whose failure would increase a vehicle's emissions of air conditioning refrigerants



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Component Manufacturers



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Getting Started with Registration and GEM

<https://www.epa.gov/vehicle-and-engine-certification/users-guide-registering-company-manufacturer-code-verify>



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Vehicle and Engine Certification

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for Vehicles & Engines
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Nonroad

EV-CIS

User's guide for registering a company manufacturer code for Verify

This is a user guide for the company registration process to acquire and/or electronically register a manufacturer code for the Verify system. It includes instructions for creating a temporary user account for Verify Manufacturer Registration and electronically registering or requesting your company's manufacturer code.

Users complete these steps to:

- Register an existing code in Verify
- OR**
- Request a manufacturer code for the first time.

You may need a PDF reader to view some of the files on this page. See EPA's [About PDF page](#) to learn more.

- [User's guide for registering a company manufacturer code for Verify](#) (PDF) (18 pp, 3 MB, August 2014)

[Contact Us](#) to ask a question, provide feedback, or report a problem.

Related Topics

- [How to register for the Verify system](#)



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Vehicle and Engine Certification

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EV-CIS

How to Register for Engines and Vehicles Compliance Information System (EV-CIS)

Registration overview

Company registration

Account setup

Engines and Vehicles Compliance Information System (EV-CIS), formerly the Verify System, is EPA's compliance information system for:

- Engines;
- Vehicles; and
- Equipment used in transportation and other mobile source applications.

Engine, vehicle, and equipment manufacturers use this system to report certification and compliance information for emissions and fuel economy.

There are two parts to registering for EV-CIS:

Part 1: Company registration for EV-CIS

Companies must electronically register their manufacturer code through EV-CIS even if they have already been assigned a code by EPA. Click this link or the tab above for more information: [Company registration](#)

Part 2: Account setup for EV-CIS

Users must follow this process to get an account for a functional role within EV-CIS. Click this link or the tab above for more information: [Account setup](#)

[Contact Us](#) to ask a question, provide feedback, or report a problem.



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GEM SET UP



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GEM Access and Set Up

<https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-emissions-model-gem-medium-and-heavy-duty#phase-2-final>



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🇺🇸 An official website of the United States government.

🔔 We've made some changes to EPA.gov. If the information you are looking for is not here, you may be able to find it on the [EPA Web Archive](#) or the [January 19, 2017 Web Snapshot](#). Close x



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Onroad

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Greenhouse Gas

Greenhouse Gas Emissions Model (GEM) for Medium- and Heavy-Duty Vehicle Compliance

On this page:

- [Overview of GEM](#)
- [Phase 2 GEM simulation model](#)
- [Phase 1 GEM simulation model v2.0.1](#)

Overview of GEM

GEM is a free, desktop computer application that estimates the greenhouse gas (GHG) emissions and fuel efficiency performance of specific aspects of heavy-duty (HD) vehicles. GEM is designed to operate on a single computer.

You may need a PDF reader to view some of the files on this page. See [EPA's About PDF page](#) to learn more.

Related Topic

- [Regulations for Greenhouse Gas Emissions from Commercial Trucks & Buses](#)
- [Advanced Light-Duty Powertrain and Hybrid Analysis \(ALPHA\) Tool](#)

Phase 2 GEM Simulation Model

(Supporting the Final HD Vehicle GHG Emissions and Fuel Efficiency Rules)

The model documentation provides details on how to install and use the model. The PDF file also contains the input files that were used to determine the stringency of the final GHG Emissions



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Other Resources

<https://iaspub.epa.gov/otaqpub/>

<https://www.epa.gov/regulations-emissions-vehicles-and-engines>

<https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-greenhouse-gas-emissions-commercial-trucks>



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THANK YOU