

# Engine and Vehicles – Compliance Information System (EV-CIS)

## **Heavy-Duty (HD) Engines and Vehicle GHG Phase II Certification**

Informational Meeting

July 9, 2019



# Agenda

- What's Happening?
- Summary of Major Changes
  - HD Vehicle GHG
  - HD Engines
  - Submodules
- Demo
- Proposed Schedule
- Testing Information
- Resources for Phase II
- Questions



## What's Happening?

- Phase II regulations are in place for certification of HD Engines and HD Vehicles with major portions of the rules becoming mandatory for the 2021 Model Year.
- The HD Engines and HD Vehicle GHG Certification Modules of EV-CIS are being revised to accommodate Phase II while continuing to support Phase I.
- New submodules have been introduced to streamline collection of some new and existing data which are applicable across multiple families and/or model years.



# Summary of Major Changes

## HD Vehicle GHG (1 of 3)

- New emission standards for Model Year 2021+ tractors, vocational vehicles, custom chassis vocational vehicles, and heavy-haul tractors
- New regulatory sub-categories for SI, CI, and custom chassis vocational vehicles, and new Class 8 tractor and vocational vehicle sub-categories
- New averaging sets for custom chassis vocational vehicles
- Incorporation of optional design (non-GEM) standards for select custom chassis vocational vehicles



# Summary of Major Changes HD Vehicle GHG (2 of 3)

- Accommodation of provisions for small businesses (including delay of standards for alt fuels), use of special vocational credits, specialty vehicles, and certification to a higher vehicle service class
- Accommodation of new credits, including off-cycle weight-reduction, vocational vehicle off-cycle delta CdA, and intelligent controls
- Vocational vehicle manufacturers now required to enter A/C leakage data



# Summary of Major Changes HD Vehicle GHG (3 of 3)

- Revision of Tire Data template to include tire revolutions per mile for Phase II (optional for Phase I)
- New weight reduction values for 2021+ Model Years
- New non-wheel weight reduction values for LHD, MHD, and HHD Model Year 2021+ vocational vehicles
- Increase of LHD full useful life
- Collection of Phase II CdA aerodynamic data and axle, transmission, powertrain, and tire data files through new submodules



# Summary of Major Changes HD Engines

- New emission standards for Model Year 2021+ gasoline and diesel engines
- Separation of parent rating from sub-family ratings and the ability to optionally certify below the CO<sub>2</sub> parent rating to different CO<sub>2</sub> FELs
- Requirement of CO<sub>2</sub> IRAFs for Model Year 2021+ gasoline and diesel engines
- Accommodation of early certification using Phase II interim provisions of 1036.150(p)
- Increase of LHD full useful life
- Collection of engine fuel map data files through a new submodule



# Introduction of Submodules for HD Vehicle GHG and HD Engines

New **Submodules** introduce a streamlined process for submitting some new and existing data which are applicable across multiple families and/or model years. This includes—

## HD Vehicles

- Phase II-specific CdA aerodynamic data
- Tire data previously reported through the certification web form
- Axle power loss map data obtained following procedures outlined in 1037.560
- Transmission data obtained following procedures outlined in 1037.535
- Powertrain test data obtained following procedures outlined in 1037.550

## HD Engines

- Engine fuel map data obtained following procedures outlined in 1036.510





# Introduction of Submodules for HD Vehicle GHG and HD Engines

Goal is to:

- Make the user interface as friendly as possible
- Eliminate duplicate data entry, thereby—
  - Reducing burden on manufacturers
  - Reducing burden on the system (data transfer and storage)
  - Improving data integrity
- Pilot the process for future use cases
  - Feedback is encouraged and welcome



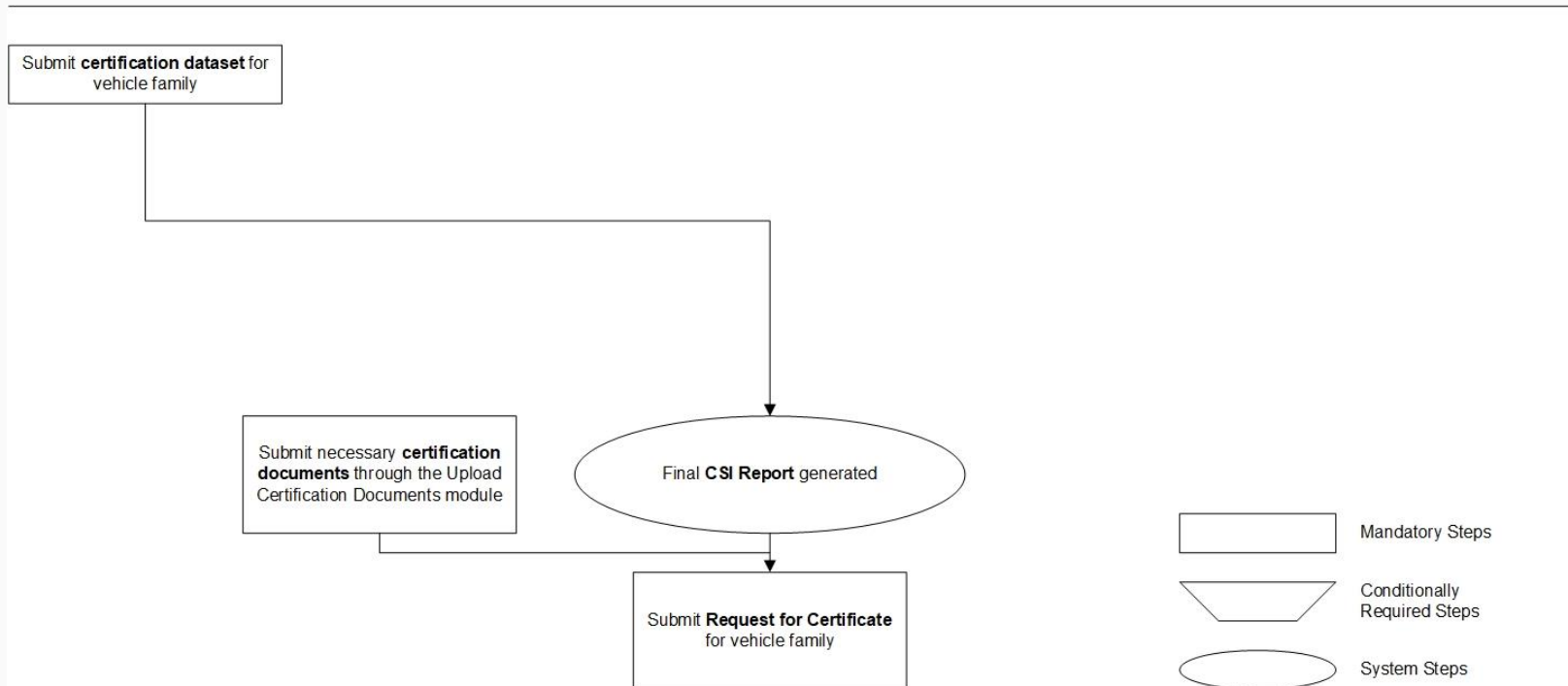
# Overview of Submodules

Submodule	Responsible MFR	Use Submodule for...		File Upload	MY specific	Family specific
		Phase I	Phase II			
CdA Aerodynamic Data	HDV	No	Yes	No	No	No
Tire Data	HDV	Yes	Yes	Yes	Yes	No
Axle Power Loss Map Data	HDV	N/A	Yes	Yes*	Yes	Yes
Transmission Data	HDV	N/A	Yes	Yes*	Yes	Yes
Powertrain Test Data	HDV	N/A	Yes	Yes*	Yes	Yes
Engine Fuel Map	HDE	N/A	Yes	Yes*	Yes	Yes

**\*Note:** The file that needs to be uploaded must be the same file used in GEM for Vehicle certification.

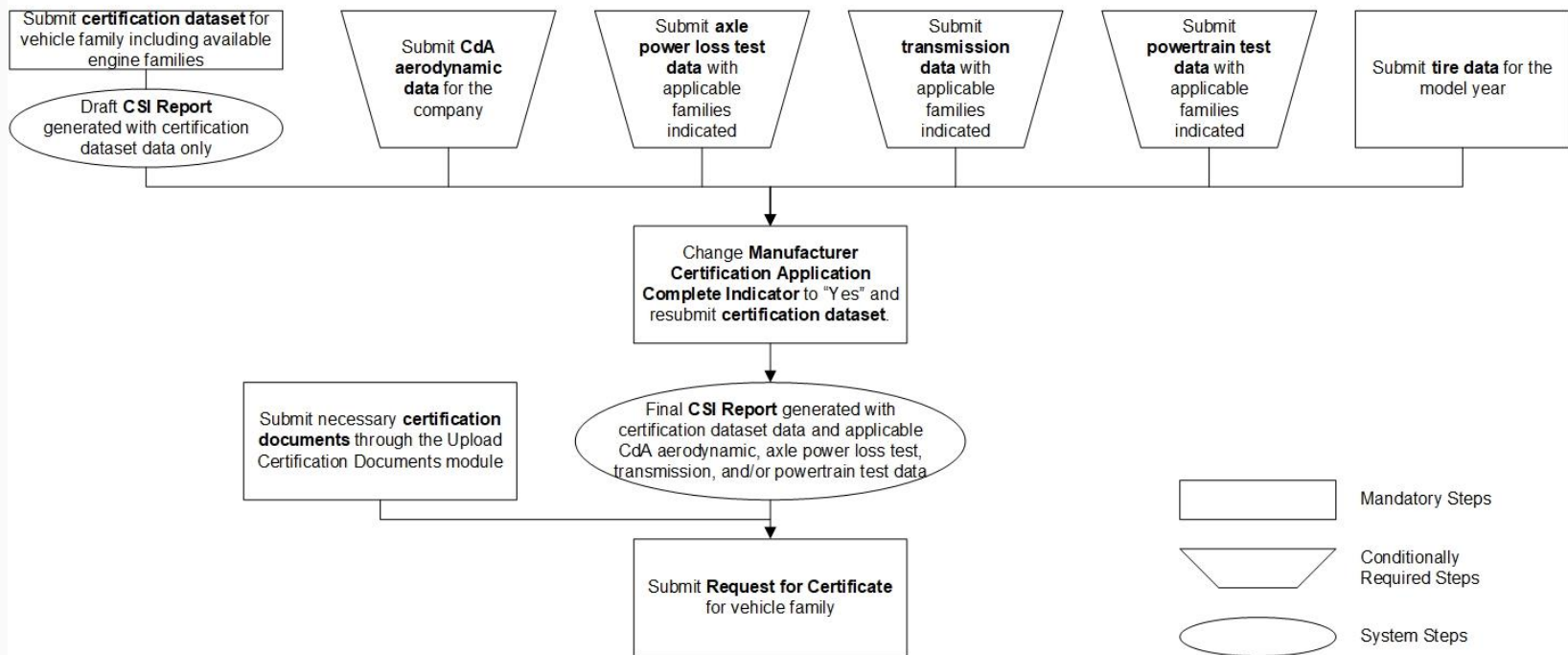


# Current Process for Completing HD Vehicle Application





# New Process for Completing HD Vehicle Phase II Application





# CdA Aerodynamic Data

- Use this submodule for **Phase II** only. \*
- This data is company-wide and can be updated easily at any time (similar to Maintain Manufacturer Profile).
- Active CdA aerodynamic data in the submodule will appear on the CSI Report.
- You can deactivate CdA aerodynamic data that is no longer relevant and should no longer appear on future CSI Reports.
- Prior to requesting a certificate for any MY 2021+ tractor certifying under 1037.106 or 1037.670, relevant CdA aerodynamic data must be present in the submodule.

*\*Note: Phase I CdA aerodynamic data will continue to be captured through the certification module.*



# Tire Data

- Use this submodule for **Phase I** and **Phase II** data.
  - **Note:** The certification module should no longer be used to capture any Tire data.
- Use this submodule to upload Tire Data Files each model year.
- A Tire Data File must be present for the model year prior to requesting a certificate for any vehicle families in that model year.
- Tire Data will no longer appear on the CSI Report.



# Axle Power Loss Map Data

- New requirement for **Phase II** only
- Use this submodule to upload Axle Power Loss Map Data (Axle Data) Files received from axle manufacturers and to list the vehicle families to which the data applies.
- MY 2021+ vehicle families must be listed as an Applicable Vehicle Family for at least one Axle Data File prior to requesting a certificate if—
  - the family has at least one vehicle configuration using axle efficiency test data obtained using the test procedures in 1037.560 in GEM instead of the EPA default.



# Transmission Data

- New requirement for **Phase II** only
- Use this submodule to upload Transmission Data Files received from transmission manufacturers and to list the vehicle families to which the data applies.
- MY 2021+ vehicle families must be listed as an Applicable Vehicle Family for at least one Transmission Data File prior to requesting a certificate if—
  - the family contains no electric or hydrogen vehicles;
  - the family is not certifying using the design provisions of 1037.105(h); and
  - powertrain testing was not used for certification of any vehicles within the family.





# Powertrain Test Data

- New requirement for **Phase II** only
- Use this submodule to upload Powertrain Test Data Files received from powertrain manufacturers and to list the vehicle families to which the data applies.
- MY 2021+ vehicle families must be listed as an Applicable Vehicle Family for at least one Powertrain Test Data File prior to requesting a certificate if—
  - powertrain testing was used for certification of at least one vehicle within the family.



# Engine Fuel Map Data

- New requirement for **Phase II** only
- HD Engine MFRs must—
  - use the submodule to upload Engine Fuel Maps that are intended for use in vehicles requiring GEM certification; and
  - provide the appropriate Engine Fuel Map file name to the Vehicle MFRs installing your engines so they can provide the proper GEM inputs.
- HD Vehicle MFRs must—
  - include these engine family names in their certification datasets and the Engine Fuel Map file name in their GEM inputs.



# Manufacturer Certification Application Complete Indicator

- You can set this indicator to “Yes” once your certification dataset is complete and you have ensured that any CdA Aerodynamic Data, Axle Data Files, Transmission Data Files, Powertrain Test Data Files, and Tire Data Files that are applicable to your family are present.
- Meeting these requirements and setting this indicator to “Yes” is a prerequisite for requesting a certificate.
  - Note: The presence of an Engine Fuel Map does not impact your ability to obtain a certificate.



## Revising Submodule Data

- If any updates are made to axle, transmission, powertrain, and/or CdA aerodynamic data associated with your family between the time the Manufacturer Certification Application Complete Indicator has been set to 'Y' (Yes) and requesting your certificate, your CSI Report will be rendered obsolete and you will be unable to submit an RFC until you regenerate the CSI Report.
- Regenerate the CSI Report by resubmitting the certification dataset.
- This protection is in place to ensure that the most recent submodule data is on your CSI Report.



## Submodule Data for Certified Families

- If an axle power loss map, transmission, or powertrain test data file is being submitted and it is associated with certified families, you must indicate whether or not the data creates new worst-case configuration FELs for those families.
- If any families do get a new worst-case configuration FEL, then by the end of the Model Year, you must—
  - submit running changes to update the worst-case configuration FELs for each of the impacted families; and
  - request revised certificates for each family with new worst-case configuration FELs.



# Submodule Limitations in First Release

- Editing metadata for previously submitted files will be cumbersome.
  - In order to associate more families to an uploaded file, you will have to resubmit the file, making sure you duplicate the metadata verbatim and re-enter all of the associated families.
  - TIP: Be sure you have a comprehensive list of impacted families prior to submitting your Axle, Transmission, and Powertrain data files.
- There will be no email notifications sent upon submission.
  - TIP: Print your confirmation screen upon successful submission of your data file.
- You cannot see your submissions, so you cannot see what has been submitted or when things have been updated in the system.
  - TIP: Coordinate with team members to track what submodule data has been submitted and when there are updates.
- Discussions are underway to address these limitations.

The background features a large, faint watermark of the United States Environmental Protection Agency (EPA) logo. The logo is circular, with the words "UNITED STATES" at the top and "ENVIRONMENTAL PROTECTION AGENCY" at the bottom. In the center is a stylized flower with three leaves and a scalloped top. The text "Demonstration" is overlaid on the top half of the logo.

# Demonstration

HDV Submodule Process



# Proposed Schedule\*

Date(s)	Activity/Milestone
July 15	Start of Testing Period for HD Vehicle MFRs
July 16, 10a-11a	Testing Meeting w/ HD Vehicle MFRs
July 18, 10a-11a	Testing Meeting w/ HD Vehicle MFRs
July 23, 10a-11a	Testing Meeting w/ HD Vehicle MFRs
July 25, 10a-11a	Testing Meeting w/ HD Vehicle MFRs
July 26	End of Testing Period for HD Vehicle MFRs
August 26	Start of Testing Period for HD Engine MFRs
August 30	End of Testing Period for HD Engine MFRs
October 18	Production Deployment of HD Vehicle and Engine Certification Modules and Submodules

*\*Please note that this schedule is subject to change.*





# Testing Information

- We strongly encourage MFRs to participate in system testing.
- If interested in participating in HD Phase II testing, send an email to [verify@epa.gov](mailto:verify@epa.gov) with the following information:
  - **Email Subject:** Heavy-Duty Phase II System Testing
  - To ensure you can start testing on July 15<sup>th</sup>, submit your completed user registration form found at the following link by **July 11<sup>th</sup>** :  
<https://www.epa.gov/sites/production/files/2018-04/ev-cis-user-registration-information-spreadsheet-2018-04.xlsx>
- Testing accounts have already been created for those users who previously sent in their requests.
- If you have questions regarding testing—
  - Contact Sandra Somoza at [Somoza.Sandra@epa.gov](mailto:Somoza.Sandra@epa.gov) or Darryl Moses at [Moses.Darryl@epa.gov](mailto:Moses.Darryl@epa.gov).
- Link to testing environment: <https://test.epacdx.net/>
  - **WARNING: Do not submit any CBI during testing in this environment!!!**



# Testing Meeting Logistics

- **Call-in Information**

- Call-in Number: 202-991-0477

- Conference Code: 5206665#

- **Webinar Information**

- <https://epawebconferencing.acms.com/evcisrevisions/>

- If you have never attended an Adobe Connect meeting before, please test your connection here:

- [http://epawebconferencing.acms.com/common/help/en/support/meeting\\_test.htm](http://epawebconferencing.acms.com/common/help/en/support/meeting_test.htm)



# Issue Tracker for Feedback

- Use the issue tracker document any problems or feedback.
- Provide as much detail as possible, for example—
  - where the issue occurred in the system (e.g., General Info tab of the HDV Certification module);
  - enough information to recreate the issue;
  - transaction IDs;
  - date/time stamp; and
  - include screenshots as needed.
- Send issue trackers to [verify@epa.gov](mailto:verify@epa.gov) with an **Email Subject** of “HDV Issue Tracker” by COB the Mondays and Wednesdays before the Testing Meetings.
  - Testing Meetings will be cancelled if no issue trackers are received.



## Resources for Phase II

- Draft versions of the **Data Requirements, Business Rules, XML Schema, and XML Schema Change Log** and the Issue Tracker for HD Vehicles are currently available online at:
  - <https://www.epa.gov/vehicle-and-engine-certification/system-documentation-onroad-heavy-duty-vehicles-engines-and>
- A draft version of the **Data Requirements** for HD Engines are currently available online at:
  - <https://www.epa.gov/vehicle-and-engine-certification/system-documentation-heavy-duty-engines-engines-and-vehicles>
- Additional draft documents for HD Engines will be posted as they become available.
- Information about the new powertrain family naming convention will be available online at:
  - <https://www.epa.gov/vehicle-and-engine-certification/information-about-family-naming-conventions-vehicles-and-engines>



# General Resources

- EV-CIS Website
  - <https://www.epa.gov/vehicles-and-engines>
- EV-CIS Listserver
  - [https://lists.epa.gov/read/all\\_forums/subscribe?name=verify](https://lists.epa.gov/read/all_forums/subscribe?name=verify)
- Guidance Letters
  - <https://www.epa.gov/dis>



# Questions