PRESENTATION OUTLINE

- Background
- Applicability and Rationale
- Timeline
- Aero Device Approval Request Process and Elements
- How to Submit Request for Approval
- CARB Review and Approval Process
- Approval Conditions
- Post-Approval Changes
- Useful Links, How to Sign up for Program Updates, & CARB Contact Information
- Trailer Certification
**Tractor Trailer Greenhouse Gas (GHG) Regulation**
California fleet rule (Currently being implemented)

Box Van Trailer Fleet owners required to install Aero Devices

Aero devices must be:
- SmartWay Verified, or
- Meet **Aero Performance (CdA) Criteria** (Interim Aero Device Approval Effective April 1, 2019)

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**Phase 2 Trailer Certification**
OEM certification (Applies 2020MY+)

Trailer Manufacturers Certify Trailer Families Sold in California (2020 MY)

Box Van Trailer must meet GHG emission standard using GEM Model derived Compliance Equation

**Aero Performance (CdA) data generated in accordance with the Phase 2 procedures defined in CFR 1037.211**
- Wind Tunnel
- Computational Fluid Dynamics (CFD)
- Coastdown

**Equation inputs include**
- **Aero Performance (CdA)**
- Tire rolling resistance
- Weight reduction

---

**TODAY’S WORKSHOP FOCUS: INTERIM AERO DEVICE APPROVAL PROCESS FOR CARB’S TRACTOR TRAILER GHG REGULATION**

**Same Aero Performance Data Can Be Used to Support Both Regulations**
**BACKGROUND**

- **TTGHG**: Adopted in 2008; Effective January 1, 2010 (first CO$_2$ rule for HD vehicles)
  - Fleet Rule: Applies to owners and operators
  - Reduces GHG emissions from long-haul tractor-trailers by improving their aero and tire rolling resistance
  - 53’ or longer box-type trailers (dry-van & refrigerated van trailers)
- **Phase 1 standards**: MYs 2014, 2017 for engine, tractor, vocational vehicles, and class 2b/3
  - CA has been doing “deemed to comply” since MY 2015.
  - No trailers
- **Federal Phase 2 standards**:
  - MYs 2021, 2024, and 2027 for engine, tractor, vocational vehicles, and class 2b/3 standards
  - MY 2018 trailer standards (first ever)
    - **Current status of federal trailer standards – stayed, not being implemented, uncertain future**
CA Phase 2: Aligned with federal Phase 2 with same stringency and effective dates, except for trailer standards take effect with MY 2020 rather than MY 2018

- Did not include “deemed to comply” provisions
- Apr. 1, 2019 - CA Phase 2 effective date

TTGHG Regulation Phase 2 provisions (Interim provisions):

- Added option of complying with TTGHG using Phase 2 certified trailers or aero and LRR tires tested in accordance with Phase 2 methods
APPLICABILITY AND RATIONALE

Applicability

- 2018 and 2019 Model Year Long Dry-Van and Long Refrigerated-Van Trailers
- Aerodynamic device manufacturers who wish to have their devices be available for Phase 2 certification of trailers must submit requests as described in this guidance
- Trailer manufacturers who wish to commercialize their aero devices for Phase 2 certification of trailers must submit requests as described in this guidance
- Aero device approval process used in the TTGHG Interim Program will remain in effect as part of the Trailer Certification

Rationale

- Obtaining approval of aerodynamic test data for trailer devices will allow the trailer certification process to be swift and efficient
Aero device approval requests may be submitted beginning in April 2019

Launch of California Phase 2 Trailer Certification
- Trailer certification applications may be submitted to CARB beginning April 1, 2019
- Manufacturers of trailer families using aerodynamic drag reduction technologies as part of a compliance plan must ensure that all planned devices have received a device approval number before submitting request for approval
- Reviews of requests for approval will be delayed if an aero device is listed without a valid approval number

New trailers entered into commerce in California on or after January 1, 2020 must be certified by CARB (except as exempted in regulation)
Questions?
AERO DEVICE APPROVAL REQUEST
PROCESS OVERVIEW

- Aero Device Approval Request
  1) Present Pre-test Plan To CARB For Review
  2) Obtain Approval Request Form Via Email or CARB Website
  3) Conduct Pre-Application Activities
  4) Meet Standard Tractor Requirements In Accordance With Reg. Requirement
  5) Determine Standard Tractor Bins In Accordance With Reg. Requirement
  6) Decide on Aerodynamic Testing Options Based On Trailer Model Year
  7) Determine Trailer Aerodynamic Bins Using Measured Delta CdA
  8) Email Complete Application Package To CARB
AERO DEVICE APPROVAL REQUEST
(1) PRE-TEST PLAN

- Provide CARB with a proposed schedule/test plan
  - Purpose
  - Approach
  - Timing
  - Test Facility
  - Test Method
  - Test Conditions
  - Tractor Specifications
  - Trailer Specifications
  - Pre-Test Requirements

- Provide CARB with adequate notice in case CARB wants to observe the testing

- You may skip a pre-test plan review/approval if you submit proof of U.S. EPA’s prior pre-test plan approval
Obtain Approval Request Form

- Download from CARB’s website @
  https://www.arb.ca.gov/cc/hdghg/meetings/ttghg_interim_aero_approval_request_form_20190215.pdf

- Send email to TTGHG.Interim-AeroApproval@arb.ca.gov

Review the approval request form to understand what is required in a complete application
### TESTING METHOD

The default method (primary) for measuring $C_{dA}$ values is the wind-tunnel procedure. If we approve it in advance, you may instead use one of the alternate methods of CFD or Coastdown, consistent with good engineering judgment, which may require that you adjust your test results from the alternate test method to correlate with the primary method. We may require that you use coastdown measurements if we determine that certain technologies are not suited to evaluation with wind-tunnel testing or CFD, such as nonrigid materials whose physical characteristics change in scaled-model testing.

- [ ] CFD
- [ ] Coastdown
- [ ] Wind Tunnel

### 4.1.4 Domain Boundary Conditions:

### 4.1.5 Simulation Model:

### 4.1.6 Cooling Fan Model:

### 4.1.7 Numerical Model:

**Determine $C_{dA}$ values for certifying trailers:**

| 40 CFR 1037.530(c) |  
|---------------------|---------------------|
| (c) Use a standard tractor: | Yes | No |
| (c) Use a moving/rolling floor: | Yes | No |
| (c) Measure the drag area at $+4.5^\circ$ and $-4.5^\circ$ yaw angles | Yes | No |
| (c) Calculate the average of drag area at $+4.5^\circ$ and $-4.5^\circ$ yaw angles | Yes | No |
(3) PRE-APPLICATION ACTIVITIES

- Conduct aerodynamic testing
  - Collect data from Phase 2 test procedures

- Complete Approval Form
  - Check all the relevant boxes
  - Answer all the related questions
  - Attach all the requested documents

- Decide which trailer types are suitable for the device

- Trailer manufacturers: include whether you will make your device commercially available

- Evaluate to what extent trailer manufacturers may combine the device with other devices sold separately
For Phase 2 test procedures measure CdA using a standard tractor meeting the requirements of 40 CFR 1037.501(h) which can include a model of a certified standard tractor.

CARB will allow the use of models of non-certified tractors for Phase 2 testing of aerodynamic trailer devices through model year 2020.

Such models should have a shape and features resembling those of tractors in common commercial use, and have aerodynamic performance equivalent to Bin III or better.
Use a standard tractor for measuring aerodynamic drag of trailers. Standard tractors must be certified at Bin III (or more aerodynamic if a Bin III tractor is unavailable) for Phase 1 or Phase 2 under §1037.520(b)(1) or (3).

The standard tractor for long trailers is a Class 8 high-roof sleeper cab.

The standard tractor for short trailers is a Class 7 or Class 8 high-roof day cab with a 4 × 2 drive-axle configuration.
## AERO DEVICE APPROVAL REQUEST

### (5) STANDARD TRACTOR BIN DETERMINATION UNDER §1037.520 (b) (1)

<table>
<thead>
<tr>
<th>Tractor type</th>
<th>Bin level</th>
<th>If your measured $\Delta C_d A$ (m²) is…</th>
<th>Then your $C_d$ input is…</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Roof Day Cabs</td>
<td>Bin I</td>
<td>$\geq 8.0$</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>Bin II</td>
<td>7.1-7.9</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Bin III</td>
<td>6.2-7.0</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>Bin IV</td>
<td>5.6-6.1</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>Bin V</td>
<td>$\leq 5.5$</td>
<td>0.51</td>
</tr>
<tr>
<td>High-Roof Sleeper Cabs</td>
<td>Bin I</td>
<td>$\geq 7.6$</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>Bin II</td>
<td>6.8-7.5</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td>Bin III</td>
<td>6.3-6.7</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>Bin IV</td>
<td>5.6-6.2</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Bin V</td>
<td>$\leq 5.5$</td>
<td>0.47</td>
</tr>
</tbody>
</table>
### Table 3 of §1037.520—Bin Determinations for Phase 2 High-Roof Tractors Based on Aerodynamic Test Results

\[C_dA\text{ in m}^2\]

<table>
<thead>
<tr>
<th>Tractor type</th>
<th>Bin I</th>
<th>Bin II</th>
<th>Bin III</th>
<th>Bin IV</th>
<th>Bin V</th>
<th>Bin VI</th>
<th>Bin VII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day Cabs</td>
<td>≥7.2</td>
<td>6.6-7.1</td>
<td>6.0-6.5</td>
<td>5.5-5.9</td>
<td>5.0-5.4</td>
<td>4.5-4.9</td>
<td>≤4.4</td>
</tr>
<tr>
<td>Sleeper Cabs</td>
<td>≤6.9</td>
<td>6.3-6.8</td>
<td>5.7-6.2</td>
<td>5.2-5.6</td>
<td>4.7-5.1</td>
<td>4.2-4.6</td>
<td>≤4.1</td>
</tr>
</tbody>
</table>

### Table 5 of §1037.520—Phase 2 \(C_d A\) Tractor Inputs Based on Bin Level

<table>
<thead>
<tr>
<th>Tractor type</th>
<th>Bin I</th>
<th>Bin II</th>
<th>Bin III</th>
<th>Bin IV</th>
<th>Bin V</th>
<th>Bin VI</th>
<th>Bin VII</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Roof Day Cabs</td>
<td>7.45</td>
<td>6.85</td>
<td>6.25</td>
<td>5.70</td>
<td>5.20</td>
<td>4.70</td>
<td>4.20</td>
</tr>
<tr>
<td>High-Roof Sleeper Cabs</td>
<td>7.15</td>
<td>6.55</td>
<td>5.59</td>
<td>5.40</td>
<td>4.90</td>
<td>4.40</td>
<td>3.90</td>
</tr>
<tr>
<td>Low-Roof Cabs</td>
<td>6.00</td>
<td>5.60</td>
<td>5.15</td>
<td>4.75</td>
<td>4.40</td>
<td>4.10</td>
<td>3.80</td>
</tr>
<tr>
<td>Mid-Roof Cabs</td>
<td>7.00</td>
<td>6.65</td>
<td>6.25</td>
<td>5.85</td>
<td>5.50</td>
<td>5.20</td>
<td>4.90</td>
</tr>
</tbody>
</table>
## AERO DEVICE APPROVAL REQUEST
(6) AERODYNAMIC TESTING OPTIONS

<table>
<thead>
<tr>
<th>MODEL YEAR</th>
<th>PROGRAM OPTIONS</th>
<th>TEST PROCEDURE (40 CFR 1037.526)</th>
<th>STANDARD TRACTOR OPTIONS</th>
</tr>
</thead>
</table>
| 2018-2019  | TTGHG INTERIM AERO DEVICE APPROVAL (Pre-Approved Device) | - Collect data using Phase 2 test procedures [CFD (Computational fluid dynamics), Coastdown or Wind-Tunnel]  
- Submit $\Delta C_d A$ data to CARB for pre-approval  
- Pre-approved data become available for trailer OEMs to use for compliance | Model resembles tractor in common commercial use with Bin III or a higher BIN, or better performance |
| 2020 & Later | CA PHASE 2 GHG (Pre-Approved Device) (Trailer Certification) | - Collect data using Phase 2 test procedures [CFD (Computational fluid dynamics), Coastdown or Wind-Tunnel]  
- Device Manufacturers submit $\Delta C_d A$ data to CARB for pre-approval  
- Pre-approved data become available for trailer OEMs to use for certification  
- Trailer Manufacturers submit $\Delta C_d A$ data to CARB for certification  
- Data may be resubmitted annually to CARB for compliance | Model of a tractor that has been certified at Bin III or a higher BIN, or actual tractor if coastdown is used |
AERODYNAMIC BINS DETERMINATION

- Aerodynamic bins help account for uncertainties in testing and reduce test burden
- **Preliminary approvals of aero devices do not involve assigning any bins**
  - Each approval letter will identify the device’s $\Delta C_dA$ value
- Trailer manufacturers will choose an appropriate bin for certification based on the test results of all devices used with a trailer configuration
  - Trailer manufacturers may apply approved data from multiple devices in combination (40 CFR 1037.526(c))
  - May combine $\Delta C_dA$ values for aerodynamic devices that are not tested together, as long as each device does not significantly impair the effectiveness of another
  - Calculate a composite $\Delta C_dA$ value for multiple aerodynamic devices by applying the full $\Delta C_dA$ value for the device with the greatest aerodynamic improvement, adding the second-highest $\Delta C_dA$ value multiplied by 0.9, and adding any other $\Delta C_dA$ values multiplied by 0.8
If a trailer's measured $\Delta C_d A$ is……… Designate the trailer as: And use the following value for $\Delta C_d A$

| $\leq 0.09$ | Bin I | 0.0 |
| 0.10-0.39 | Bin II | 0.1 |
| 0.40-0.69 | Bin III | 0.4 |
| 0.70-0.99 | Bin IV | 0.7 |
| 1.00-1.39 | Bin V | 1.0 |
| 1.40-1.79 | Bin VI | 1.4 |
| $\geq 1.80$ | Bin VII | 1.8 |
Submit trailer aero device approval requests by email (the complete application package) to TTGHG.Interim-AeroApproval@arb.ca.gov.

Combine all information into one electronic file (pdf).

Email subject must contain following:
- “Request Preliminary Approval” + Device Name
- Manufacturer code as assigned by U.S. EPA
- Test Method
AERO DEVICE APPROVAL REQUEST ELEMENTS

- Aero Device Approval Request Elements
  - Cover Letter
  - Completed Approval Request Form
  - Attestation Statement
  - Warranty
  - Maintenance Instructions
AERO DEVICE APPROVAL REQUEST ELEMENTS
COVER LETTER

- Include manufacturer information:
  - Manufacturer contact information (Legal Name, Address, Phone/fax number and website)
  - Specify contacts for CARB (Primary contact for questions: name, title, phone and email addresses)

- Include device information:
  - Specify trailer type (Long/Short; Dry/Refrigerated van trailer)
  - Statement that the device complies with all applicable CARB regulations

- Include test facility information

- Provide short description of any supporting documents submitted with approval request application

- Provide list of attachments

- Include signature of an authorized company representative
AERO DEVICE APPROVAL REQUEST ELEMENTS
COMPLETED APPROVAL REQUEST FORM

- Answer all the fields on “General information Sections”
- Clearly specify the conducted test method
- Answer all the fields associated with the conducted test method
- Submit completed approval request with your approval request package
Include the following statement attesting that testing was conducted properly

“The aerodynamic performance data for the device(s) described in this document are based on testing at [insert name, location of test facility]. The tests were completed in accordance with methods specified in title 17, California Code of Regulations section 95303(b)(4), using [insert test method].”
AERO DEVICE APPROVAL REQUEST ELEMENTS

WARRANTY

- Include a copy of the emissions warranty statement that will be provided to the ultimate purchaser of the trailer
- Warranty period:
  - 5 years for aerodynamic devices that are included in the certified configuration
  - See 40 CFR 1037.120(b)(iii) Criteria pollutant emission related parts
AERO DEVICE APPROVAL REQUEST ELEMENTS
MAINTENANCE INSTRUCTIONS

- If applicable, provide a copy of any maintenance instructions provided to the ultimate purchaser of the trailer.

- Explain the owner’s responsibility for proper maintenance in the owners manual:
  - Include instructions that will enable the owner to maintain devices so that the vehicle continues to conform to the original certified vehicle configuration (See 40 CFR 1037.125).
  - Trailer useful life is 10 years (See 40 CFR 1037.107(c)).
HOW TO SUBMIT REQUEST FOR APPROVAL

- Combine all information for your request for device approval into one electronic file*
  - Manufacturer code
  - Manufacturer name & address
  - Name/address of test facility
  - Device model/trade name
  - Device description, including single or package
  - Incompatibilities with other devices
  - Suitable trailer subcategories
  - Description of testing facility and test protocol
  - Component part numbers
  - Testing attestation statement
  - Installation instructions
  - Warranty statement
  - Maintenance instructions
  - If also trailer OEM, commercial availability
  - Summary of test results including any necessary calculations
  - All test results must be submitted as $\Delta C_d A$ in m$^2$, to 2 decimal places
  - Description of testing facility and test protocol
  - Description of standard tractor and its aerodynamic performance level (§1037.501(h))
  - Description of the tested trailer, both as baseline “A” and with improvements “B”

- Review & Submit when you are ready to complete your request

* More information is provided on the Approval Request
Questions?
CARB REVIEW AND APPROVAL
OVERVIEW OF STEPS

- CARB staff will review your submission
  - We will work with you to help make sure the request is complete
  - We may ask for additional information
- When all regulatory requirements are satisfied, we will issue an approval letter
  - The approval letter will be e-mailed to the company contact designated as the “Primary Contact” in the cover letter
  - It will include a 14-character device ID number that may be used by trailer manufacturers when identifying selected devices at the time of trailer certification
  - Devices will be identified as an approved aerodynamic technology on CARB’s website
- Approvals using Phase 2 procedures will be valid unless/until amended or revoked
- Trailer Manufacturer Specifies Use of Device
  - Must include device approval number in request for Trailer Certification
CARB REVIEW AND APPROVAL CONDITIONS

- **Recordkeeping**
  - Maintain records for 8 years documenting measured aerodynamic performance of approved devices

- **Recalls**
  - CARB may ask you to recall nonconforming products under 40 CFR 1068.505

- **California confirmatory and in-use testing**
  - CARB may request your device to conduct our own testing.

- **Revocation**
  - CARB may revoke an approval if the terms and conditions are not met
CARB REVIEW AND APPROVAL
POST-APPROVAL CHANGES

- Post-Approval Changes are changes to components or other changes that would make the emissions inconsistent with the information in your application (See 40 CFR 1037.225)
  - If you make design changes to devices, they may not be covered by an existing approval
- CARB may issue approvals based on a range of products in a group with similar emissions characteristics
- Revision process is same as for new Request for Approval
  - If you are uncertain whether you need to request a new approval, email TTGHG.Interim-AeroApproval@arb.ca.gov
INFORMATION ABOUT PROGRAM PRESENTATION AND FORM

- TTGHG Interim Aero Device Approval Program information

- A copy of this presentation will be available on the CARB’s web page
  - https://www.arb.ca.gov/cc/hdghg/meetings/ttghg_interim_aero_workshop_slides_20190215.pdf

- A copy of approval request form will be available on the CARB’s web page
  - https://www.arb.ca.gov/cc/hdghg/meetings/ttghg_interim_aeroApproval_request_form_20190215.pdf
STAY CURRENT WITH PROGRAM UPDATES
SIGN UP FOR GOVDELIVERY

- Subscribe to the GovDelivery
  - Receive status updates on system developments and outages
  - Receive information on upcoming events
  - Interested manufacturers should subscribe by going to https://public.govdelivery.com/accounts/CARB/subscriber/new?topic_id=caphase2ghg that includes the email address(es) to be added to the GovDelivery
INTERIM AERO DEVICE APPROVAL PROGRAM
CONTACT INFORMATION

- Moslem Hossein Mardi, Air Resources Engineer
  Off-Road Control Section
  Email: Moslem.Hossein-Mardi@arb.ca.gov
  Phone: (916) 440-8282

- Ronald Haste, Manager
  Off-Road Control Section
  Email: Ron.Haste@arb.ca.gov
  Phone: (626) 575-6676
Questions?
PHASE 2 GHG TRAILER CERTIFICATION
CA trailer standards aligned with U.S. EPA’s Phase 2 Trailer Standards

Implementation begins with 2020 MY in CA

Manufacturers must California-certify certain trailers that are manufactured for sale in California starting with 2020 MY, manufactured on or after Jan. 1, 2020

Workshop on Trailer Certification Process to provide further guidance to manufacturers
- March 25, 2019
- Modeled after U.S. EPA’s Trailer Implementation Workshop
Phase in standards:
- 2020, 2021, 2024, 2027 MYs

Trailer technologies:
- Aerodynamic improvements
- Low rolling resistance tires
- Tire pressure systems (TPMS/ATIS)
- Weight reduction

### CO2 Standards (g/ton-mile)

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Dry Van</th>
<th>Refrigerated Van</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long</td>
<td>Short</td>
</tr>
<tr>
<td>2020</td>
<td>81.3</td>
<td>125.4</td>
</tr>
<tr>
<td>2021-2023</td>
<td>78.9</td>
<td>123.7</td>
</tr>
<tr>
<td>2024-2026</td>
<td>77.2</td>
<td>120.9</td>
</tr>
<tr>
<td>2027+</td>
<td>75.7</td>
<td>118.8</td>
</tr>
</tbody>
</table>
PHASE 2 GHG TRAILER STANDARDS
PARTIAL-AERO BOX TRAILERS

- Less stringent standards
- Phase in standards:
  - 2020, 2021+ MYs
- Trailer technologies:
  - Aerodynamic improvements
  - Low rolling resistance tires
  - Tire pressure systems (TPMS/ATIS)
  - Weight reduction

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Dry Van</th>
<th>Refrigerated Van</th>
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<tr>
<td></td>
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<td></td>
<td>Long</td>
<td>Short</td>
</tr>
<tr>
<td>2020</td>
<td>81.3</td>
<td>125.4</td>
</tr>
<tr>
<td>2021+</td>
<td>80.6</td>
<td>123.7</td>
</tr>
</tbody>
</table>

Partial-aero box trailer

Trailers have side or rear work-performing equipment (WPE)
PHASE 2 GHG TRAILER STANDARDS
NON-AERO BOX AND NON-BOX TRAILERS

- Phase in standards:
  - 2020, 2021+MYs
- Trailer technologies:
  - Low rolling resistance tires
  - Tire pressure systems (TPMS/ATIS)

<table>
<thead>
<tr>
<th>Required Design Specifications</th>
<th>Tire CRR (kg/metric-ton)</th>
<th>Tire Pressure System Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MY 2020</td>
<td>MY 2021+</td>
</tr>
<tr>
<td>Non-Box</td>
<td>≤6.0</td>
<td>≤5.1</td>
</tr>
<tr>
<td>Non-Aero</td>
<td>≤5.1</td>
<td>≤4.7</td>
</tr>
</tbody>
</table>

Non-box trailers
(flatten, tank, and container chassis)

Trailers have both side and rear WPE, or one WPE if refrigerated box vans <35’
CERTIFICATION PROCESS

PRE-APPLICATION

- Letter of Intent
- Authorized Contact Information Sheet
- Obtain Manufacturer Code from USEPA
- Group trailers, define trailer family
- Conduct required testing
- Apply the inputs into the compliance equation

\[ e_{CO2} = \left( C_1 + C_2 \cdot TRRL + C_3 \cdot \Delta C_d A + C_4 \cdot WR \right) \cdot C_5 \]

APPLICATION

- Fill out and submit the certification form
- CARB certification staff will review your documents
- If all regulatory requirements are satisfied, we will issue an Executive Order

CARB staff to send draft certification application to interested manufacturers for comment in near future

- Contact staff if you are interested
Mitzi Magtoto, Air Resources Engineer
Strategic Planning and Development Section
Email: Mitzi.Magtoto@arb.ca.gov
Phone: (916) 323-8975

For further information, go to CA Phase 2 GHG Regulation or email to TrailerCert@arb.ca.gov
If you wish to receive future trailer cert information, please sign up at CA Phase 2 email list
Questions?