

## Environmental Protection Agency

## § 86.1817-05

after title or custody has transferred to the ultimate purchaser, for vehicles meeting the applicable emission standards of this section, the applicable compliance limits shall be determined by adding the applicable adjustment from paragraph (j)(2) of this section to the otherwise applicable standard or FEL.

(2) The in-use adjustments are:

- (i) 0.1 g/mi for NO<sub>x</sub>.
- (ii) 0.100 g/mi NMHC.
- (iii) 0.01 g/mi for PM.

[66 FR 5190, Jan. 18, 2001, as amended at 70 FR 40443, July 13, 2005]

### § 86.1817-05 Complete heavy-duty vehicle averaging, trading, and banking program.

(a) *General.* (1) Complete heavy-duty vehicles eligible for the NO<sub>x</sub> averaging, trading and banking program are described in the applicable emission standards section of this subpart. All heavy-duty vehicles which include an engine labeled for use in clean-fuel vehicles as specified in 40 CFR part 88 are not eligible for this program. Participation in this averaging, trading, and banking program is voluntary.

(2)(i) Test groups with a family emission limit (FEL) as defined in § 86.1803-01 exceeding the applicable standard shall obtain emission credits as defined in § 86.1803-01 in a mass amount sufficient to address the shortfall. Credits may be obtained from averaging, trading, or banking, as defined in § 86.1803-01 within the averaging set restrictions described in paragraph (d) of this section.

(ii) Test groups with an FEL below the applicable standard will have emission credits available to average, trade, bank or a combination thereof. Credits may not be used for averaging or trading to offset emissions that exceed an FEL. Credits may not be used to remedy an in-use nonconformity determined by a Selective Enforcement Audit or by recall testing. However, credits may be used to allow subsequent production of vehicles for the test group in question if the manufacturer elects to recertify to a higher FEL.

(b) *Participation.* Participation in the NO<sub>x</sub> averaging, trading, and banking program shall be done as follows:

(1) During certification, the manufacturer shall:

(i) Declare its intent to include specific test groups in the averaging, trading and banking program.

(ii) Declare an FEL for each test group participating in the program.

(A) The FEL must be to the same level of significant digits as the emission standard (one-hundredth of a gram per mile for NO<sub>x</sub> emissions).

(B) In no case may the FEL exceed the upper limit prescribed in the section concerning the applicable complete heavy-duty vehicle chassis-based NO<sub>x</sub> emission standard.

(iii) Calculate the projected NO<sub>x</sub> emission credits (positive or negative) as defined in § 86.1803-01 based on quarterly production projections for each participating test group, using the applicable equation in paragraph (c) of this section and the applicable factors for the specific test group.

(iv)(A) Determine and state the source of the needed credits according to quarterly projected production for test groups requiring credits for certification.

(B) State where the quarterly projected credits will be applied for test groups generating credits.

(C) Emission credits as defined in § 86.1803-01 may be obtained from or applied to only test groups within the same averaging set as defined in § 86.1803-01. Emission credits available for averaging, trading, or banking, may be applied exclusively to a given test group, or designated as reserved credits as defined in § 86.1803-01.

(2) Based on this information, each manufacturer's certification application must demonstrate:

(i) That at the end of model year production, each test group has a net emissions credit balance of zero or more using the methodology in paragraph (c) of this section with any credits obtained from averaging, trading or banking.

(ii) The source of the credits to be used to comply with the emission standard if the FEL exceeds the standard, or where credits will be applied if the FEL is less than the emission standard. In cases where credits are being obtained, each test group involved must state specifically the

source (manufacturer/test group) of the credits being used. In cases where credits are being generated/supplied, each test group involved must state specifically the designated use (manufacturer/test group or reserved) of the credits involved. All such reports shall include all credits involved in averaging, trading or banking.

(3) During the model year, manufacturers must:

(i) Monitor projected versus actual production to be certain that compliance with the emission standards is achieved at the end of the model year.

(ii) Provide the end-of-year reports required under paragraph (i) of this section.

(iii) For manufacturers participating in emission credit trading, maintain the quarterly records required under paragraph (1) of this section.

(4) Projected credits based on information supplied in the certification application may be used to obtain a certificate of conformity. However, any such credits may be revoked based on review of end-of-model year reports, follow-up audits, and any other compliance measures deemed appropriate by the Administrator.

(5) Compliance under averaging, banking, and trading will be determined at the end of the model year. Test groups without an adequate amount of NO<sub>x</sub> emission credits will violate the conditions of the certificate of conformity. The certificates of conformity may be voided ab initio for test groups exceeding the emission standard.

(6) If EPA or the manufacturer determines that a reporting error occurred on an end-of-year report previously submitted to EPA under this section, the manufacturer's credits and credit calculations will be recalculated. Erroneous positive credits will be void. Erroneous negative balances may be adjusted by EPA for retroactive use.

(i) If EPA review of a manufacturer's end-of-year report indicates a credit shortfall, the manufacturer will be permitted to purchase the necessary credits to bring the credit balance for that test group to zero, at the ratio of 1.2 credits purchased for every credit needed to bring the balance to zero. If sufficient credits are not available to bring

the credit balance for the test group in question to zero, EPA may void the certificate for that test group ab initio.

(ii) If within 180 days of receipt of the manufacturer's end-of-year report, EPA review determines a reporting error in the manufacturer's favor (i.e. resulting in a positive credit balance) or if the manufacturer discovers such an error within 180 days of EPA receipt of the end-of-year report, the credits will be restored for use by the manufacturer.

(c) *Calculations.* For each participating test group, NO<sub>x</sub> emission credits (positive or negative) are to be calculated according to one of the following equations and rounded, in accordance with ASTM E29-93a (incorporated by reference at § 86.1), to the nearest one-tenth of a Megagram (MG). Consistent units are to be used throughout the equation.

(1) For determining credit need for all test groups and credit availability for test groups generating credits for averaging only:

$$\text{Emission credits} = (\text{Std-FEL}) \times (\text{UL}) \times (\text{Production}) \times (10^{-6})$$

(2) For determining credit availability for test groups generating credits for trading or banking:

$$\text{Emission credits} = (\text{Std-FEL}) \times (\text{UL}) \times (\text{Production}) \times (10^{-6}) (\text{Discount})$$

(3) For purposes of the equations in paragraphs (c)(1) and (c)(2) of this section:

Std = the current and applicable complete heavy-duty vehicle NO<sub>x</sub> emission standard in grams per mile or grams per kilometer. Std = 0.9 grams per mile for heavy-duty vehicles at and above 8,500 pounds Gross Vehicle Weight Rating but equal to or less than 10,000 Gross Vehicle Weight Rating pounds and 1.0 grams per mile for heavy-duty vehicles above 10,000 pounds Gross Vehicle Weight Rating but less than 14,000 pounds Gross Vehicle Weight Rating for cases where certification to chassis-based standards is optional for purposes of early credit banking.

FEL = the NO<sub>x</sub> family emission limit for the test group in grams per mile or grams per kilometer.

UL = the useful life, or alternative life as described in paragraph (c) of § 86.1805-01, for the given test group in miles or kilometers.

Production = the number of vehicles produced for U.S. sales within the given test

group during the model year. Quarterly production projections are used for initial certification. Actual production is used for end-of-year compliance determination.

Discount = a one-time discount applied to all credits to be banked or traded within the model year generated. Except as otherwise allowed in paragraph (m) of this section, the discount applied here is 0.9. Banked credits traded in a subsequent model year will not be subject to an additional discount. Banked credits used in a subsequent model year's averaging program will not have the discount restored.

(d) *Averaging sets.* The averaging and trading of NO<sub>x</sub> emission credits will be allowed between all test groups of heavy-duty vehicles subject to chassis-based standards excluding those vehicles produced for sale in California. Averaging, banking, and trading are not applicable to vehicles sold in California.

(e) *Banking of NO<sub>x</sub> emission credits—*  
(1) *Credit deposits.* (i) NO<sub>x</sub> emission credits may be banked from test groups produced in 2000 and later model years. Early banking is described in paragraph (n) of this section.

(ii) Manufacturers may bank credits only after the end of the model year and after actual credits have been reported to EPA in the end-of-year report. During the model year and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved and may be redesignated for trading or averaging.

(2) *Credit withdrawals.* (i) NO<sub>x</sub> credits do not expire, except as provided in paragraph (o)(2) of this section.

(ii) Manufacturers withdrawing banked emission credits shall indicate so during certification and in their credit reports, as described in paragraph (i) of this section.

(3) *Use of banked emission credits.* The use of banked credits shall be within the averaging set and geographic restrictions described in paragraph (d) of this section, and only for the following purposes:

(i) Banked credits may be used in averaging, or in trading, or in any combination thereof, during the certification period. Credits declared for banking from the previous model year but not reported to EPA may also be used. However, if EPA finds that the

reported credits cannot be proven, they will be revoked and unavailable for use.

(ii) Banked credits may not be used for averaging and trading to offset emissions that exceed an FEL. Banked credits may not be used to remedy an in-use nonconformity determined by a Selective Enforcement Audit or by recall testing. However, banked credits may be used for subsequent production of the test group if the manufacturer elects to recertify to a higher FEL.

(f) *Negative credit balance.* In the event of a negative credit balance in a trading situation, both the buyer and the seller would be liable.

(g) *Fuel.* Certification fuel used for credit generation must be of a type that is both available in use and expected to be used by the vehicle purchaser. Therefore, upon request by the Administrator, the vehicle manufacturer must provide information acceptable to the Administrator that the designated fuel is readily available commercially and would be used in customer service.

(h) *Credit apportionment.* At the manufacturer's option, credits generated from complete heavy-duty vehicles under the provisions described in this section may be sold to or otherwise provided to another party for use in programs other than the averaging, trading and banking program described in this section.

(1) The manufacturer shall pre-identify two emission levels per test group for the purposes of credit apportionment. One emission level shall be the FEL and the other shall be the level of the standard that the test group is required to certify under § 86.1816-04. For each test group, the manufacturer may report vehicle sales in two categories, "ABT-only credits" and "nonmanufacturer-owned credits".

(i) For vehicle sales reported as "ABT-only credits", the credits generated must be used solely in the averaging, trading and banking program described in this section.

(ii) The vehicle manufacturer may declare a portion of vehicle sales "nonmanufacturer-owned credits" and this portion of the credits generated between the standard and the FEL, based on the calculation in paragraph

(c)(1) of this section, would belong to the vehicle purchaser. The manufacturer may not generate any credits for the vehicle sales reported as “non-manufacturer-owned credits” for this averaging, trading and banking program. Vehicles reported as “nonmanufacturer-owned credits” shall comply with the FEL and the requirements of this averaging, trading and banking program in all other respects.

(2) Only manufacturer-owned credits reported as “ABT-only credits” shall be used in the averaging, trading, and banking provisions described in this section.

(3) Credits shall not be double-counted. Credits used in this averaging, trading and banking program may not be provided to a vehicle purchaser for use in another program.

(4) Manufacturers shall determine and state the number of vehicles sold as “ABT-only credits” and “nonmanufacturer-owned credits” in the end-of-model year reports required under paragraph (i) of this section.

(i) *Application for certification and end-of-year reports.* Manufacturers participating in the emissions averaging, trading and banking program, shall submit for each participating test group the items listed in paragraphs (i)(1) through (3) of this section.

(1) *Application for certification.* (i) The application for certification will include a statement that the vehicles for which certification is requested will not, to the best of the manufacturer’s belief, when included in the averaging, trading and banking program, cause the applicable NO<sub>x</sub> emissions standard to be exceeded.

(ii) The application for certification will also include identification of the section of this subpart under which the test group is participating in the averaging, trading and banking program (e.g., § 86.1817-05), the type (NO<sub>x</sub>), and the projected number of credits generated/needed for this test group, the applicable averaging set, the projected U.S. production volumes (excluding vehicles produced for sale in California), by quarter, and the values required to calculate credits as given in the applicable averaging, trading and banking section. Manufacturers shall also submit how and where credit surpluses are

to be dispersed and how and through what means credit deficits are to be met, as explained in the applicable averaging, trading and banking section. The application must project that each test group will be in compliance with the applicable emission standards based on the vehicle mass emissions and credits from averaging, trading and banking.

(2) [Reserved]

(3) *End-of-year report.* The manufacturer shall submit end-of-year reports for each test group participating in the averaging, trading and banking program, as described in paragraphs (i)(3)(i) through (iv) of this section.

(i) These reports shall be submitted within 90 days of the end of the model year to: Director, Certification and Compliance Division, U.S. Environmental Protection Agency, Mail Code 6405J, 1200 Pennsylvania Ave., NW., 20460.

(ii) These reports shall indicate the test group, the averaging set, the actual U.S. production volume (excluding vehicles produced for sale in California), the values required to calculate credits as given in the applicable averaging, trading and banking section, and the resulting type and number of credits generated/required. Manufacturers shall also submit how and where credit surpluses were dispersed (or are to be banked) and how and through what means credit deficits were met. Copies of contracts related to credit trading must also be included or supplied by the broker if applicable. The report shall also include a calculation of credit balances to show that net mass emissions balances are within those allowed by the emission standards (equal to or greater than a zero credit balance). Any credit discount factor described in the applicable averaging, trading and banking section must be included as required.

(iii) The production counts for end-of-year reports shall be based on the location of the first point of retail sale (e.g., customer, dealer, secondary manufacturer) by the manufacturer.

(iv) Errors discovered by EPA or the manufacturer in the end-of-year report, including changes in the production counts, may be corrected up to 180 days subsequent to submission of the end-of-

year report. Errors discovered by EPA after 180 days shall be corrected if credits are reduced. Errors in the manufacturer's favor will not be corrected if discovered after the 180 day correction period allowed.

(j) *Failure to submit quarterly or end-of-year reports.* Failure by a manufacturer participating in the averaging, trading and banking program to submit any quarterly or end-of-year report (as applicable) in the specified time for all vehicles that are part of an averaging set is a violation of section 203(a)(1) of the Clean Air Act (42 U.S.C. 7522(a)(1)) for such vehicles.

(k) *Failure to submit end-of-year reports for banked credits.* Failure by a manufacturer generating credits for deposit only in the complete heavy-duty vehicle banking program to submit their end-of-year reports in the applicable specified time period (i.e., 90 days after the end of the model year) shall result in the credits not being available for use until such reports are received and reviewed by EPA. Use of projected credits pending EPA review will not be permitted in these circumstances.

(l) *Quarterly records.* Any manufacturer producing a test group participating in trading using reserved credits, shall maintain the following records on a quarterly basis for each test group in the trading subclass:

- (1) The test group;
- (2) The averaging set;
- (3) The actual quarterly and cumulative U.S. production volumes excluding vehicles produced for sale in California;
- (4) The values required to calculate credits as given in paragraph (c) of this section;
- (5) The resulting type and number of credits generated/required;
- (6) How and where credit surpluses are dispersed; and
- (7) How and through what means credit deficits are met.

(m) *Additional flexibility for complete heavy-duty vehicles.* If a complete heavy-duty vehicle has a NO<sub>x</sub> FEL of 0.6 grams per mile or lower, a discount of 1.0 may be used in the trading and banking credits calculation for NO<sub>x</sub> described in paragraph (c)(2) of this section.

(n) *Early banking for complete heavy-duty vehicles.* Provisions set forth in paragraphs (a) through (m) of this section apply except as specifically stated otherwise in this paragraph (n).

(1) *Early banking eligibility.* To be eligible for the early banking program described in this paragraph, the following must apply:

(i) Credits are generated from complete heavy-duty vehicles.

(ii) During certification, the manufacturer shall declare its intent to include specific test groups in the early banking program described in this paragraph (n).

(2) *Credit generation and use.* (i) Early credits may be generated by test groups starting in model year 2000.

(ii) Credits may only be used for complete heavy-duty vehicles subject to chassis-based standards, except as provided by paragraph (o) in this section, and all credits shall be subject to discounting and all other provisions contained in paragraphs (a) through (m) of this section.

(o) *Credit transfers.* A manufacturer that elects to comply with Option 1 or 2 contained in §86.005-10(f) may transfer credits between its complete vehicle averaging set and its heavy-duty Otto-cycle engine averaging set as follows:

(1) Credits earned in model years 2004 (2003 for Option 1) through 2007 are eligible to be transferred.

(2) Transferred credits may not be banked for use in model years 2008 and later. Credits that are transferred but not used prior to model year 2008 must be forfeited.

(3) Prior to transferring credits, a manufacturer must develop a methodology to transfer the credits including a conversion factor that may be used to convert between chassis-based credits (derived on a grams per mile basis) and equivalent engine-based credits (derived on a grams per brake horsepower-hour basis). The methodology must be approved by EPA prior to the start of the model year in which the credits are to be transferred. The conversion factor must provide reasonable certainty that the credits are equivalent for the specific vehicle test group(s) and engine family(s) involved

## § 86.1817-08

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in the generation and use of the credits.

[65 FR 59971, Oct. 6, 2000, as amended at 71 FR 2830, Jan. 17, 2006]

### **§ 86.1817-08 Complete heavy-duty vehicle averaging, trading, and banking program.**

Section 86.1817-08 includes text that specifies requirements that differ from § 86.1817-05. Where a paragraph in § 86.1817-05 is identical and applicable to § 86.1817-08, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.1817-05.”

(a) through (o) [Reserved]. For guidance see § 86.1817-05.

(p) The following provisions apply for model year 2008 and later engines. These provisions apply instead of the provisions of paragraphs § 86.1817-05 (a) through (o) to the extent that they are in conflict.

(1) Manufacturers of Otto-cycle vehicles may participate in an NMHC averaging, banking and trading program to show compliance with the standards specified in § 86.1806-08. The generation and use of NMHC credits are subject to the same provisions in paragraphs § 86.1817-05 (a) through (o) that apply for NO<sub>x</sub> credits, except as otherwise specified in this section.

(2) NO<sub>x</sub> or NMHC (or NO<sub>x</sub> plus NMHC) credits may be exchanged between heavy-duty Otto-cycle test groups certified to the engine standards of subpart A of this part and heavy-duty Otto-cycle test groups certified to the chassis standards of this subpart, subject to an 0.8 discount factor (e.g., 100 grams of NO<sub>x</sub> credits generated from vehicles would be equivalent to 80 grams of NO<sub>x</sub> credits if they are used in the engine program of subpart A of this part, and vice versa). Credits that were previously discounted when they were banked according to § 86.1817-05(c), are subject to an additional discount factor of 0.888 instead of the 0.8 discount factor otherwise required by this paragraph (p)(2). This results in a total discount of 0.8 ( $0.9 \times 0.888 = 0.8$ ).

(3) Credits are to be rounded to the nearest one-hundredth of a Megagram.

(4) To calculate credits relative to the NO<sub>x</sub> standards listed in § 86.1816-08 (a)(1)(iv)(A) or (a)(2)(iv)(A) (0.2 or 0.4

grams per mile, respectively) express the standard and FEL to the nearest one-hundredth of a gram per mile prior to calculating the credits. Thus, either 0.20 or 0.40 should be used as the value for “Std”.

(5) Credits generated for 2008 and later model year test groups are not discounted (except as specified in § 86.1817-05(c) and paragraph (p)(2) of this section), and do not expire.

(6) For the purpose of using or generating credits during a phase-in of new standards, a manufacturer may elect to split a test group into two subgroups: one which uses credits and one which generates credits. The manufacturer must indicate in the application for certification that the test group is to be split, and may assign the numbers and configurations of vehicles within the respective subfamilies at any time prior to the submission of the end-of-year report described in § 86.1817-05 (i)(3). Manufacturers certifying a split test group may label all of the vehicles within that test group with the same FELs: either with a NO<sub>x</sub> FEL and an NMHC FEL, or with a single NO<sub>x</sub>+NMHC FEL. The FEL(s) on the label will apply for all SEA or other compliance testing.

(7) Vehicles meeting all of the applicable standards of § 86.1816-08 prior to model year 2008 may generate NMHC credits for use by 2008 or later test groups. Credits are calculated according to § 86.1817-05(c), except that the applicable FEL cap listed in § 86.1816-08(a)(1)(ii)(B) or (2)(ii)(B) applies instead of “Std” (the applicable standard).

[66 FR 5192, Jan. 18, 2001]

### **§ 86.1818-12 Greenhouse gas emission standards for light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles.**

(a) *Applicability.* This section contains standards and other regulations applicable to the emission of the air pollutant defined as the aggregate group of six greenhouse gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. This section applies to 2012 and later model year LDVs, LDTs and MDPVs, including multi-fuel vehicles, vehicles fueled