§ 89.206 Trading.

(a) Requirements for Tier 1 engines rated at or above 37 kW. (1) A nonroad engine manufacturer may exchange emission credits with other nonroad engine manufacturers within the same averaging set in trading.

(b) Requirements for Tier 2 and later engines rated at or above 37 kW and Tier 1 and later engines rated under 37 kW. (1) A nonroad engine manufacturer may exchange emission credits with other nonroad engine manufacturers within the same averaging set in trading.

(c) In the event of a negative credit balance resulting from a transaction, both the buyer and the seller are liable, except in cases deemed involving fraud. Certificates of all engine families participating in a negative trade may be voided ab initio under § 89.126(c).

§ 89.207 Credit calculation.

(a) Requirements for calculating NO\textsubscript{X} credits from Tier 1 engines rated at or above 37 kW. (1) For each participating engine family, emission credits (positive or negative) are to be calculated
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acquiring to one of the following equations and rounded, in accordance with ASTM E29-93a, to the nearest one-hundredth of a megagram (Mg). This ASTM procedure has been incorporated by reference (see §89.6). Consistent units are to be used throughout the equation.

(i) For determining credit availability from all engine families generating credits: Emission credits = (Std − FEL) × (Volume) × (AvgPR) × (UL) × (Adjustment) × (10⁻⁶)

(ii) For determining credit usage for all engine families requiring credits to offset emissions in excess of the standard:

Emission credits = (Std − FEL) × (Volume) × (AvgPR) × (UL) × (10⁻⁶)

Where:

Std = the applicable Tier 1 NOₓ nonroad engine emission standard, in grams per kilowatt-hour.

FEL = the NOₓ family emission limit for the engine family in grams per kilowatt-hour.

Volume = the number of nonroad engines eligible to participate in the averaging, banking, and trading program within the given engine family during the model year. Engines sold to equipment or vehicle manufacturers under the provisions of §89.102(g) shall not be included in this number. Quarterly production projections are used for initial certification. Actual applicable production/sales volume is used for end-of-year compliance determination.

AvgPR = the average power rating of all of the configurations within an engine family, calculated on a sales-weighted basis, in kilowatts.

UL = the useful life for the engine family, in hours.

Adjustment = a one-time adjustment, as specified in paragraph (a)(2) of this section, to be applied to Tier 1 NOₓ credits to be banked or traded for determining compliance with the Tier 1 NOₓ standards or Tier 2 NOₓ+NMHC standards specified in subpart B of this part. Banked credits traded in a subsequent model year will not be subject to an additional adjustment. Banked credits used in a subsequent model year’s averaging program will not have the adjustment restored.

(2) If an engine family is certified to a NOₓ FEL of 8.0 g/kW-hr or less, an Adjustment value of 1.0 shall be used in the credit generation calculation described in paragraph (a)(1)(i) of this section. If an engine family is certified to a NOₓ FEL above 8.0 g/kW-hr, an Adjustment value of 0.65 shall be used in the credit generation calculation described in paragraph (a)(1)(i) of this section. If the credits are to be used by the credit-generating manufacturer for averaging purposes in the same model year in which they are generated, an Adjustment value of 1.0 shall be used for all engines regardless of the level of the NOₓ FEL. If the credits are to be banked by the credit-generating manufacturer and used in a subsequent model year for another Tier 1 engine family, an Adjustment value of 1.0 shall be used for all engines regardless of the level of the NOₓ FEL.

(b) Requirements for calculating NMHC + NOₓ Credits from Tier 2 and later engines rated at or above 37 kW and Tier 1 and later engines rated under 37 kW and PM credits from all engines. (1) For each participating engine family, NOₓ + NMHC emission credits and PM emission credits (positive or negative) are to be calculated according to one of the following equations and rounded, in accordance with ASTM E29-93a, to the nearest one-hundredth of a megagram (Mg). This procedure has been incorporated by reference (see §89.6). Consistent units are to be used throughout the equation.

(i) For determining credit availability from all engine families generating credits:

Emission credits = (Std − FEL) × (Volume) × (AvgPR) × (UL) × (10⁻⁶)

(ii) For determining credit usage for all engine families requiring credits to offset emissions in excess of the standard:

Emission credits = (Std − FEL) × (Volume) × (AvgPR) × (UL) × (10⁻⁶)

Where:

Std = the current and applicable nonroad engine emission standard, in grams per kilowatt-hour, except for PM calculations where it is the applicable nonroad engine Tier 2 PM emission standard, and except for engines rated under 19 kW where it is the applicable nonroad engine Tier 2 emission standard, in grams per kilowatt-hour. (Engines rated under 19 kW participating in the averaging and banking program provisions of §89.263(c)(3)(i) shall use the Tier 1 standard for credit calculations.)
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FEL = the family emission limit for the engine family in grams per kilowatt-hour.

Volume = the number of nonroad engines eligible to participate in the averaging, banking, and trading program within the given engine family during the model year. Engines sold to equipment or vehicle manufacturers under the provisions of §89.102(g) shall not be included in this number. Quarterly production projections are used for initial certification. Actual applicable production/sales volume is used for end-of-year compliance determination.

AvgPR = the average power rating of all of the configurations within an engine family, calculated on a sales-weighted basis, in kilowatts.

UL = the useful life for the given engine family, in hours.

[63 FR 57008, Oct. 23, 1998]

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(a) In the application for certification a manufacturer must:

(1) Declare its intent to include specific engine families in the averaging, banking, and trading programs.

(2) Submit a statement that the engines for which certification is requested will not, to the best of the manufacturer’s belief, cause the manufacturer to have a negative credit balance when all credits are calculated for all the manufacturer’s engine families participating in the averaging, banking, and trading programs, except as allowed under §89.203(c)(3)(ii).

(3) Declare the applicable FELs for each engine family participating in averaging, banking, and trading.

(i) The FELs must be to the same number of significant digits as the emission standard for the applicable pollutant.

(ii) In no case may the FEL exceed the upper limits prescribed in §89.112(d).

(4) Indicate the projected number of credits generated/needed for this family; the projected applicable production/sales volume, by quarter; and the values required to calculate credits as given in §89.207.

(5) Submit calculations in accordance with §89.207 of projected emission credits (positive or negative) based on quarterly production projections for each participating family.

(b) All certificates issued are conditional upon manufacturer compliance with the provisions of this subpart both during and after the model year of production.

(c) Failure to comply with all provisions of this subpart will be considered to be a failure to satisfy the conditions upon which the certificate was issued, and the certificate may be deemed void ab initio.

(d) The manufacturer bears the burden of establishing to the satisfaction of the Administrator that the conditions upon which the certificate was issued were satisfied or waived.

(e) 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-year reports, follow-up audits, and any other verification steps deemed appropriate by the Administrator.


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(a) The manufacturer of any nonroad engine that is certified under the averaging, banking, and trading program must establish, maintain, and retain the following adequately organized and indexed records for each such engine produced: