



United States
Environmental Protection Agency
Office of Transportation and Air Quality

Manufacturer Averaging, Banking, and Trading Report for Nonroad CI Engines

Last Revision: December 2015 Version Number 3.6

Field Descriptions for Current MY Credit Calc

Fields (Current MY Credit Calc)	Description
Engine Family Name or Test Group	Enter the 12-character engine family name or test group name.
Tier in Effect	Select Tier 2, 3 or 4 based on the standards that apply to the engine family.
If Tier 2, Reserved for Future Use?	If the engine family or test group is subject to Tier 2, but will be reserved for future use in Tiers 3 or 4, select "Y" from the drop-down menu.
Do Tier 4 Alternative Compliance Options Apply? (Y/N)	Select "Y" from the dropdown menu if alternative compliance options apply. If an alternative compliance option(s) apply (including alternate standards, alternate FELs, Temporary Compliance Adjustment Factors (TCAF), etc.), use the Current MY Credit Calc-MANUAL worksheet. The credits from both Current MY Credit Calc worksheets will be reflected in the corresponding averaging set in the Summary worksheets. The Manual worksheet allows the user to enter in both the standards and FELs for the engine family. NOTE: If TCAF applies, please adjust the FEL accordingly and insert a note in the "Comments" field to describe the adjustment.
Gen Sets? (Y/N)	Select "Y" from the dropdown menu if the engine family consists of generator sets. This option only applies to engine families with a power rating above 560 kW.
Air Cooled, hand-startable, and direct injection? (Tier 4 and <8 kW engines only)	Select "Y" from the dropdown menu if the engine family consists of hand-startable, air-cooled, direct injection engines below 8 kW subject to Tier 4 standards. The term hand-startable generally refers to engines that are started using a hand crank or pull cord. Note that these engines may not generate either PM or NMHC+NOx credits but the manufacturer may use credits under the ABT program to ensure that these engines are in compliance (see 40 CFR 1039.101(c) and Table 1 of 40 CFR 1039.102). If "Y" is selected, it is assumed that the alternate PM standard of 0.6 g/kW-hr applies. If the regular Tier 4 PM standard of 0.4 g/kW-hr applies, please select "N".
Average Power (kW)	Enter the average power rating of all configurations within the engine family, calculated on a U.S. volume sales-weighted basis.
Parameter	Select the applicable parameter: NOx, NMHC + NOx or PM
Averaging Set	Selected the applicable averaging set: 1) At or above 19 kW (Tier 2 & 3); 2) Below 19 kW (Tier 2); 3) At or above 19 kW (marine diesel only) (Tier 2 & 3); 4) Below 19 kW (marine diesel only) (Tier 2); 5) Above 560 kW (Tier 4); or 6) At or below 560 kW (Tier 4). Note that for Tier 2/3 engine families, manufacturers are allowed to use credits generated on marine engines to demonstrate compliance for land-based applications, but not vice versa.
FEL (g/kW-hr)	Enter the applicable NOx, NMHC + NOx or PM family emission limit (FEL) for the engine family. This value should not exceed the applicable FEL caps under Part 89 or 1039.
Indirect Fuel Injection - Tier 2/3 only (Y/N)	If the engine family is subject to Tier 2 or 3 standards under Part 89, select Y or N to indicate whether the engine family uses indirect fuel injection. Under 89.206(b)(4) emission credits generated from engines rated at or above 19 kW utilizing indirect fuel injection may not be traded to other manufacturers.
Useful Life (Hours)	Enter the useful life for the engine family in hours.
Production Volume (actual sales/production) (S)	Enter the number of nonroad engines produced and sold within the given engine family for the current model year. Do not include engines sold to equipment or vehicle manufacturers that are exempt from the standards to address hardship issues or the need for implementation flexibility. Note that this value corresponds to the variable "S" in the tracking calculations as shown directly below the data entry cells.

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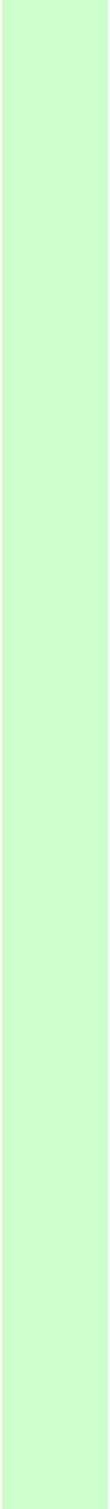
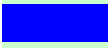
Fields (Current MY Credit Calc)	Description
Percent of Total Production that is Tracked (T)	Enter the fraction of the "Production Volume" that can be tracked to the point of first retail sale. If this fraction is greater than 0.50 untracked engines may be included in the credit calculations. EPA accepts projections of untracked nonroad engines when at least 50 percent of the engines have actually been tracked to the point of first retail sale. If the percent of tracked engines is at or above 90 percent, no adjustment will be made to untracked engines. Note that this value corresponds to the variable "T" in the tracking calculations as shown directly below the data entry cells.
Percent of Tracked Production that is Sold within U.S. (U)	Of those that can be tracked, enter the fraction that were sold domestically within the United States. Note that this value corresponds to the variable "U" in the tracking calculations as shown directly below the data entry cells.
NOx Tracking Adjustment Factor (F)	This factor is calculated automatically in the Current MY Credit Calc worksheet (if using the 'MANUAL' worksheet, this value is entered by the user). The factor is based on the "Percent of Total Production that is Tracked" and adjusts the number of untracked engines that are eligible to participate in ABT depending on the percent of overall sales that can be tracked. If the percent of untracked engines exceeds 50%, then only tracked engines are eligible to participate in the ABT program. If the percent of untracked engines is less than 10%, then no adjustment factor is applied. Note that this value corresponds to the variable "F" in the tracking calculations as shown directly below the data entry cells.
Production Volume Used in Credit Calculations (V)	This value is calculated automatically in the Current MY Credit Calc worksheet (if using the 'MANUAL' worksheet, it is entered by the user). This value represents the production volume eligible to participate in the ABT program and it is the number that is used to calculate the credit balance. Note that this value corresponds to the variable "V" in the tracking calculations as shown directly below the data entry cells.
Tier 2/3 Applicable Standard (g/kW-hr)	The standard is automatically populated in the Current MY Credit Calc worksheet (if using the 'MANUAL' worksheet, the standard is entered by the user) and is based on the Tier, Average Power Rating and Parameter. See Table 1 at 63 FR 57001.
Tier 4 Applicable Standard (g/kW-hr)	The standard is automatically populated in the Current MY Credit Calc worksheet (if using the 'MANUAL' worksheet, the standard is entered by the user) and is based on the Tier, Average Power Rating and Parameter. See Table 1 at 63 FR 57001.
NOx or NMHC+NOx Averaging Credits Generated or Used	Credits are calculated automatically in the Current MY Credit Calc worksheet (if using the 'MANUAL' worksheet, it is entered by the user) and represents the product of: 1) the difference between the NOx + NMHC standard and the FEL; 2) production volume; 3) average power rating; and 4) useful life.
PM Averaging Credits Generated or Used	Credits are calculated automatically in the Current MY Credit Calc worksheet (if using the 'MANUAL' worksheet, it is entered by the user) and represents the product of: 1) the difference between the PM standard and the FEL; 2) production volume; 3) average power rating; and 4) useful life.
Messages	If any of the entered data are incompatible or inconsistent with the program requirements and/or limitations, a note will be automatically displayed in this field. These messages are intended to help identify inconsistencies between the data entered for Tier, Average Power Rating, Averaging Set, and FEL, and are incorporated into both the automatic and manual worksheets.
Comments	This field may be used to enter in any additional information regarding special circumstances or characteristics associated with the engine family name or credit calculations. This field is for informational purposes only and would not affect credit calculations or compliance determinations. The information entered may be used to distinguish between multiple entries for a split engine family, identify issues that EPA should be aware of as the data are evaluated, or track characteristics of the engine family name for internal purposes (e.g., identifying configurations, sub-configurations, model names/numbers, etc.).

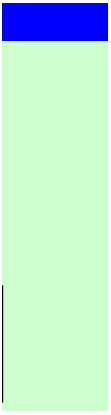
Paperwork Reduction Act Notice

Field Descriptions for Current MY Credit Calc

Fields (Current MY Credit Calc)	Description
<p><i>The public reporting and recordkeeping burden for this collection of information is estimated to average 43 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number (2060-0287) in any correspondence. Do not send the completed form to this address.</i></p>	

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EPA Form 5900-125







Manufacturer Average

Instructions

I. Background

A major component of the final rule for nonroad diesel engines is the average based on the model year, engine family, and the NO_x, NMHC + NO_x, or PM information related to credits or deficits under the ABT program, EPA has created a reporting template for model year (MY) 2009 and beyond. This reporting template covers engine families and summary information.

- **Current MY Credit Calc:** This worksheet contains 23 fields, which apply to the model year selected. The first 15 columns are the fields that require data entry or input from the manufacturer and must be modified manually. One of these columns (Messages) indicates whether the data entry is correct. This column (Comments) allows for the entry of any additional comments for the model year selected (2009 and beyond). There are filters for each column.

- **Current MY Credit Calc – MANUAL:** This worksheet contains the same 23 fields. This worksheet should be used only when there are unique circumstances where the automatic calculation is unable to process accurately. In this worksheet, with the exception of the summary section below the data entry cells are automatically calculated by the EPA system for both NMHC + NO_x and PM. Note that as with the Current MY Credit Calc worksheet, there are filters for each column.

- **Field Descriptions:** This worksheet contains detailed notes on each of the fields, including the existence of any drop-down menus, and any other information that would be helpful to the manufacturer.

- **Credit Transfers – Tier 2 & 3:** This worksheet summarizes any credit transfers that a manufacturer has not transferred to a separate entity.

- **Credit Transfers – Tier 4:** This worksheet summarizes any credit transfers that a manufacturer has not transferred to a separate entity.

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Reporting, Banking, and Trading Report for
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Reporting, banking, and trading (ABT) program for NO_x, NMHC + NO_x, and CO. The report provides information on the level to which the engine family is certified. In order to help streamline reporting, EPA has created an Excel-based template to assist manufacturers with the reporting requirements under 40 CFR Part 86.

The report contains all of the information required to calculate credits for each engine family. The next seven columns (highlighted in light green) contain the data entered are inconsistent with the program requirements, comments or notes that may apply to the data or credit calculation, and a column that can be used to filter or sort by clicking on the arrow with

the following fields and format as the Current MY Credit Calc worksheet, but in addition to the following fields (e.g., split engine families, alternative compliance options, engine parameter-specific credit totals and the Messages column, all credit calculations are based on the average set and parameter. The totals within this worksheet will be calculated based on the worksheet, filters may be used within each column by clicking on the

report contains 23 fields in the first two worksheets, including a description of the field and whether the field is relevant to that field (including whether the field is a calculated value).

The report also includes information on transfers for Tier 2 and Tier 3 that have occurred between manufacturers.

The report also includes information on transfers for Tier 4 that have occurred between manufacturers. The use

of the nonroad NMHC + NOx and NOx credits that are reflected v
o that banked credits may be properly applied and compared to C
ds. The Credit Usage and Averaging section to the right of the Su
entered in the Credit Usage and Averaging section is inconsistent
previously banked Tier 1 NOx credits, which may not be applied to
cent discount. Any discounts or limitations are integrated into the

road PM credits that have been calculated from the first workshee
applied and compared to current model year credits. The same a

enus provide a specific set of choices and using this list, you may
v you to view a specific subset of data (e.g., Tier 2 entries only). 1

t 15 columns of the "Current MY Credit Calc" worksheet. The nex
lums. If special circumstances require additional flexibility for the
will be automatically reflected in the appropriate Summary worksh

cific standard or averaging set, should have its own separate line
worksheets, a note will appear in the "Message" column if data anc
ower Rating is at or below 560 kW, a note will appear in the "Mess

t will calculate the corresponding credit balances for the engine fa

dditional rows are needed, please contact EPA for a revised form

cturer, enter all relevant information into the fields listed in the app

and NMHC + NOx credits and deficits (both banked and current y
d deficit balances. The process of applying and averaging these e
be automatically populated based on information in the "Current M
is summary worksheet. Any cell that is gray indicates that data e

ances from prior years. Note that current model year credits and
rent MY Credit Calc," "Current MY Credit Calc – MANUAL," "Cred

uded in the "Credit Balances before Averaging" section), indicate
tion specifies the type of credits being used as well as the Tier to

traded, the credit balances for these engines are maintained sepa
4 averaging set above 560 kW if the engine families from which c
corresponding non-marine averaging set (see 40 CFR 89.204(c)(3)

in invalid selection has been made. The number of credits to be s
veraging set category are displayed in the two right-hand columns
1, the Credits Subtracted and Credits Added columns will not be c

populated with the credit balances based on the application of NO.
d are shown for NOx and NMHC + NOx. Note that credit balance:

anked and current year) and allows for the application of these cr
ese existing PM credits with current model year PM credits is sun
i in the "Current MY Credit Calc," "Current MY Credit Calc – MANI
tes that data entry is not applicable or required.

ances from prior years in the appropriate averaging set. Note tha
tered and calculated within the "Current MY Credit Calc," "Curren

model year credits (as included in the Credit Balances before Ave
lits are applied within the corresponding averaging set and mainte

redits and the limitations on trading associated with indirect fuel inje
diesel credits can be transferred within the final credit balances se

in invalid selection has been made. The number of credits to be s
averaging set category are displayed in the two right-hand columr
n, the Credits Subtracted and Credits Added columns will not be c

populated with the credit balances based on the application of PM
overall PM averaging sets.

Act Notice

*average 43 hours per response. Send comments on the Agency's need for this
minimizing respondent burden, including through the use of automated collection
y (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the
this address.*

Nonroad CI Engines

and PM. Manufacturers must track the implementation of these provisions online and standardize the process by which manufacturers submit organization, presentation, and submittal of their annual reports for Model 3 (Tier 2 and 3) as well as 40 CFR Part 1039 (Tier 4).

the family and track the overall credit balances for each nonroad averaging (see) are preset or calculated values based on the data entered and cannot be changed. There is one additional column to the right of these seven columns associated with the engine family. This worksheet only applies to calculations shown in the column header.

incorporates automatic calculations or preset values for only three of the columns (e.g., etc.) that the automatic calculations in the Current MY Credit Calc worksheet columns allow for data entry or input from the user. The totals in the columns are automatically reflected in the corresponding Summary sheet totals for each column with a right arrow within the column header.

the required data or information, how the data should be entered, the value based on preceding entries in the spreadsheet).

users. The use of this worksheet will not be necessary in cases where the

use of this worksheet will not be necessary in cases where the manufacturer

within the Current MY worksheets and/or the Credit Transfers worksheets current MY credits. This worksheet allows the manufacturer to outline how Summary of Credit Balances (both before and after averaging), should be with program requirements or limitations, a note will appear within the (i.e., averaged with) credits or deficits associated with Tier 4. In addition, Summary of Credit Balances and Final Credit Balances sections.

st or entered into the second worksheet and allows the manufacturer to enter approach described above for the Summary – NMHC + NOx worksheet also

select the applicable option for each line item entry. The arrow for the drop- The filters can be used by clicking the arrow within the header.

ct seven columns in this worksheet (highlighted in light green) are calculated e credit calculations (e.g., split engine families), enter in relevant data for the eet).

item entry. Ensure that the Tier, Average Power Rating, Averaging Set, and l/or field selections are inconsistent with program requirements or sage" column that highlights the incompatibility of the averaging set and

mily. Below the data entry rows, the current model year credit totals are

and specify how many entries/rows will be required.

ropriate "Credit Transfer" (Tiers 2 & 3 or Tier 4) worksheet.

ear) and allows for the application of these credits to current model year existing credits with current model year credits is summarized in the second v/Y Credit Calc," "Current MY Credit Calc – MANUAL," "Credit Transfers – ntry is not applicable or required.

credits acquired or sold through trading activity are automatically populated lit Transfers – Tier 2 & 3," or "Credit Transfers – Tier 4" worksheets,

the number of traded, banked, or current model year credits that should be which the credits will be applied. Ensure that credits are applied to a

separately for both banked and current MY credits. Note that credits from Tiers 1 and 2 (credits being applied are rated above 560 kW. For Tiers 2 and 3, credits 3 and 4).

subtracted from the selected Tier and averaging set category as well as the 20 percent. These values are automatically calculated and will reflect the 20 percent calculated.

and NMHC + NOx credits in the preceding sections. The "Final Credit Balances" for indirect fuel injection are not available for trading.

credits to current model year balances. The initial step requires the entry of credits summarized in the second step. As with other worksheets, any cells that are blank, "Credit Transfers – Tier 2 & 3," or "Credit Transfers – Tier 4"

at current model year credits and credits acquired or sold through trading in the MY Credit Calc – MANUAL, "Credit Transfers – Tier 2 & 3," or "Credit

trading section), indicate the number of credits that should be entered in separate balances for indirect fuel injection.

Injection credits are consistent with those for NMHC + NOx. Credit balances for indirect fuel injection to a corresponding nonmarine averaging set, if desired.

subtracted from the selected Tier and averaging set category as well as the 20 percent. These values are automatically calculated and will reflect the 20 percent calculated.

credits in the preceding rows. The "Final Credit Balances" totals include

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