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## 40 C.F.R. § 98.393

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### Calculating GHG emissions.

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(a) *Calculation for individual products produced, imported, or exported.* (1) Except as provided in paragraphs (h) and (i) of this section, any refiner, importer, or exporter shall calculate CO<sub>2</sub> emissions from each individual petroleum product and natural gas liquid using Equation MM-1 of this section.

$$CO_{2i} = Product_i * EF_i \quad (\text{Eq MM-1})$$

Where:

CO<sub>2i</sub> = Annual CO<sub>2</sub> emissions that would result from the complete combustion or oxidation of each petroleum product or natural gas liquid “i” (metric tons). Product<sub>i</sub> = Annual volume of product “i” produced, imported, or exported by the reporting party (barrels). For refiners, this volume only includes products ex refinery gate, and excludes products that entered the refinery but are not reported under § 98.396(a)(2). For natural gas liquids, volumes shall reflect the individual components of the product as listed in Table MM-1 to subpart MM. EF<sub>i</sub> = Product-specific CO<sub>2</sub> emission factor (metric tons CO<sub>2</sub> per barrel).

(2) In the event that an individual petroleum product is produced as a solid rather than liquid any refiner, importer, or exporter shall calculate CO<sub>2</sub> emissions using Equation MM-1 of this section.

Where:

CO<sub>2i</sub> = Annual CO<sub>2</sub> emissions that would result from the complete combustion or oxidation of each petroleum product “i” (metric tons). Product<sub>i</sub> = Annual mass of product “i” produced, imported, or exported by the reporting party (metric tons). For refiners, this mass only includes products ex refinery gate, and excludes products that entered the refinery but are not reported under § 98.396(a)(2). EF<sub>i</sub> = Product-specific CO<sub>2</sub> emission factor (metric tons CO<sub>2</sub> per metric ton of product).

(b) *Calculation for individual products that enter a refinery as a non-crude feedstock.* (1) Except as provided in paragraphs (h) and (i) of this section, any refiner shall calculate CO<sub>2</sub> emissions from each non-crude feedstock using Equation MM-2 of this section.

$$CO_{2j} = Feedstock_j * EF_j \quad (\text{Eq MM-2})$$

Where:

CO<sub>2j</sub> = Annual CO<sub>2</sub> emissions that would result from the complete combustion or oxidation of each non-crude feedstock “j” (metric tons). Feedstock<sub>j</sub> = Annual volume of a petroleum product or natural gas liquid “j” that enters the refinery to be further refined or otherwise used on site (barrels). For natural gas liquids, volumes shall

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reflect the individual components of the product as listed in table MM-1 of this subpart.  $EF_j$  = Feedstock-specific  $CO_2$  emission factor (metric tons  $CO_2$  per barrel).

(2) In the event that a non-crude feedstock enters a refinery as a solid rather than liquid, the refiner shall calculate  $CO_2$  emissions using Equation MM-2 of this section.

Where:

$CO_{2j}$  = Annual  $CO_2$  emissions that would result from the complete combustion or oxidation of each non-crude feedstock “j” (metric tons).  $Feedstock_j$  = Annual mass of a petroleum product “j” that enters the refinery to be further refined or otherwise used on site (metric tons).  $EF_j$  = Feedstock-specific  $CO_2$  emission factor (metric tons  $CO_2$  per metric ton of feedstock).

(c) *Calculation for biomass co-processed with petroleum feedstocks.* (1) Refiners shall calculate  $CO_2$  emissions from each type of biomass that enters a refinery and is co-processed with petroleum feedstocks using Equation MM-3 of this section.

$$CO_{2m} = Biomass_m \times EF_m \quad (\text{Eq. MM-3})$$

Where:

$CO_{2m}$  = Annual  $CO_2$  emissions that would result from the complete combustion or oxidation of each type of biomass “m” (metric tons).  $Biomass_m$  = Annual volume of a specific type of biomass that enters the refinery and is co-processed with petroleum feedstocks to produce a petroleum product reported under paragraph (a) of this section (barrels).  $EF_m$  = Biomass-specific  $CO_2$  emission factor (metric tons  $CO_2$  per barrel).

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