

# DRAFT RULE LANGUAGE For Advisory Committee Review

## Chapter 173-441 WAC Reporting Emissions of Greenhouse Gases

### NOTES:

- Words in *italics* are defined in section 020.

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**WAC 173-441-010. Purpose.** The purpose of this rule is to develop a comprehensive inventory of greenhouse gas emissions in Washington State by establishing a reporting and verification system for emissions of greenhouse gases, as required in Chapter 70.94 RCW. An inventory of greenhouse gas emissions will support the legislature's intent to limit and reduce emissions of greenhouse gases consistent with the emissions reductions requirements established in RCW 70.235.020.

**WAC 173-441-020. Definitions.** The definitions in this section apply throughout this chapter unless the context clearly requires otherwise:

“Activity data” means information collected and used to calculate greenhouse gas emissions. Examples include but are not limited to: fuel use, fuel properties, electricity consumption, mileage, location, duration of operation, and number of emission units.

Comment [NC1]: Staff definition

“Biomass” means plants or parts of plants, animal waste or any product made of either of these, and includes wood and wood products, agricultural residues and wastes, biologically derived organic matter found in municipal and industrial wastes, landfill gas, bio-alcohols, spent pulping liquor, sludge gas, and animal- or plant-derived oils, and fuels derived from biomass.

Comment [NEP2]: Definition adapted from WCI.

“Carbon dioxide equivalents” or “CO<sub>2</sub>e” means a metric measure used to compare the emissions from various greenhouse gases based upon their *global warming potential*.

Comment [NEP3]: Definition is from HB 2815.

“Certification” or “certify” means a written and signed certification statement by the designated representative of the *owner or operator* that, based on information and belief formed after reasonable inquiry, the reported emissions are true, accurate, complete, free of material misstatement, and comply with the requirements of this Chapter.

Comment [NEP4]: Definition of certification adapted from WAC 173-401-520.

“Department” means department of ecology.

“Designated representative” means the person authorized by the *owner or operator* of an emissions source to represent and legally bind the *owner or operator* and to be responsible for *certifying* and submitting greenhouse gas emissions reports under this Chapter. The designated representative must be an individual having responsibility for the overall operation of the emissions source or sources.

Comment [NEP5]: This term is adapted from WCI’s draft model rule dated 12/5/08.

“Direct emissions” means emissions of greenhouse gases from sources of emissions, including stationary combustion sources, mobile combustion emissions, process emissions, and fugitive emissions.

Comment [NEP6]: Definition is from HB 2815.

“Emissions report” or “greenhouse gas emissions report” means the report of total greenhouse gas emissions prepared by the *owner or operator* each year and submitted electronically to the department to meet the reporting requirements of this Chapter.

Comment [NEP7]: Definition is adapted from CARB rule definition of “emissions data report”.

“Emission unit identification number” means a unique number assigned by the owner or operator that is associated with the emission unit forever. It is a number that is never reused in the event an emission unit is removed from the site inventory.

Comment [NEP8]: Staff definition.

“Fleet of on-road motor vehicles” means a collection of on-road motor vehicles with a common *owner or operator*.

Comment [NEP9]: Definition drafted by staff.

“Fugitive emissions” means emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

Comment [NEP10]: From WAC 173-400-030 definitions

“**Geographic coordinates**” mean a geographic point, or set of points, defined by latitude and longitude coordinates used to locate a site, usually the front door or centroid, including the associated method, accuracy, and description data.

**Comment [NEP11]:** Staff definition.

“**Global warming potential**” means the ratio of radiative forcing (degree of warming to the atmosphere) that would result from the emission of one unit of a given greenhouse gas compared to one unit of carbon dioxide (CO<sub>2</sub>). See Tables 3 and 4 in WAC 173-441-100(4).

**Comment [NEP12]:** Definition from TCR GRP.

“**Greenhouse gas**” and “greenhouse gases” includes carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

**Comment [NEP13]:** Definition from HB 2815.

“**Hydrofluorocarbons**” or “HFCs” means a class of greenhouse gases primarily used as refrigerants, consisting of hydrogen, fluorine, and carbon.

**Comment [NEP14]:** From CARB rule Section 95102.

“**Indirect emissions**” means emissions of greenhouse gases associated with the purchase of electricity, heating, cooling, or steam.

**Comment [NEP15]:** Definition from HB 2815.

“**Marine vessel**” means any vessel for transporting people or cargo by sea or freshwater, including but not limited to cargo, passenger, fishing, military, personal, and special purpose ships and boats.

**Comment [NC16]:** Definition drafted by staff.

“**Material misstatement**” means one or more inaccuracies identified during the certification or verification process that result in the total reported emissions being outside the 95 percent accuracy required under this Chapter. The 95 percent accuracy in total emissions reported is required for all reporters. For reporters subject to third party verification, the 95 percent accuracy in total emissions reported is required to receive a positive verification statement.

**Comment [NEP17]:** Definition adapted from WCI draft model rule and CARB rule.

“**Mobile source**” means vehicles or equipment for transporting people or cargo, including but not limited to on-road motor vehicles; aircraft; trains; marine vessels; off-road trucks; mobile cranes; forklifts; front-end loaders; and mining, construction, agriculture, and forestry equipment.

**Comment [NEP18]:** Definition developed by staff to provide examples of what is considered a mobile emissions source in this rule.

“**Negative verification statement**” means a final verification opinion prepared by a verification body stating that the *emissions report* is not free of *material misstatement* or that the verification body cannot confirm that the emissions report conforms to the requirements of this Chapter.

**Comment [NEP19]:** Modified from WCI. WCI uses “adverse”. TCR uses “negative”. Since we are referencing TCR’s GVP, chose to use TCR’s terminology.

“**On-road motor vehicles**” means any self-propelled vehicle required to be licensed for operation on the roads of Washington. Motor vehicles that operate exclusively within the boundaries of one specific site are not considered on-road motor vehicles and are subject to the 10,000 metric ton CO<sub>2</sub>e threshold.

**Comment [NEP20]:** Definition of motor vehicles taken from Chapter 173-422 WAC and modified to address on-road.

“Operational control” means the authority to introduce and implement operating, environmental, health and safety policies. When this authority is shared, the holder of the operating license is considered to have operational control.

**Comment [NEP21]:** Definition derived from CARB rule.

“Owner or operator” means any person who owns, leases, operates, controls or supervises a source, a combination of sources, or a *fleet of on-road motor vehicles*.

**Comment [NEP22]:** Definition is adapted from WCI draft model rule.

“Perfluorocarbons” or “PFCs” means a class of greenhouse gases consisting on the molecular level of carbon and fluorine.

**Comment [NEP23]:** From CARB rule Section 95102.

“Positive verification statement” means a final verification opinion prepared by a verification body stating that the *emissions report* is free of *material misstatement* and that the emissions report conforms to the requirements of this Chapter.

**Comment [NEP24]:** Definition is adapted from WCI draft model rule dated 12/29/08.

“Reporter” means the *owner or operator* responsible for submitting an *emissions report* under the requirements of this Chapter.

**Comment [NEP25]:** Definition adapted from TCR GRP.

“Site” means all sources of emissions located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way, under common operational control and having the same first two digits of the Standard Industrial Classification (SIC) or same first three digits of the North American Industry Classification System (NAICS) code.

**Comment [NEP26]:** Definition adapted from WCI’s definition of facility. Using “site” instead of “facility” throughout draft rule because the definition of “stationary source” includes the term “facility”.

“Source” or “emissions source” means

- a) any *stationary source* of greenhouse gas emissions or
- b) any *mobile source* of greenhouse gas emissions that is used for transporting people or cargo.

**Comment [NEP27]:** Definition is created from text in HB 2815, Section 5(5)(a).

“Stationary source” means any building, structure, facility, or installation that emits or may emit greenhouse gases.

**Comment [NEP28]:** Definition is from RCW 70.94.030 (which is referenced in 2815).

“Streamlined verification” means the verification services provided in interim years of a verification cycle between full verification. Streamlined verification only requires data checks on a *reporter’s emissions report* based on the most current sampling plan developed as part of the most current positive full verification statement.

**Comment [NEP29]:** Adapted from CARB’s definition of “less intensive verification” and WCI’s discussion in the model rule background document, pg 28.

“The Climate Registry” or “TCR” means the 501(c)3 nonprofit organization incorporated in Washington, DC March 14, 2007 with the purpose of setting consistent and transparent standards to calculate, verify and publicly report greenhouse gas emissions in North America. It is collaboration among North American states, provinces, territories and Native Sovereign Nations, and it supports voluntary and mandatory emissions reporting.

**Comment [NEP30]:** Definition provided by TCR.

“Total emissions of greenhouse gases” means all *direct emissions* and all *indirect emissions*.

**Comment [NEP31]:** Definition is from 2815.

“**Unified Business Identifier number**” means a unique number that is assigned to a business by the Corporations Division of the WA Secretary of State or possibly from the WA Department of Licensing. Businesses use this number when dealing with state agencies for filing, taxes and identification.

**Comment [NEP32]:** Staff definition.

“**Verification**” means the process used to ensure that an *emissions report* is free of *material misstatement* and complies with the procedures and methods established in Chapter 173-441 WAC for calculating and reporting greenhouse gas emissions.

**Comment [NEP33]:** Adapted from CARB’s and WCI’s definitions

“**Verification body**” means an organization meeting the accreditation requirements for third party verification in WAC 173-441-120(2).

**Comment [NEP34]:** Definition is adapted from WCI draft model rule and TCR GVP.

“**Verification cycle**” means the three year greenhouse gas emissions verification cycle, which includes one year of full verification and the next consecutive two years of *streamlined verification* for owners or operators subject to third party verification. A verification cycle must not exceed three calendar years.

**Comment [NEP35]:** Adapted from WCI draft model rule dated 12/5/08

“**Verification report**” means a detailed report that a verification body prepares for a *reporter*, describing the scope of the verification activities, standards used, emissions *sources* identified, sampling techniques, evaluation of the *reporter*’s compliance with the reporting requirements of this Chapter, assumptions, and a list of material and immaterial misstatements, if any.

**Comment [NEP36]:** Adapted from TCR GVP (modified to refer to compliance with this chapter instead of compliance with TCR GRP)

“**Verification statement**” means the final opinion prepared by a verification body and submitted to the department attesting whether or not an *emissions report* is free of *material misstatements* and whether the *emissions report* conforms to the requirements of this Chapter.

**Comment [NEP37]:** Adapted from WCI Draft model rule dated 12/5/08.

“**Waters of the state**” means all of the lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and watercourses within the jurisdiction of the state of Washington.

**Comment [NC38]:** Adapted from RCW 90.48.020

### **WAC 173-441-030. Applicability.**

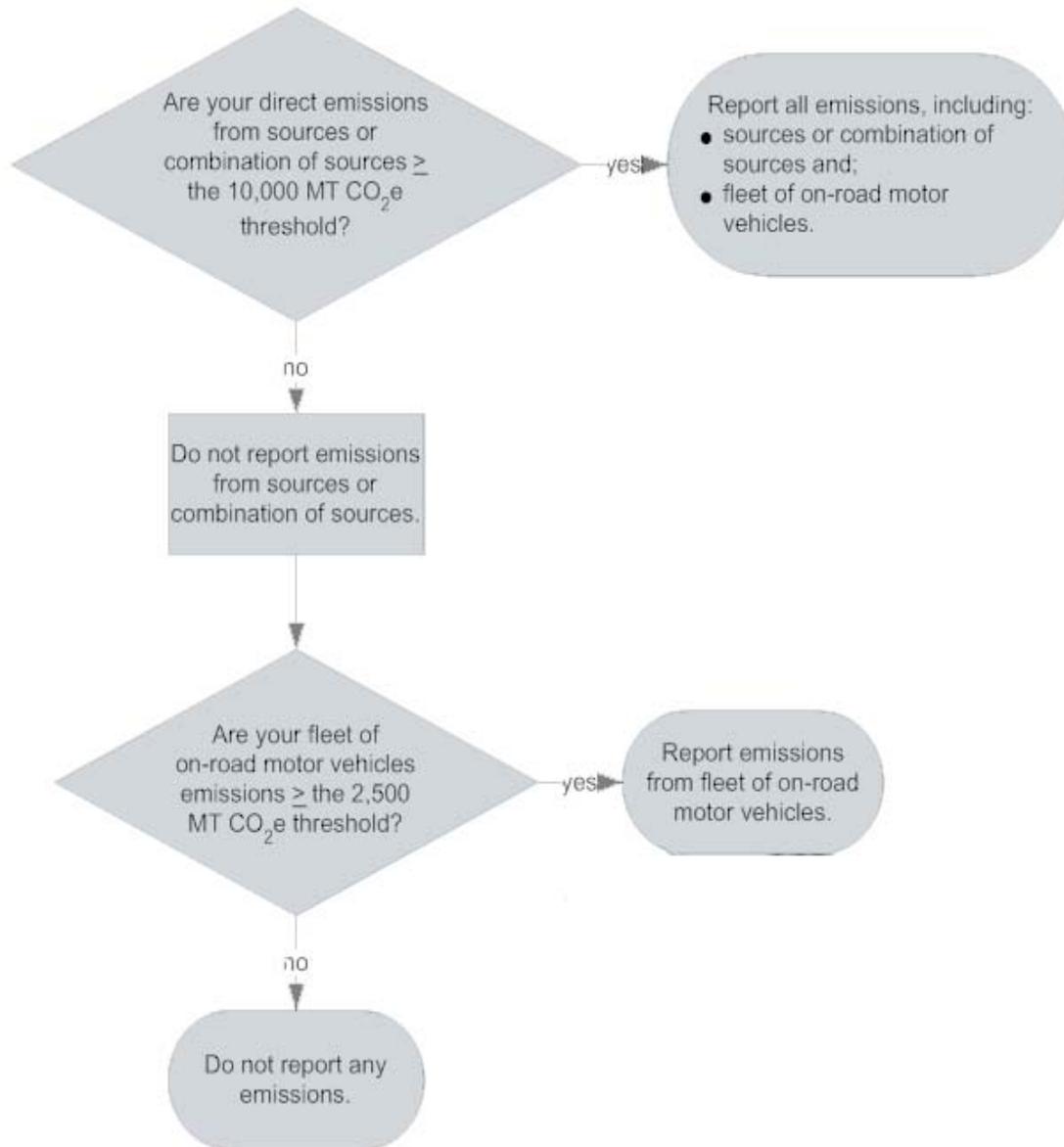
1) **Reporting thresholds.** Chapter 173-441 WAC reporting requirements apply to:

- a) **Fleet of on-road motor vehicles.** The *owner or operator* of a *fleet of on-road motor vehicles* that has *direct emissions* of at least 2,500 metric tons of greenhouse gases in a calendar year in Washington state, expressed as  $CO_2e$ ; and
- b) **Source or combination of sources of emissions.** The *owner or operator* of any *source* or combination of *sources* located in Washington state with *direct emissions* of at least 10,000 metric tons of greenhouse gases in a calendar year, expressed as  $CO_2e$ .
  - i. **Phasing in threshold and reporting requirements for sources and combinations of sources.** Refer to WAC 173-441-070 for phasing in of threshold and reporting requirements for certain *sources* and

- combinations of *sources* of emissions subject to WAC 173-441-030(1)(b) for calendar years 2009, 2010, 2011 and 2012 emissions.
- c) When determining if the direct emissions meet the thresholds in subsection 1(a) or 1(b) of this section, the *owner or operator* must include the direct emissions generated in Washington state from interstate and international *mobile sources*, as specified in WAC 713-441-055.
- 2) **Meeting reporting thresholds.** Refer to Figure 1 for a flow chart of how to apply reporting thresholds beginning with 2011 emissions reported in 2012.
- a) **Fleet of on-road motor vehicles.**
- i. An *owner or operator* of a *fleet of on-road motor vehicles* must use the methods in WAC 173-441-110 when determining if a *fleet of on-road motor vehicles* has direct *emissions* of at least 2,500 metric tons of *CO<sub>2</sub>e* in any calendar year in Washington state.
  - ii. An owner or operator of a fleet of on-road motor vehicles must combine the direct greenhouse gas emissions from all on-road motor vehicles that operate beyond the boundaries of a single site when determining if the fleet of on-road motor vehicles meets the 2,500 metric tons of *CO<sub>2</sub>e* reporting threshold.
  - iii. An *owner or operator* must use the methods in WAC 173-441-055(2) to include emissions generated within Washington state from interstate or international on-road motor vehicles when determining if a fleet of on-road motor vehicles meets the 2,500 metric tons of *CO<sub>2</sub>e* reporting threshold.
  - iv. If *emissions* from a *fleet of on-road motor vehicles* meet the 2,500 metric tons of *CO<sub>2</sub>e* annual reporting threshold, the *emissions* from the fleet must be reported.
- b) **Source or combination of sources of emissions.**
- i. An *owner or operator* of a *source* or combination of sources within Washington state must use the methods in WAC 173-441-100 when determining if direct greenhouse gas emissions from the source or combination of sources meet the applicable *CO<sub>2</sub>e* annual reporting threshold.
  - ii. When determining if emissions from a fleet of non-road mobile sources of a common type meets the applicable *CO<sub>2</sub>e* annual reporting threshold, the *owner or operator* must combine the direct greenhouse gas emissions from all non-road mobile sources of a common type that operate beyond the boundaries of a single *site*.
  - iii. An *owner or operator* must use the methods in WAC 173-441-055 to include emissions generated within Washington state from interstate or international mobile sources when determining if a fleet of non-road mobile sources operating beyond the boundaries of a single site meets the reporting threshold for a source or combination of sources.
  - iv. **Reporting total emissions.** Once an owner or operator determines that the *direct emissions* meet the reporting threshold for a source or combination of sources, the owner or operator must report the *total*

*emissions* from those sources including emissions from *fleets of on-road motor vehicles*.

**Figure 1: Applying Reporting Thresholds for Emissions Years 2011 and Later**



**WAC 173-441-040. Falling Below Reporting Thresholds.** If greenhouse gas emissions change such that the emissions fall below the applicable annual reporting threshold in WAC 173-441-030 the following reporting requirements shall apply:

- 1) The *owner or operator* must continue to submit an annual *emissions report* until direct emissions are below the applicable reporting threshold for a minimum of three consecutive years.
- 2) If direct emissions are below the applicable reporting threshold for three consecutive years, then the *owner or operator* is not subject to the reporting requirements of this Chapter until direct emissions exceed the applicable threshold in any future calendar year.

**WAC 173-441-050. Reporting Responsibility.**

- 1) **Operational Control.** The *owner or operator* with *operational control* is responsible for reporting the *total emissions* of greenhouse gases from those emissions *sources* meeting the thresholds established in WAC 173-441-030.
  - a) **Fleets of on-road motor vehicles.** The owner or operator of a fleet of on-road motor vehicles has operational control if it has the ability to track fuel use or has the ability to track emissions from the fleet of on-road motor vehicles for the calendar year. If the owner or operator does not have the ability to track fuel use for the calendar year (e.g. rental car companies), the owner or operator has operational control if it has the ability to track mileage for the calendar year.
  - b) **Source or combination of sources of emissions.**
    - i. **Stationary sources.** The owner or operator has operational control if it has the ability to track fuel use or emissions from the stationary source or combination of sources.
    - ii. **Mobile sources other than those whose emissions are reported as emissions from fleets of on-road motor vehicles.** The owner or operator has operational control if it has the ability to track fuel use or has the ability to track emissions from the mobile source for the calendar year. If the owner or operator does not have the ability to track fuel use for the calendar year (e.g. rental car companies), the owner or operator has operational control if it has the ability to track mileage for the calendar year.

**WAC 173-441-055. Determining if emissions from mobile sources occur in Washington state.** An owner or operator of mobile sources must use the following methods consistently throughout their organization and over time to determine if their emissions occur in Washington state. Emissions that occur while a mobile source is in port, hotelling, or idling are considered to occur in the state in which the mobile source is located at the time of the activity.

- 1) **Determining if emissions from mobile sources that operate exclusively within the boundaries of a single site occur in Washington state.** If a mobile source operates exclusively within the boundaries of a single site, then the emissions from those mobile sources are part of the emissions of the site.

- 2) **Determining if emissions from fleets of on-road motor vehicles occur in Washington state.** An owner or operator of a fleet of on-road motor vehicles must select one of the following methods to determine if their emissions occur in Washington state. An owner or operator may use a combination of Option 1 and Option 2 to determine if emissions occur in the state of Washington provided that all vehicles from the same vehicle size class use the same tier and that the tiers are applied consistently throughout the fleet and over time. Option 3 must not be combined with Option 1 or Option 2. The owner or operator may only use Option 3 if mileage location or fuel purchase location is not available due to limitations imposed by rental agreements.
- a) **Option 1: Miles travelled within Washington state by the fleet of on-road motor vehicles.** An owner or operator must assign emissions to Washington state based on the documented location of miles the fleet of on-road motor vehicles travels inside the state. The owner or operator may report activity data based on mileage location information, or prorate activity data based on the ratio of miles traveled inside of Washington to the total miles traveled by the fleet of on-road motor vehicles; or
  - b) **Option 2: Fuel purchased within Washington state for use by the fleet of on-road motor vehicles.** An owner or operator must assign emissions to Washington state based on the documented location of purchases of fuel for use by the fleet of on-road motor vehicles. The owner or operator may report activity data based on fuel purchase location information, or prorate activity data based on the ratio of fuel purchased inside of Washington to the total fuel purchased by the fleet of on-road motor vehicles; or
  - c) **Option 3: All emissions generated by a fleet of on-road motor vehicles licensed in Washington state.** If an on-road motor vehicle is licensed in the state of Washington, then the owner or operator must assign the on-road motor vehicle's emissions to Washington state.
- 3) **Determining if emissions from aircraft occur in Washington state.** An owner or operator must assign a flight's emissions to Washington state if both the takeoff and landing locations are located inside the state. For flights with multiple legs, each leg must be evaluated as a unique flight.
- 4) **Determining if emissions from rail fleets occur in Washington state.** An owner or operator of rail fleets must use the appropriate method from the list below to determine if their emissions occur in Washington state.
- a) **Intrastate rail systems.** If the entire length of track used by an owner or operator of a rail fleet is inside the state, then the owner or operator must assign all of the rail fleet's greenhouse gas emissions to Washington state.
  - b) **Interstate rail systems.** If the rail fleet operates on track located both inside and outside of the state of Washington, the owner or operator must assign the rail fleet's emissions to Washington state based on the documented time the rail fleet operates inside the state. The owner or operator may report activity data based on duration of operation information, or prorate activity data based on the ratio of time operated inside of Washington to the total time operated by the rail fleet.

- 5) **Determining if emissions from marine vessels occur in Washington state.** An owner or operator of a fleet of marine vessels must use the appropriate method or methods from the list below to determine if their emissions occur in Washington state. The methods must be applied in the order in which they are listed.
- a) **Intrastate marine vessel voyages.** If a marine vessel's arrival and departure points are both inside the waters of the state, then the owner or operator must assign the voyage's emissions to Washington state.
  - b) **Marine vessel voyages transiting Puget Sound.** If a marine vessel transits Puget Sound via the Strait of Juan de Fuca, Haro Strait, or Strait of Georgia, then the owner or operator must assign to Washington state the portion of the voyage's emissions associated with the reportable portion of the voyage if the point of arrival or last departure is within the waters of the state of Washington. The reportable portion of the voyage is defined as all activities between the point of arrival or last departure and three nautical miles west of the mean low-water mark of Cape Flattery for the Strait of Juan de Fuca, 48° 40' 00" N latitude for Haro Strait, or 49° 00' 00" N latitude for the Strait of Georgia.
  - c) **Marine vessel voyages in rivers that form the state border.** If a marine vessel operates in a river that forms a border of Washington, then the owner or operator must assign to Washington half of the emissions for the portion of the voyage occurring in the stretch of the river located on the border of Washington. The owner or operator must assign to Washington all of the emissions for the portion of the voyage occurring in any stretch of river located completely in Washington. The owner or operator may report activity data based on duration of operation by voyage portion, or prorate activity data based on the ratio of time operated exclusively inside of the waters of the state to the total time operated on the voyage.
  - d) **All other interstate marine vessel voyages.** If either the arrival or departure point is outside of the waters of the state, then the owner or operator must assign to Washington the emissions for the portion of the voyage occurring in Washington state based on the documented time the voyage occurs inside the state. The owner or operator may report activity data based on duration of operation by voyage portion, or prorate activity data based on the ratio of time operated inside of the waters of the state to the total time operated on the voyage.
- 6) **Determining if emissions from all other mobile sources occur in Washington state.** An owner or operator of a fleet of any type of mobile source not covered in WAC 173-441-055(1) through WAC 173-441-055(5), including but not limited to: off-road trucks, mobile cranes, forklifts, front-end loaders, and mining, construction, agriculture, and forestry equipment, must select one of the following methods to determine if their emissions occur in Washington state. The owner or operator must evaluate each type of mobile source independently from other mobile source types when applying the following methods.
- a) **Miles operated within Washington state by the mobile source.** An owner or operator must assign emissions to Washington state based on the documented location of miles the fleet of mobile sources operates inside the

state. The owner or operator may report activity data based on mileage location information, or prorate activity data based on the ratio of miles operated inside of Washington to the total miles operated by the fleet of mobile sources; or

- b) **Fuel purchased within Washington state for use by the mobile source.** An owner or operator must assign emissions to Washington state based on the documented location of purchases in Washington state of fuel for use by the fleet of mobile sources. The owner or operator may report activity data based on fuel purchase location information, or prorate activity data based on the ratio of fuel purchased inside of Washington to the total fuel purchased by the fleet of mobile sources; or
- c) **Time operated within Washington state by the mobile source.** An owner or operator must assign emissions to Washington state based on the documented time the fleet of mobile sources operates inside the state. The owner or operator may report activity data based on duration of operation information, or prorate activity data based on the ratio of time operated inside of Washington to the total time operated by the fleet of mobile sources.

**WAC 173-441-060. Reporting requirements for owners or operators of aircraft.**

- 1) Beginning with 2012 emissions to be reported in 2013, owners or operators of aircraft with flights that have a take-off and landing in Washington state must:
  - a) Include direct emissions from these aircraft when determining if their sources meet the reporting threshold of 10,000 metric tons of greenhouse gases per year, expressed as CO<sub>2</sub>e, and
  - b) Report the total emissions from these aircraft if the reporting threshold is met.
- 2) Owners or operators of aircraft are not required to report emissions from interstate or international flights.

**WAC 173-441-065. Report consistency.** An owner or operator must consistently report greenhouse gas emissions throughout their organization and over time.

- 1) **Switching to a higher tiered method.** An owner or operator may switch to an equivalent or higher tiered method provided that they continue to use the new method in subsequent reporting years.
- 2) **Switching to a lower tiered method.** An owner or operator must not switch to a lower tiered method unless the data required to perform the previous method is no longer available due to process or organizational changes.
- 3) **Adjusting emissions reports from previous years due to a change in methods.** An owner or operator must adjust emissions reports from previous years to account for any change in reporting methodologies when the change results in a material difference in emissions for that source. A material difference in emissions is defined as a difference of five percent or larger in the CO<sub>2</sub>e emissions as determined by the previous and new methods. If the activity data needed to use the new method is not available for previous emission years, then the owner or operator must clearly describe the change and document the lack of activity data in the emissions report. All changes and documentation to previous emission years must be submitted as part of the current year's reporting activities.

- 4) **Verification of emissions report adjustments due to a change in methods.** Any changes to emissions from previous years that are subject to third party verification must be verified according to WAC 173-441-090 and submitted as part of the current year's verification activities.

**WAC 173-441-070. Phasing in threshold and reporting requirements.** The thresholds and reporting requirements are phased in for the following *source* or combination of sources of emissions subject to the reporting threshold in WAC 173-441-030(1)(b), as specified below. Refer to Table 1 for a summary of the phasing schedule.

**1) Reporting for 2009 emissions.**

- a) For 2009 emissions reported in 2010, the reporting threshold shall be 25,000 metric tons of direct emissions, expressed as  $CO_2e$ .
- b) For 2009 emissions reported in 2010, when determining whether the direct emissions meet the 25,000 metric tons of  $CO_2e$  reporting threshold an *owner or operator* must only include *direct emissions* from those sources or combination of sources located on a site with direct emissions of at least 25,000 metric tons of greenhouse gases, expressed as  $CO_2e$ .
- c) An *owner or operator* with multiple sites within Washington state must calculate the *direct emissions* for each site separately. Each site that has *direct emissions* of at least 25,000 metric tons of  $CO_2e$  is subject to the reporting requirements of this Chapter.
- d) Once an *owner or operator* determines that the *direct emissions* from a site meet the reporting threshold in 1(a) of this subsection, the *owner or operator* is responsible for reporting the *total emissions* from the site.

**2) Reporting for 2010 emissions.** Refer to Figure 2 for a flow chart of how to apply the reporting thresholds in 2010.

- a) For 2010 emissions reported in 2011, the reporting threshold shall be 10,000 metric tons of direct emissions, expressed as  $CO_2e$ .
- b) For 2010 emissions reported in 2011, when determining whether the emissions meet the 10,000 metric tons of  $CO_2e$  reporting threshold an *owner or operator* must only include direct emissions from those *sources* or combination of sources located on a site with *direct emissions* of at least 10,000 metric tons of greenhouse gases, expressed as  $CO_2e$ .
- c) An *owner or operator* with multiple sites within Washington state must calculate the *direct emissions* for each site separately. Each site that has *direct emissions* of at least 10,000 metric tons of  $CO_2e$  is subject to the reporting requirements of this Chapter.
- d) Once an *owner or operator* determines that the *direct emissions* from a site meet the reporting threshold in 2(a) of this subsection, the *owner or operator* is responsible for reporting the *total emissions* from the site.

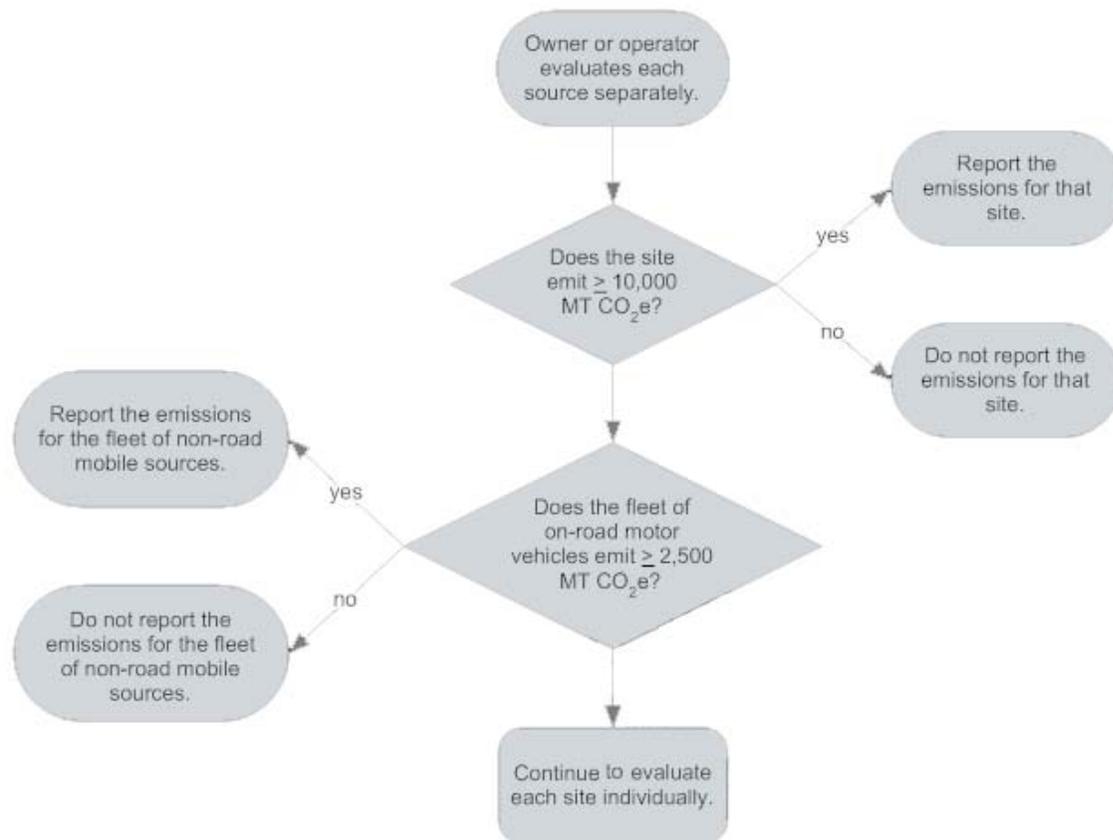
**3) Reporting for 2011 emissions and beyond.** Refer to Figure 1 for a flow chart of how to apply reporting thresholds beginning with 2011 emissions reported in 2012.

- a) For 2011 emissions reported in 2012 and all future reporting years the reporting threshold shall be 10,000 metric tons of direct emissions, expressed as  $CO_2e$ .

- b) Beginning with emissions reported in 2012 for the previous calendar year and for all future years, when determining whether the direct emissions meet the 10,000 metric tons of CO<sub>2</sub>e reporting threshold, an *owner or operator* must include direct emissions from all sources and combinations of sources located in Washington state.
- c) An *owner or operator* with multiple sites within Washington state must use the combined *direct emissions* from all of these sites to determine its direct emissions.
- d) Once an *owner or operator* determines that its combined *direct emissions* meet the reporting threshold in 3(a) of this subsection, the *owner or operator* is responsible for reporting the *total emissions*.

**Table 1. Phasing Schedule for a Source or Combination of Sources of Emissions**

Draft Rule Subsection	Emissions Year	Application of Reporting Threshold	Reporting Threshold for a Source or Combination of Sources of Emissions
WAC 173-441-070(1)	2009 (2010 report)	Individual Site	≥ 25,000 MT CO <sub>2</sub> e of direct emissions
WAC 173-441-070(2)	2010 (2011 report)	Individual Site	≥ 10,000 MT CO <sub>2</sub> e of direct emissions
WAC 173-441-070(3)	2011 (2012 report) and later	State wide emissions (Include all sites under same owner or operator)	≥10,000 MT CO <sub>2</sub> e of direct emissions

**Figure 2: Applying Reporting Thresholds to 2010 Emissions to be Reported in 2011**

NOTE: For 2009 emission to be reported in 2010, the first diamond in the figure above would read “Does the site emit  $\geq 25,000$  MT CO<sub>2</sub>e?”

**WAC 173-441-080. Emissions Reporting and Certification Schedule.** Owners or operators required to report greenhouse gas emissions under WAC 173-441-030 must submit an annual greenhouse gas *emissions report*, certified by the *designated representative*, based on the following schedule.

- 1) **Fleets of on-road motor vehicles.** Greenhouse gas *emissions reports* for fleets of on-road motor vehicles meeting the 2,500 metric tons of CO<sub>2</sub>e reporting threshold must be certified by the *designated representative* and submitted to the department by **October 31** for the previous calendar year emissions, beginning in 2010 for 2009 calendar year emissions.
- 2) **Source or combination of sources of emissions.**
  - a) Greenhouse gas *emissions reports* for a *source* or combination of sources that are not subject to the third party verification requirements under WAC 173-441-090 must be certified by the *designated representative* and submitted to the department by October 31 for the previous calendar year emissions, beginning in 2010 for 2009 calendar year emissions.

**Comment [NEP39]:** Using the October date from 2815 since these sources are not subject to C&T.

- b) Greenhouse gas *emissions reports* for a *source* or combination of *sources* subject to third party *verification* under WAC 173-441-090 must be certified by the *designated representative* and submitted to the department by April 1 for the previous calendar year emissions, beginning in 2011 for 2010 calendar year emissions. Third party verification must be completed based on the schedule found in WAC 173-441-090(5).
- 3) Owners or operators of new emissions *sources* that begin operations after January 1 of any calendar year must report emissions beginning with the first month of operation through the end of the first calendar year. Each subsequent annual *emissions report* must cover emissions for the full calendar year.

**WAC 173-441-090. Third Party Verification of Reported Emissions.** The following *verification* requirements apply to owners or operators of a *source* or combination of sources of greenhouse gas emissions subject to the reporting threshold in WAC 173-441-030(1)(b).

- 1) **Third party verification threshold of 25,000 metric tons or more of direct emissions of CO<sub>2</sub>e per calendar year.** Beginning with *emissions reports* submitted in 2011 for 2010 calendar year emissions, owners or operators of a *source* or combination of sources with direct emissions of 25,000 metric tons or more of *CO<sub>2</sub>e* per calendar year must verify the direct emissions using *verification* services provided by an accredited third party verification body.
- 2) **Falling below third party verification threshold.** If the direct emissions from a *source* or combination of sources subject to this Chapter change such that *direct emissions* fall below the 25,000 metric tons of *CO<sub>2</sub>e* verification threshold the following *verification* requirements shall apply:
  - a) **Direct emissions that fall below 25,000 metric tons of CO<sub>2</sub>e but equal or exceed 10,000 metric tons of CO<sub>2</sub>e.**
    - i. The *emissions report* is subject to full third party *verification* requirements the first year that direct emissions fall below 25,000 metric tons of *CO<sub>2</sub>e*.
    - ii. The *reporter* must continue to have the annual *emissions report* verified by an accredited third party *verification* body until direct emissions are below the 25,000 metric tons of *CO<sub>2</sub>e verification* threshold for a minimum of three consecutive years.
    - iii. Upon completion of a positive verification statement under full *verification* requirements, the *reporter* may choose to obtain less intensive, *streamlined verification* services during the next two calendar years, subject to WAC 173-441-120(4).
    - iv. If direct emissions remain below 25,000 metric tons of *CO<sub>2</sub>e* and are equal to or exceed 10,000 metric tons of *CO<sub>2</sub>e* for three consecutive years the *reporter* shall be subject to the reporting and *certification* requirements in WAC 173-141-080(2)(a).
  - b) **Direct emissions that fall below 10,000 metric tons of CO<sub>2</sub>e.**
    - v. The *reporter* must continue to have the annual *emissions report* verified by an accredited third party verification body until direct

**Comment [NEP40]:** WCI is proposing an April 1 reporting deadline for reporters subject to cap and trade.

EPA draft rule has a reporting deadline for all reporters of March 31.

emissions are below the 10,000 metric tons of  $CO_2e$  reporting threshold for a minimum of three consecutive years.

- vi. The *emissions report* is subject to full third party *verification* requirements the first year that direct emissions fall below 10,000 metric tons of  $CO_2e$ .
  - vii. Upon completion of a positive verification statement under full *verification* requirements, the *reporter* may choose to obtain less intensive, *streamlined verification* services during the next two calendar years, subject to WAC 173-441-120(4).
  - viii. If direct emissions remain below 10,000 metric tons of  $CO_2e$  for three consecutive years the *reporter* is not subject to the reporting and *verification* requirements of this Chapter until direct emissions exceed the reporting threshold in any future calendar year.
- 3) **Accreditation requirements for verification bodies.** All verification bodies conducting third party verification of reported greenhouse gas emissions under this Chapter must demonstrate to the department that:
- a) They meet the requirements of the International Organization for Standardization (ISO) 14065:2007, as adopted on April 15, 2007, Greenhouse Gases – Requirements for Greenhouse Gas Validation and Verification Bodies for Use in Accreditation or Other Forms of Recognition.
  - b) They have knowledge of the reporting and verification requirements of this Chapter.
- 4) **Verification cycle.**
- a) **Full verification.** *Reporters* required to obtain annual third party *verification* services shall be subject to full verification requirements in the first year that *verification* is required. Full *verification* must follow the verification process and requirements in The Climate Registry’s General Verification Protocol, Version 1,0, May 2008, Part 2. Upon completion of a positive verification statement under full verification requirements, the *reporter* may choose to obtain two years of less intensive, *streamlined verification* services. This cycle may be repeated in subsequent three-year cycles, but full verification requirements shall apply at least once every three years.
  - b) **Streamlined verification.** *Streamlined verification* is not allowed if either of the following significant changes occur.
    - i. A new verification body is hired to conduct *verification* services; or
    - ii. The verification body was not able to provide a positive verification statement for the reporter’s emissions for the previous calendar year.
  - c) *Reporters* subject to third party verification shall not use the same verification body for a period of more than six consecutive years. If a *reporter* is required or elects to contract with another verification body, the *reporter* may contract verification services from a previously used verification body only after having not using that verification body for at least three years.
- 5) **Third party verification schedule.** The verification body must complete the verification process and submit a verification statement to the department by September 1 for the previous calendar year emissions.
- 6) **Verification process.**

**Comment [NEP41]:** This section includes the two elements for streamlined verification that are in CARB rule and WCI’s background document.

See definitions section for definition of streamlined verification.

**Comment [NEP42]:** WCI model rule currently has a 9/1 verification deadline for reporting years 2010 and 2011.

- a) **Conflict of interest self-assessment.** Before each verification may proceed, the verification body must complete a conflict of interest self-assessment and submit it for the approval of the department. This self-assessment must be completed each year for each *reporter* to whom the verification body provides services.
- i. The conflict of interest self-assessment must follow the methods in The Climate Registry's General Verification Protocol, Version 1.0, May 2008, Part 3.
  - ii. Within 15 **business** days of receiving the conflict of interest self-assessment, the department will provide a determination of whether the verification body is authorized to proceed with *verification*.
- b) **Verification plan.** For each *reporter* whose direct emissions are being verified, the verification body must prepare and implement a verification plan following the methods in The Climate Registry's General Verification Protocol, Version 1.0, May 2008, Part 4.
- c) **Verification report.** For each *reporter* whose direct emissions are being verified, the verification body must complete a detailed verification report following the methods in The Climate Registry's General Verification Protocol, Version 1.0, May 2008, Part 5. Upon request by the department, the verification report will be made available to the department within ten business days.
- d) **Verification statement.** For each *reporter* whose direct emissions are being verified, the verification body must prepare a verification statement following the methods in The Climate Registry's General Verification Protocol, Version 1.0, May 2008, Part 5.
- 7) **Dispute resolution.** Prior to the verification body providing a negative verification statement to the department, the owner or operator must be provided at least ten business days to modify the emissions report to correct any material misstatement or nonconformance with this Chapter found by the verification body. The modified report and verification statement must be submitted to the department before the applicable verification deadline, unless the owner or operator makes a request to the department, as provided below.
- a) If the owner or operator and the verification body cannot reach agreement on the modifications to the emissions report that result in a positive verification statement, the owner or operator may petition the department to make a final decision as to the verifiability of the submitted emissions report.
  - b) If the department determines that the emissions report does not meet the standards and requirements of this Chapter, the owner or operator must have the opportunity to submit within sixty calendar days of the date of the decision any emissions report revisions that address the department's determination, for re-verification of the emissions report. In re-verifying a revised emissions report, the verification body must be subject to the requirements in WAC 173-441-090(6)(b)-(c).
- 8) **Completion of verification process.** Upon provision of the verification statement to the department, the emissions report must be considered final and no changes may be made except as provided in WAC 173-441-065(3) and WAC 173-441-120(4). All

**Comment [NEP43]:** TCR's GVP provides 15 days. WCI's draft model rule does not have a timeline yet (to be determined).

**Comment [NEP44]:** Sections (7) through (11) are based on WCI draft ERs dated 1/6/09 (pages 1-16). CARB rule is almost identical (Subarticle 4, Section 95131(c)(3)).

verification requirements of this Chapter will be considered complete upon provision of the verification statement.

- 9) **Set aside of positive verification statement.** If the department finds a high level of conflict of interest existed between a verification body and an owner or operator or an emissions report that received a positive verification statement fails an audit by the department, the department may set aside the positive verification statement submitted by the verification body.
- 10) **Data request by the department.** Upon request by the department, the owner or operator must provide the data used to generate an emissions report, including all data available to a verifier in the conduct of the verification services. The department may also review the full verification report given by the verification body to the owner or operator. The full verification report must be provided to the department upon request. The data requested or the full report must be made available within ten business days of the request by the department.
- 11) **Verifier availability.** Upon written request by the department, the verification body must make itself available for a verification services audit.
- 12) **Records retention.** The *owner or operator* must retain verification records and documents for seven years.

**WAC 173-441-100. Quantification methods for emissions from a source or combinations of sources.** Owners or operators of a source or combination of sources of greenhouse gases subject to the reporting threshold in WAC 173-141-030(1)(b) must use the following quantification methods to calculate emissions.

- 1) **Biomass.** All *reporters* must account for and separately report greenhouse gas emissions from the combustion of biomass.
  - a) **Reporting of stationary combustion of biomass.**
    - i. An owner or operator must report CO<sub>2</sub> emissions from fossil fuel combustion separately from CO<sub>2</sub> emissions from biomass combustion. Emissions of CH<sub>4</sub> and N<sub>2</sub>O from biomass combustion are direct emissions and are not treated separately from CH<sub>4</sub> and N<sub>2</sub>O from fossil fuel combustion. Emissions of CO<sub>2</sub> from biomass combustion are to be determined based on the methodologies in Chapter 12 of The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008).
    - ii. For facilities that combust municipal solid waste (MSW), the CO<sub>2</sub> emissions from combusting the biomass portion of MSW (eg. wood, yard waste, paper products) must be separately calculated and reported as biomass CO<sub>2</sub> emissions. A description of the available methodologies can be found in California Air Resources Board regulation for the Mandatory Reporting of Greenhouse Gas Emissions, Section 95125 (h)(2) adopted on XX date and codified in the California Code of Regulations at 17 CCR § 95125(h)(2).
- 2) **Direct greenhouse gas emissions.**
  - a) **Quantifying direct emissions from stationary combustion.** Greenhouse gas emissions from *stationary sources* must be calculated using one of the tiered methods in Chapter 12 of The Climate Registry's General Reporting Protocol,

Version 1.1 (May 2008). Selection of the appropriate tier will be based on existing facility monitoring systems and available data.

- b) Quantifying direct emissions from mobile combustion.** Greenhouse gas emissions from on-road mobile combustion operated exclusively on a specific site or non-road mobile combustion operated in the state of Washington must be calculated using one of the tiered methods in Chapter 13 of The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008).
- c) Sector-specific greenhouse gas emissions methodology.** A methodology reference summary is provided in Table 2. Reporters must select a methodology tier according to existing available technology and data. All references to TCR GRP in the table are referencing The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008).

**Table 2. Sector-Specific Greenhouse Gas Emissions Methodology**

Sector	Reference Methodology
Aluminum	TCR GRP, Appendix E.2 Tier A using plant specific emission factors or Tier B using default factors. Methodology referenced from IPCC 2006 Volume 3, Industrial Processes and Product Use, Chapter 4.4.
Cement	TCR GRP, Appendix E.4 Clinker Method using Tier A plant specific emission factor. This methodology is consistent with California Air Resources Board Regulation for the Mandatory Reporting of Greenhouse Gas Emissions Section 95110.
Iron & Steel	TCR GRP, Appendix E.7 Tier A plant specific emission factors or Tier B default carbon content factors. Methodology details are outlined in IPCC Volume 3, Industrial Processes and Product Use, Chapter 4.2
Lime	TCR GRP, Appendix E.8 Tier A1 or A2 based on plant specific factors; Tier B mass balance based on carbonate inputs using default factors; or Tier C mass balance based on production using default factors. Methodology details are outlined in IPCC Volume 3, Industrial Processes and Product Use, Chapter 2.3.
Pulp & Paper	TCR GRP, Appendix E.10 Tier A. Methodology consistent with International Council of Forest and Paper Associations (ICFPA) Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills, Version 1.1 2005
Petroleum Refinery	Use one of the methodologies contained in California Air Resources Board regulation for the Mandatory Reporting of Greenhouse Gas Emissions, Sections 95113 (except for 95113(a)(8), (9), and (10)). For those emissions use the appropriate methods in Chapters 12, 14, 15, and 16 of The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008)), and 95114, including the referenced sections of 95125 and the definitions in Section 95102 necessary to calculate, explain and interpret the methods described in the other sections 1.
Semi- Conductor	TCR Appendix E.12 Semiconductor Manufacturing. Consistent

<sup>1</sup> All references to ARB in these sections means Ecology. All references to Air Quality Management District (AQMD) or Air Pollution Control District (APCD) mean a permitting authority as defined in WAC 173-400-030.

	with IPCC 2006, Volume 3 Chapter 6
Natural Gas extraction, processing, storage, transmission and distribution	Use the method in Appendix A of this Chapter. Direct combustion emissions are calculated per The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) Chapter 12.
Other	Use the applicable TCR GRP, Appendix E protocol. If no TCR protocol is applicable, contact the department.

**d) Direct fugitive emissions.**

- i. **Refrigeration and air conditioning.** Greenhouse gas fugitive emissions from refrigeration and air conditioning must be calculated using Tier A or B methods as given in Chapter 16 of The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008). Selection of the appropriate tier will be based on existing monitoring systems and available data. An owner or operator may use the Screening Method given in Chapter 16 of The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) for sources that qualify for simplified estimation methods as described in WAC 173-441-115. The Screening Method is only considered to be a tiered method when applied to on-road motor vehicles.
- ii. **SF<sub>6</sub> fugitive emissions from electricity transmission and distribution.** SF<sub>6</sub> fugitive emissions from electricity transmission and distribution must be calculated using the methodology referenced in Appendix E.5 of The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008).
- iii. **Fugitive industrial wastewater treatment emissions.** Wastewater treatment emissions can be quantified via methods detailed in California Air Resources Board Regulation for the Mandatory Reporting of Greenhouse Gas Emissions Section 95113 (b) addressing CH<sub>4</sub> and N<sub>2</sub>O fugitive emissions from industrial wastewater treatment facilities.
- iv. **Fugitive methane emissions from landfill operations.** Fugitive methane emissions from landfill operations must follow the methodologies outlined in Appendix B.

**3) Indirect greenhouse gas emissions.**

- a) **Quantifying indirect greenhouse gas emissions from electricity use.** Indirect greenhouse gas emissions from the purchase and use of electricity must be quantified using one of the following methods.
  - i. Tier A methodology in The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) Chapter 14. Tier A must use the CO<sub>2</sub> generator-specific emission factor (lbs/MWh) calculated by the Washington State University Extension Energy Program using data from the most recent annual Utility Fuel Mix report published by Washington Department of Community, Trade and Economic Development. This CO<sub>2</sub> generator-specific emission factor may be

used in combination with the most recent Northwest Power Pool eGRID default factors for methane and nitrous oxide published by the U.S. Environmental Protection Agency; or

- ii. Tier B methodology in The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) Chapter 14. Tier B must use the most recent Northwest Power Pool eGRID default factors published by the U.S. Environmental Protection Agency; or
- iii. An owner or operator may calculate an emissions factor, subject to the department's approval of the methodology.

**b) Quantifying indirect greenhouse gas emissions from imported steam, district heating, cooling and electricity from a combined heat and power plant.**

- i. *Indirect emissions from stationary sources* must be calculated using the Tier A or B methods in The Climate Registry's General Reporting Protocol, Version 1.0, March 2008, Chapters 12, 15 and 16. Selection of the appropriate tier will be based on existing facility monitoring systems and available data. The determination of Tier A or B is based on the quality of information supplied by the district heating, cooling or cogeneration facility.
- ii. The owner of a cogeneration, district heating or district cooling plant must provide greenhouse gas emissions information to all purchasers of heating, cooling, or electricity. The emissions information must be provided in units appropriate for the *reporter* to use in formulating its annual *emissions report*. i.e. electricity in units of kg CO<sub>2e</sub>/MWh, steam in units of kg CO<sub>2e</sub> /1000 lb of steam purchased or kg CO<sub>2e</sub> /MMBtu of steam, cooling in terms of kg/ton of cooling, etc.

**4) The following global warming potential factors in Table 3 and Table 4 must be used when converting emissions of greenhouse gases to CO<sub>2e</sub> values.**

**Table 3: Global Warming Potential Factors for Required Greenhouse Gases**

<u>Common Name</u>	<u>Formula</u>	<u>Chemical Name</u>	<u>GWP</u>
Carbon dioxide	CO <sub>2</sub>		1
Methane	CH <sub>4</sub>		21
Nitrous oxide	N <sub>2</sub> O		310
Sulfur hexafluoride	SF <sub>6</sub>		23,900
<b>Hydrofluorocarbons (HFCs)</b>			
HFC-23	CHF <sub>3</sub>	trifluoromethane	11,700
HFC-32	CH <sub>2</sub> F <sub>2</sub>	difluoromethane	650
HFC-41	CH <sub>3</sub> F	fluoromethane	150
HFC-43-10mee	C <sub>5</sub> H <sub>2</sub> F <sub>10</sub>	1,1,1,2,3,4,4,5,5,5- decafluoropentane	1,300
HFC-125	C <sub>2</sub> H <sub>2</sub> F <sub>5</sub>	pentafluoroethane	2,800
HFC-134	C <sub>2</sub> H <sub>2</sub> F <sub>4</sub>	1,1,2,2-tetrafluoroethane	1,000
HFC-134a	C <sub>2</sub> H <sub>2</sub> F <sub>4</sub>	1,1,1,2-tetrafluoroethane	1,300
HFC-143	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	1,1,2-trifluoroethane	300
HFC-143a	C <sub>2</sub> H <sub>3</sub> F <sub>3</sub>	1,1,1-trifluoroethane	3,800
HFC-152	C <sub>2</sub> H <sub>4</sub> F <sub>2</sub>	1,2-difluoroethane	43*
HFC-152a	C <sub>2</sub> H <sub>4</sub> F <sub>2</sub>	1,1-difluoroethane	140
HFC-161	C <sub>2</sub> H <sub>5</sub> F	fluoroethane	12*
HFC-227ea	C <sub>3</sub> H <sub>2</sub> F <sub>7</sub>	1,1,1,2,3,3,3- heptafluoropropane	2,900
HFC-236cb	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	1,1,1,2,2,3-hexafluoropropane	1,300*
HFC-236ea	C <sub>3</sub> H <sub>2</sub> F <sub>6</sub>	1,1,1,2,3,3-hexafluoropropane	1,200*

HFC-236fa	C3H2F6	1,1,1,3,3,3-hexafluoropropane	6,300
HFC-245ca	C3H3F5	1,1,2,2,3-pentafluoropropane	560
HFC-245fa	C3H3F5	1,1,1,3,3-pentafluoropropane	950*
HFC-365mfc	C4H5F5	1,1,1,3,3-pentafluorobutane	890*
<b>Perfluorocarbons (PFCs)</b>			
Perfluoromethane	CF4	tetrafluoromethane	6,500
Perfluoroethane	C2F6	hexafluoroethane	9,200
Perfluoropropane	C3F8	octafluoropropane	7,000
Perfluorobutane	C4F10	decafluorobutane	7,000
Perfluorocyclobutane	c-C4F8	octafluorocyclobutane	8,700
Perfluoropentane	C5F12	dodecafluoropentane	7,500
Perfluorohexane	C6F14	tetradecafluorohexane	7,400

Source: Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report published in 1995, unless no value was assigned in the document. In that case, the GWP values are from the IPCC Third Assessment Report published in 2001 (those marked with \*). GWP values are from the Second Assessment Report (unless otherwise noted) to be consistent with international practices. Values are 100-year GWP values.

**Table 4: Global Warming Potential Factors for Required Refrigerant Blends**

Refrigerant Blend	Global Warming Potential
R-401A	18
R-401B	15
R-401C	21
R-402A	1,680
R-402B	1,064
R-403A	1,400
R-403B	2,730
R-404A	3,260
R-406A	0
R-407A	1,770
R-407B	2,285
R-407C	1,526
R-407D	1,428
R-407E	1,363
R-408A	1,944
R-409A	0
R-409B	0
R-410A	1,725
R-410B	1,833
R-411A	15
R-411B	4
R-412A	350
R-413A	1,774
R-414A	0
R-414B	0
R-415A	25

R-415B	105
R-416A	767
R-417A	1,955
R-418A	4
R-419A	2,403
R-420A	1,144
R-500	37
R-501	0
R-502	0
R-503	4,692
R-504	313
R-505	0
R-506	0
R-507 or R-507A	3,300
R-508A	10,175
R-508B	10,350
R-509 or R-509A	3,920

Source: ASHRAE Standard 34 via Chapter 16 of The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008)

**WAC 173-441-110. Quantification methods for fleets of on-road motor vehicles.**

Owners or operators of a *fleet of on-road motor vehicles* subject to the 2,500 metric ton of  $CO_2e$  reporting threshold in WAC 173-141-030(1)(a) must use the following quantification methods to calculate their emissions.

**1) Greenhouse gas emission calculations.**

- a) **Quantifying  $CO_2$  emissions from on-road motor vehicles.**  $CO_2$  emissions from a fleet of on-road motor vehicles must be calculated using one of the tiered methods in The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) Chapter 13.
- b) **Quantifying  $CH_4$  and  $N_2O$  emissions from on-road motor vehicles.**  $CH_4$  and  $N_2O$  emissions from a fleet of on-road motor vehicles must be calculated using one of the tiered methods in The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) Chapter 13. Simplified Estimation Methods may be used according to WAC 173-441-115.
- c) **Quantifying fugitive emissions from refrigeration and air conditioning from on-road motor vehicles.** Fugitive emissions from refrigeration and air conditioning from a fleet of on-road motor vehicles must be calculated using one of the tiered methods in The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) Chapter 16. The Department will accept the Screening Method located in The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) Chapter 16 as a tiered method for fleets of on-road motor vehicles.
- d) **Quantifying emissions from auxiliary power units.** Emissions from the combustion of fuels in auxiliary power units that are associated with a fleet of

on-road motor vehicles must be calculated using one of the tiered methods in The Climate Registry's General Reporting Protocol, Version 1.1 (May 2008) Chapter 13 or Chapter 12.

- 2) **Biomass.** All reporters must account for and separately report greenhouse gas emissions from the combustion of biomass.
  - a. **Reporting of biomass emissions for on-road motor vehicle fuels with greater than or equal to fifty percent biomass content.**
    - i. An owner or operator must report the percentage of fuel derived from biomass for all fuels that are fifty percent or more biomass.
    - ii. An owner or operator must adjust the emission factors of any fuel that is fifty percent or more biomass by reporting the fuel in two components. The biomass portion of the fuel must be calculated using the emissions factor for the pure biomass fuel and the non-biomass portion of the fuel must be calculated using the emissions factor for the corresponding pure non-biomass fuel.
  - b. **Reporting of biomass emissions for on-road motor vehicle fuels with less than fifty percent biomass content.**
    - i. An owner or operator may report the percentage of fuel derived from biomass for all fuels that are less than fifty percent biomass.
    - ii. An owner or operator may choose to report all emissions as non-biomass for any fuel with less than fifty percent biomass content. Alternately, the owner or operator may adjust the fuel's emission factors by reporting the fuel in two components. The biomass portion of the fuel may be calculated using the emissions factor for the pure biomass fuel and the non-biomass portion of the fuel may be calculated using the emissions factor for the corresponding pure non-biomass fuel.
  - c. **Corresponding fuel types for fleets of on-road motor vehicles.**
    - i. Biodiesel is considered the biomass fuel corresponding to diesel.
    - ii. Ethanol is considered the biomass fuel corresponding to gasoline.
    - iii. For all other fuels use the same emissions factors for both biomass and non-biomass fuel components.
- 3) The global warming potential factors found in WAC 173-441-100(4) must be used when converting emissions of greenhouse gases to CO<sub>2</sub>e values.

**WAC 173-441-115. Simplified estimation methods for de minimis sources.** The owner or operator may elect to designate as de minimis one or more sources or pollutants that collectively emit no more than 5 percent of their total direct CO<sub>2</sub>e emissions, but not to exceed 10,000 metric tons CO<sub>2</sub>e. The owner or operator may estimate direct emissions for these de minimis sources using simplified estimation methods as an alternative to those required in WAC 173-441-100 and WAC 173-441-110. Simplified estimation methods must use upper-bound assumptions that error on the side of overestimating rather than underestimating emissions. If verification of the emissions report is required by this rule, then the selection of any simplified estimation method is subject to the concurrence of the verification team that the use of such methods provides reasonable assurance that the emissions so designated do not exceed the applicable de minimis limits

Comment [NC45]: Adapted from WCI

of 5 percent of total direct emissions not to exceed 10,000 metric tons CO<sub>2</sub>e. The owner or operator must separately identify and include in the emissions data report the emissions from designated de minimis sources.

**WAC 173-441-120. Report Content and Submission Requirements.** The owner or operator of an emissions source subject to the emissions thresholds in WAC 173-441-030 must submit an annual greenhouse gas emissions report to the department's registry of greenhouse gas emissions. Owners or operators are required to report emissions separately for each *site*.

- 1) **General information.** An owner or operator must report the following information for each site, fleet and collection of mobile sources:
  - a) Owner or operator identification information including owner name(s), business name(s), business mailing addresses and the Washington state *Unified Business Identifier(s)*;
  - b) Designated representative contact name, mailing address and telephone number(s);
  - c) Identification information including the name of each site, fleet or collection of mobile sources and the associated North American Industrial Classification System (NAICS);
  - d) Name and contact information including mailing address and telephone number of the person primarily responsible for preparing the emissions report;
  - e) If applicable, parent company and corporate identification information including parent company or corporation name, mailing address and business identifiers. If you are reporting as a subsidiary, the identity information of your parent company and organizational charts that make clear your relationship to your parent(s) and other subsidiaries;
  - f) Submittal information including reporting year and the submittal year;
  - g) Quantification methodologies and tiers employed for each source, including disclosure of all relevant assumptions made, data sources used, and identification of any changes to the data, inventory boundary, methods or other relevant factors relative to this or a prior-year report;
  - h) Documents related to *verification* activities including *verification statements* and *verification reports*; and
  - i) A signed and dated certification statement provided by the designated representative.
- 2) **Mobile Sources.** An owner or operator must report the following information for mobile sources of emissions.
  - a) Fleets of on-road motor vehicles must report the following additional information:
    - i. Source identification information, source characteristic information and activity data;
    - ii. Annual greenhouse gas emission quantities by fuel type, expressed in metric tons of each greenhouse gas including of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs.
    - iii. Annual greenhouse emission quantities expressed as metric tons of CO<sub>2</sub>e ; and

- iv. Annual greenhouse gas emission quantities of fugitive emissions including those refrigeration and air conditioning systems in from motor vehicle air conditioners or auxiliary power units.
  - b) Non-road mobile sources operating beyond the borders of a single site are required to report consistent with WAC 173-441-030 and WAC 173-441-055. Sources may report as a combination of like or similar sources such as a fleet of marine vehicles or a collection of heavy/construction equipment. The report must include:
    - i. Source identification information, source characteristic information and activity data;
    - ii. Annual emission quantities expressed in metric tons of each greenhouse gas expressed in metric tons of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub>;
    - iii. Annual total of greenhouse gasses expressed in metric tons of CO<sub>2</sub>e ;
    - iv. Annual emission quantities of fugitive emissions including those from refrigeration, air conditioning systems or other auxiliary power units; and
    - v. Annual indirect emission quantities of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub> and CO<sub>2</sub>e, expressed in metric tons associated, with the purchased of electricity, steam, heating or cooling.
- 3) **Stationary source.** An owner or operator of a site must report total emissions from each site that is subject to the reporting requirements of this Chapter. For each site identified, the owner or operator must report the following information for stationary sources of emissions:
  - a) Location address, mailing address, if different from the owner or operator address, North American Industrial Classification System (NAICS) primary and secondary codes, the *EPA Facility Site ID*, and *geographic coordinates*;
  - b) Emission unit information including an *emission unit identification number*, *activity data*, and *geographic coordinates*;
  - c) For each emission unit at a site, the annual emission quantities of each greenhouse gas including of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, and SF<sub>6</sub>, expressed in metric tons and CO<sub>2</sub>e quantity expressed in metric tons. Emission quantities from biomass must be reported separately;
  - d) Annual fugitive emissions quantities of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, and SF<sub>6</sub>, expressed in metric tons and CO<sub>2</sub>e quantity expressed in metric tons;
  - e) Annual de minimis emissions quantities of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, and SF<sub>6</sub>, expressed in metric tons and CO<sub>2</sub>e quantity expressed in metric tons;
  - f) Annual indirect emission quantities of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub> and CO<sub>2</sub>e associated with the purchased of electricity, steam, heating or cooling.
  - g) Activity data and measurement based data associated with direct and indirect emissions; and
  - h) Annual emissions for all mobile sources operating exclusively on the grounds of a single site must report the following information, when the source or combination of sources are required to report. Sources may report as a combination of like or similar sources such as a pool of forklifts:

- i. Mobile source fleet characteristics and activity data such as miles traveled and fuel type;
  - ii. Annual emission quantities for the source or collection of sources by fuel type expressed in metric tons of each greenhouse gas including of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs;
  - iii. Annual emission quantities of fugitive emissions from refrigeration and air conditioning systems such as motor vehicle air conditioners or other auxiliary power units
- 4) **Submission of Greenhouse Gas Emissions Report.** The annual greenhouse gas emissions report must be submitted to the department's registry of greenhouse gas emissions in the format specified by the department.
- 5) **Greenhouse Gas Inventory Management Plan.** The owner or operator must maintain a greenhouse gas inventory management plan that ensures that emissions calculations and other information that is required to be reported under this rule are transparent, accurate, and independently verifiable. The owner or operator must establish, document, implement, and maintain data acquisition and handling activities for the calculation and reporting of greenhouse gas emissions. Such activities must include measuring, monitoring, analyzing, recording, processing and calculating the parameters specified by this rule. The owner or operator must implement systems of internal audit, quality assurance, and quality control for the reporting program and the data reported. If requested, the greenhouse gas inventory management plan must be submitted to the department within 30 days of the request.
- 6) **Greenhouse Gas Emissions Report Revisions.** The owner or operator may revise a previously submitted emissions report under the circumstances specified in this section. The owner or operator must maintain documentation to support any revisions made to a previously submitted emissions report. Documentation for all emissions report revisions must be retained by the owner or operator for seven years.
  - a) If during the course of receiving *verification* services and prior to completion of a *verification statement*, an owner or operator chooses to make a correction or improvement to the report.
  - b) If, after the *verification* is completed, a report subject to verification is found to contain an error, or accumulation of errors, resulting in a material misstatement of reported emissions the owner or operator must revise and resubmit an emissions report within 60 days of the finding. A revised report will be accepted only if verified according to WAC 173-441-090 and approved by the department.
  - c) If, after the report submittal is complete, a report not subject to verification is found to contain an error, or accumulation of errors, resulting in a material misstatement of reported emissions the owner or operator must revise and resubmit an emissions report within 30 days of the finding. A revised report will be accepted only if approved by the department
  - d) An owner or operator that voluntarily chooses to correct errors of 5 percent or less in total CO<sub>2</sub>e emissions reported may do so according to the following requirements:

- i. For reports subject to verification, a revised report will only be accepted if verified according to WAC 173-441-090 and approved by the department.
- ii. For reports not subject to verification, a revised report will be accepted if approved by the department.

**WAC 173-441-125. Document Retention and Record Keeping Requirements.**

- 1) The owner or operator must establish and maintain procedures for document retention and record keeping. The owner or operator must retain all documents regarding the design, development and maintenance of the greenhouse inventory in paper, electronic or other usable format for a period of not less than seven years following submission of each emissions report. The retained documents, including greenhouse gas emissions data, must be sufficient to allow for the *verification* of each emissions data report.
- 2) Upon request by the department the owner or operator must provide within ten business days all documents and data used to develop an emissions report.
- 3) In addition to information submitted as part of the emissions report, each owner or operator must retain, at a minimum, the following information for at least seven years after the submission of the report:
  - a) A list of all greenhouse gas sources (i.e., units, operations, processes, and activities) included in the emission estimates.
  - b) All data used to calculate emissions for each source, categorized by process and fuel or material type.
  - c) Documentation of the process for collecting emissions data.
  - d) Any greenhouse gas emissions calculations and methods used;
  - e) All emission factors used for emission estimates, including documentation for any factors not provided in this Chapter.
  - f) All activity data used for emission estimates.
  - g) Documentation of biomass fractions for specific fuels.
  - h) All other data submitted to the department under this Chapter, including the greenhouse gas emissions report.
  - i) All computations made to gap-fill missing data.
  - j) Names and documentation of key facility personnel involved in emissions calculating and reporting;
  - k) Any other information that is required for the verification of the emissions report.
  - l) A log to be prepared for each reporting year, beginning January 1, documenting all procedural changes made in greenhouse gas accounting methods and changes to instrumentation for greenhouse gas emissions estimation.
  - m) A copy of the Greenhouse Gas Inventory Management Plan, as established in WAC 173-441-120(5).
- 4) For measurement based methodologies, the following information also must be retained for at least seven years after the submission of the emissions report:
  - a) List of all emission points monitored.
  - b) Collected monitoring data.

- c) Quality assurance and quality control information collected under the Greenhouse Gas Inventory Management Plan required by WAC 173-441-120(5).
- d) A detailed technical description of the continuous measurement system, including documentation of any findings and approvals by federal, State or local agencies.
- e) Raw and aggregated data from the continuous measurement system.
- f) A log book of all system down-times, calibrations, servicing, and maintenance of the continuous measurement system
- g) Documentation of any changes in the continuous measurement system over time.

### WAC 173-441-130. Reporting Fees.

- 1) **Fee determination.** Each owner or operator of an emissions source subject to this Chapter must pay a reporting fee. Ecology must establish reporting fees based on workload using the process outlined below. The fees must be sufficient to cover the department's costs to administer the greenhouse gas emissions reporting program.
- 2) **Fee eligible activities.** The costs of activities associated with administering this reporting program, as described in RCW 70.94.151(2), are fee eligible.
- 3) **Workload analysis and budget development.**
  - a) **Workload analysis.** Ecology must conduct a workload analysis projecting resource requirements for administering the reporting program, organized by categories of fee-eligible activities, for the purpose of preparing the budget. The department must prepare the workload analysis for the two-year period corresponding to each biennium. The workload analysis must identify the fee-eligible administrative activities related to the reporting program that it will perform during the biennium and must estimate the resources required to perform these activities.
  - b) **Budget development.** Ecology must prepare a budget for administering the reporting program for the two-year period corresponding to each biennium. The budget must be based on the resource requirements identified in the workload analysis for the biennium and must take into account the reporting program account balance at the start of the biennium.
- 4) **Allocation methodology.** Ecology must allocate the reporting program budget among the owners or operators required to report greenhouse gas emissions under this Chapter according to the following components:
  - a) **Flat component.** This portion of a reporter's fee is calculated by the equal division of twenty percent of the budget amount by the total number of reporters in the greenhouse gas reporting program.
  - b) **Emissions component.** This portion of the reporting fee applies only to the following reporters and is calculated using the following methodology:
    - i. **Total emissions less than 25,000 metric tons of CO<sub>2</sub>e.** For an owner or operator of a source or combination of sources with total reported emissions less than 25,000 metric tons of CO<sub>2</sub>e, this portion of the reporting fee is calculated by dividing thirty percent of the total budget amount by the total number of reporters in this category.

**Comment [NEP46]:** This section is modeled after WAC 173-455-040.

- ii. **Total emissions equal to or greater than 25,000 metric tons of CO<sub>2</sub>e.** For an owner or operator of a source or combination of sources with total reported emissions equal to or greater than 25,000 metric tons of CO<sub>2</sub>e, this portion of the reporting fee is calculated by dividing fifty percent of the total budget amount by the total number of reporters in this category.
- 5) **Fleets of on-road motor vehicles.** The reporting fee for an owner or operator of a fleet of on-road motor vehicles required to report under this Chapter includes only the flat component of the fee.
- 6) **Source or combination of sources.** The reporting fee for an owner or operator of a source or combination of sources of emissions required to report under this Chapter includes the flat component and the applicable emissions component of the fee.
- 7) **Fee schedule.** Ecology must issue annually a fee schedule reflecting the administrative fee to be paid by each reporter. The fee schedule must be based on the budget and workload analysis conducted each biennium. Ecology must publish the fee schedule for the following year on or before October 31 of each year.
- 8) **Fee payments.** Fees specified in this section must be paid within thirty days of receipt of the department's billing statement. All fees collected under this Chapter must be made payable to the Washington department of ecology. A late fee surcharge of fifty dollars or ten percent of the fee, whichever is more, may be assessed for any fee not received after the thirty day period.
- 9) **Dedicated account.** All reporting fees collected by the department must be deposited in the air pollution control account.

**WAC 173-441-140. Ecology to share information with local air authorities and with the Energy Facility Site Evaluation Council.**

- 1) The department must share any information reported to it under these rules with the local air authority in which the *owner or operator* operates.
- 2) The department must share any information reported to it under these rules from facilities permitted by the energy facility site evaluation council with the council, including notice of a facility that has failed to report as required.

**WAC 173-441-150. Enforcement.** Ecology may take any of the following regulatory actions to enforce this chapter to meet the provisions of RCW 43.21B.300 which is incorporated by reference.

- 1) **Enforcement actions by ecology -- Notice to violators.** At least thirty days prior to the commencement of any formal enforcement action under RCW 70.94.430 and 70.94.431, the department of ecology shall cause written notice to be served upon the alleged violator or violators. The notice shall specify the provision of this chapter or the rule or regulation alleged to be violated, and the facts alleged to constitute a violation thereof, and may include an order that necessary corrective action be taken within a reasonable time. In lieu of an order, ecology may require that the alleged violator or violators appear before it for the purpose of providing ecology information pertaining to the violation or the charges complained of. Every notice of violation shall offer to the alleged violator an opportunity to meet with ecology prior to the commencement of enforcement action.

**Comment [NC47]:** Adapted from 173-400 and 70.94.431.

**2) Civil penalties.**

- a) In addition to or as an alternate to any other penalty provided by law, any person who violates any of the provisions of chapter 173-441 WAC may incur a civil penalty in an amount as set forth in RCW 70.94.431. Each such violation shall be a separate and distinct offense, and in case of a continuing violation, each day's continuance shall be a separate and distinct violation. Any person who fails to take action as specified by an order issued pursuant to this chapter shall be liable for a civil penalty as set forth by RCW 70.94.431 for each day of continued noncompliance.
  - b) Penalties incurred but not paid shall accrue interest, beginning on the ninety-first day following the date that the penalty becomes due and payable, at the highest rate allowed by RCW 19.52.020 on the date that the penalty becomes due and payable. If violations or penalties are appealed, interest shall not begin to accrue until the thirty-first day following final resolution of the appeal. The maximum penalty amounts established in RCW 70.94.431 may be increased annually to account for inflation as determined by the state office of the economic and revenue forecast council.
  - c) Each act of commission or omission which procures, aids, or abets in the violation shall be considered a violation under the provisions of this section and subject to the same penalty. The penalties provided in this section shall be imposed pursuant to RCW 43.21B.300.
  - d) All penalties recovered under this section by ecology shall be paid into the state treasury and credited to the air pollution control account established in RCW 70.94.015.
  - e) To secure the penalty incurred under this section, the state shall have a lien on any vessel used or operated in violation of this chapter which shall be enforced as provided in RCW 60.36.050.
  - f) Public or private entities that are recipients or potential recipients of ecology grants, whether for air quality related activities or not, may have such grants rescinded or withheld by ecology for failure to comply with provisions of this chapter.
  - g) In addition to other penalties provided by this chapter, persons knowingly under-reporting emissions or other information used to set fees, or persons required to pay emission or permit fees who are more than ninety days late with such payments may be subject to a penalty equal to three times the amount of the original fee owed.
- 3) **Compliance orders.** Ecology may issue a compliance order in conjunction with a notice of violation. The order shall require the recipient of the notice of violation either to take necessary corrective action or to submit a plan for corrective action and a date when such action will be initiated.
  - 4) **Criminal penalties.** Any person who knowingly violates any of the provisions of chapter 173-441 WAC is guilty of a gross misdemeanor and upon conviction thereof shall be punished by a fine of not more than ten thousand dollars, or by imprisonment in the county jail for not more than one year, or by both for each separate violation.

**WAC 173-441-160. Confidentiality.**

- 1) Emissions data submitted to the department under this section is public information and must not be designated as confidential.
- 2) Any *owner or operator* submitting information to the department pursuant to Chapter 173-441 WAC may request that information that is not emissions data be kept confidential as proprietary information or because it is otherwise exempt from public disclosure under the Washington Public Records Act (Chapter 42.56 RCW). All such requests for confidentiality must be handled in accordance with the procedures specified in RCW 43.21A.160.

**WAC 173-441-170. Severability.** If any provision of the regulation or its application to any person or circumstance is held invalid, the remainder of the regulation or application of the provision to other persons or circumstances is not affected.

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