AMENDATORY SECTION (Amending WSR 24-24-087, filed 12/3/24, effective 1/3/25)

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

(1) **Definitions specific to this chapter:**

(a) "40 C.F.R. Part 98" or "40 C.F.R. § 98" means the United States Environmental Protection Agency's Mandatory Greenhouse Gas Reporting regulation including any applicable subparts. All references are adopted by reference as if it was copied into this rule. References mentioned in this rule are adopted as they exist on February 9, 2022((~~, or the adoption date in WAC 173-400-025(1), whichever is later~~)).

(b) "Asset controlling supplier" or "ACS" means any entity that owns or operates interconnected electricity generating facilities or serves as an exclusive marketer for these facilities even though it does not own them, and has been designated by the department and received a department-published emissions factor for the wholesale electricity procured from its system. Electricity from an asset controlling supplier is considered a specified source of electricity.

(c) "Biomass" means nonfossilized and biodegradable organic material originating from plants, animals, or microorganisms, including products, by-products, residues and waste from agriculture, forestry, and related industries as well as the nonfossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of nonfossilized and biodegradable organic material.

(d) "Carbon dioxide equivalent" or "CO_2e" means a metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

(e) "Director" means the director of the department of ecology.

(f) "Ecology" means the Washington state department of ecology.

(g) "Electric power entity" or "EPE" includes any of the following that supply or transact electric power in Washington: (i) Electricity importers and exporters; (ii) retail providers, including multijurisdictional retail providers; and (iii) the asset controlling suppliers. See WAC 173-441-124 for more detail.

(h) "Facility" unless otherwise specified in WAC 173-441-122, 173-441-124, or any subpart of 40 C.F.R. Part 98 as adopted in WAC 173-441-120, means any physical property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in Washington in actual physical contact or separated solely by a public roadway or other public right of way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.

(i) "Fuel products" means petroleum products, biomass-derived fuels, coal-based liquid fuels, natural gas, biogas, and liquid petroleum gas as established in 40 C.F.R. Part 98 Subparts LL through NN. Renewable or biogenic versions of fuel products listed in Tables MM-1 or NN-1 of 40 C.F.R. Part 98 are also considered fuel products. Assume complete combustion or oxidation of fuel products when calculating GHG emissions.

(j) "Fuel supplier" means any of the following suppliers of fuel products: (See WAC 173-441-122 for more detail.)

(i) A supplier of fossil fuel other than natural gas, including:

(A) A supplier of petroleum products;

(B) A supplier of liquid petroleum gas;

(C) A supplier of coal-based liquid fuels.

(ii) A supplier of biomass-derived fuels;

(iii) A supplier of natural gas, including:

(A) Operators of interstate and intrastate pipelines;

(B) Suppliers of liquefied or compressed natural gas;

(C) Natural gas liquid fractionators;

(D) Local distribution companies.

(k) "Greenhouse gas," "greenhouse gases," "GHG," and "GHGs" includes carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Beginning on January 1, 2012, "greenhouse gas" also includes any other gas or gases designated by ecology by rule in Table A-1 in WAC 173-441-040.

(l) "Material misstatement" means any discrepancy, omission, misreporting, or any combination of the three, that results in a five percent or greater change in total reported emissions (metric tons of CO_2e). This standard also separately applies to any product data in the annual GHG report.

(m) "Nonconformance" means any failure to use the methods or emission factors specified by chapter 173-441 WAC to calculate emissions, or the failure to meet any other requirements of chapter 173-441 or 173-446 WAC.

(n) "Operator" means any individual or organization who operates or supervises a facility, supplier, or electric power entity. The operator of an electric power entity may be the electric power entity itself.

((~~(m)~~)) (o) "Owner" means any individual or organization who has legal or equitable title to, has a leasehold interest in, or control of a facility, supplier, or electric power entity, except an individual or organization whose legal or equitable title to or leasehold interest in the facility, supplier, or electric power entity arises solely because the person is a limited partner in a partnership that has legal or equitable title to, has a leasehold interest in, or control of the facility, supplier, or electric power entity shall not be considered an "owner" of the facility, supplier, or electric power entity.

((~~(n)~~)) (p) "Person" includes the owner or operator of:

(i) A facility;

(ii) A supplier; or

(iii) An electric power entity.

((~~(o)~~)) (q) "Product data" means data related to a facility's production that is part of the annual GHG report.

((~~(p)~~)) (r) "Quality assured data" or "quality assured value" means the data are obtained from a monitoring system that is operating within the performance specifications and the quality assurance/quality control procedures set forth in the applicable rules, for example 40 C.F.R. Part 60 (February 9, 2022) or Part 75 (February 9, 2022), which is hereby incorporated by reference, without unscheduled maintenance, repair, or adjustment.

(s) "Reporter" means any of the following subject to this chapter:

(i) A facility;

(ii) A supplier; or

(iii) An electric power entity.

((~~(q)~~)) (t) "Supplier" means any person who is a:

(i) Fuel supplier that produces, imports, or delivers, or any combination of producing, importing, or delivering, fuel products in Washington; and

(ii) Supplier of carbon dioxide that produces, imports, or delivers a quantity of carbon dioxide in Washington that, if released, would result in emissions in Washington.

(2) **Definitions specific to the Climate Commitment Act program.** For those terms not listed in subsection (1) of this section, WAC 173-441-122(2), or 173-441-124(2), the definitions from chapter 70A.65 RCW, as described in chapters 173-446 and 173-446A WAC apply in this chapter in order of precedence.

(3) **Definitions from 40 C.F.R. Part 98.** For those terms not listed in subsection (1) or (2) of this section, WAC 173-441-122(2), or 173-441-124(2), the definitions found in 40 C.F.R. § 98.6 or a subpart as adopted in this chapter, apply in this chapter as modified in WAC 173-441-120(2).

AMENDATORY SECTION (Amending WSR 22-05-050, filed 2/9/22, effective 3/12/22)

WAC 173-441-030 Applicability. The GHG reporting requirements and related monitoring, recordkeeping, and reporting requirements of this chapter apply to the owners and operators of any facility that meets the requirements of subsection (1) of this section; any supplier that meets the requirements of subsection (2) of this section; and any electric power entity that meets the requirements of subsection (3) of this section. In determining whether reporting is required, the requirements of each subsection must be applied independently of the requirements of the other subsections. Research and development activities are not considered to be part of any source category defined in this chapter.

(1) **Facility reporting.** Reporting is mandatory for an owner or operator of any facility located in Washington state with total GHG emissions that exceeds the reporting threshold defined in (a) of this subsection. GHG emissions from all applicable source categories listed in WAC 173-441-120 at the facility must be included when determining whether emissions from the facility meet the reporting threshold.

(a) **Facility reporting threshold.** Any facility that emits 10,000 metric tons CO_2e or more per calendar year in total GHG emissions from all applicable source categories listed in WAC 173-441-120 exceeds the reporting threshold.

(b) **Calculating facility emissions for comparison to the threshold.** To calculate GHG emissions for comparison to the reporting threshold, the owner or operator must:

(i) Calculate the total annual emissions of each GHG in metric tons from all applicable source categories that are listed and defined in WAC 173-441-120. The GHG emissions must be calculated using the calculation methodologies specified in WAC 173-441-120 and available company records.

(ii) Include emissions of all GHGs that are listed in Table A-1 of WAC 173-441-040, including all GHG emissions from the combustion of biomass and all fugitive releases of GHG emissions from biomass, calculated as provided in the calculation methods referenced in Table 120-1.

(iii) Sum the emissions estimates for each GHG and calculate metric tons of CO_2e using Equation A-1 of this subsection.

$$CO_2e = \sum_{i=1}^{n} GHG_i \times GWP_i \qquad \textit{(Eq. A – 1)}$$

Where:

CO_2e	=	Carbon dioxide equivalent, metric tons/year.
GHG_i	=	Mass emissions of each greenhouse gas listed in Table A-1 of WAC 173-441-040, metric tons/year.
GWP_i	=	Global warming potential for each greenhouse gas from Table A-1 of WAC 173-441-040.
n	=	The number of greenhouse gases emitted.

(2) **Supplier reporting.** Beginning with the 2022 emissions year reported in 2023 reporting is mandatory for an owner or operator of any supplier with total GHG emissions in Washington that exceed the reporting threshold defined in (a) of this subsection. GHG emissions from all applicable source categories listed in WAC 173-441-122 from the supplier must be included when determining whether emissions from the supplier meet the reporting threshold.

(a) **Supplier reporting threshold.** Any supplier that produces, imports, or delivers 10,000 metric tons CO_2e or more per calendar year in total GHG emissions from all applicable source categories listed in WAC 173-441-122 exceeds the reporting threshold.

(b) **Calculating supplier emissions for comparison to the threshold.** To calculate GHG emissions for comparison to the reporting threshold, the owner or operator must:

(i) Calculate the total annual emissions of each GHG in metric tons from all applicable source categories that are listed and defined in WAC 173-441-122. The GHG emissions must be calculated using the calculation methodologies specified in WAC 173-441-122 and available company records. Supplied CO_2 is considered emissions.

(ii) Include emissions of all GHGs that are listed in Table A-1 of WAC 173-441-040, including all GHG emissions from the combustion of biomass, calculated as provided in the calculation methods referenced in WAC 173-441-122.

(iii) Sum the emissions estimates for each GHG and calculate metric tons of CO_2e using Equation A-1 of this section.

(3) **Electric power entity reporting.** Beginning with the 2022 emissions year reported in 2023 reporting is mandatory for an owner or operator of any electric power entity with total GHG emissions that exceed the reporting threshold defined in (a) of this subsection. GHG emissions from all applicable source categories listed in WAC 173-441-124 from the electric power entity must be included when de-

termining whether emissions from the electric power entity meet the reporting threshold.

(a) **Electric power entity reporting threshold.**

(i) Before emissions year 2027, any electric power entity that imports or delivers 10,000 metric tons CO_2e or more per calendar year in total GHG emissions from all applicable source categories listed in WAC 173-441-124 exceeds the reporting threshold.

(ii) Beginning with emissions year 2027 and forward, any electric power entity that imports or delivers more than zero metric tons CO_2e per calendar year in total GHG emissions from any applicable source category listed in WAC 173-441-124 exceeds the reporting threshold.

(b) **Calculating electric power entity emissions for comparison to the threshold.** To calculate GHG emissions for comparison to the reporting threshold, the owner or operator must:

(i) Calculate the total annual emissions of each GHG in metric tons from all applicable source categories that are listed and defined in WAC 173-441-124. The GHG emissions must be calculated using the calculation methodologies specified in WAC 173-441-124 and available company records.

(ii) Include emissions of all GHGs that are listed in Table A-1 of WAC 173-441-040, including all GHG emissions from the combustion of biomass, calculated as provided in the calculation methods referenced in WAC 173-441-124.

(iii) Sum the emissions estimates for each GHG and calculate metric tons of CO_2e using Equation A-1 of this section.

(4) **Applicability over time.** A person that does not meet the applicability requirements of subsection (1), (2), or (3) of this section is not subject to this rule. Such a person would become subject to the rule and the reporting requirements of this chapter if they exceed the applicability requirements of subsection (1), (2), or (3) of this section at a later time. Thus, persons should reevaluate the applicability to this chapter (including the revising of any relevant emissions calculations or other calculations) whenever there is any change that could cause a reporter to meet the applicability requirements of subsection (1), (2), or (3) of this section. Such changes include, but are not limited to, process modifications, increases in operating hours, increases in production, changes in fuel or raw material use, addition of equipment, facility expansion, and changes to this chapter.

(5) **Voluntary reporting.** A person may choose to voluntarily report to ecology GHG emissions that are not required to be reported under subsection (1), (2), or (3) of this section. Persons voluntarily reporting GHG emissions must use the methods established in WAC 173-441-120(3), 173-441-122 (1)(c), and 173-441-124 (1)((~~(c)~~)) (b) to calculate any voluntarily reported GHG emissions.

(6) **Reporting requirements when emissions of greenhouse gases fall below reporting thresholds.** Except as provided in this subsection, once a reporter is subject to the requirements of this chapter, the person must continue for each year thereafter to comply with all requirements of this chapter, including the requirement to submit annual GHG reports (annual GHG reports, GHG report, emissions report, annual report), even if the reporter does not meet the applicability requirements in subsection (1), (2), or (3) of this section in a future year. Reporters with a compliance obligation under chapter 70A.65 RCW, as described in chapter 173-446 WAC must continue to report for any year with a compliance obligation.

(a) If reported emissions for a facility or a supplier are less than 10,000 metric tons CO_2e per year for five consecutive years, then the ((~~person~~)) facility or supplier may discontinue reporting as required by this chapter, provided that the ((~~person~~)) facility or supplier submits a notification to ecology that announces the cessation of reporting and explains the reasons for the reduction in emissions. The notification must be submitted no later than the report submission due date, specified in WAC 173-441-050(2), of the year immediately following the fifth consecutive year of emissions less than 10,000 tons CO_2e per year. The ((~~person~~)) facility or supplier must maintain the corresponding records required under WAC 173-441-050(6) for each of the five consecutive years and retain such records for 10 years following the year that reporting was discontinued. The ((~~person~~)) facility or supplier must resume reporting if annual emissions in any future calendar year increase above the thresholds in subsection (1) or (2) of this section.

(b) If reported emissions for a facility or supplier are less than ((~~five thousand~~)) 5,000 metric tons CO_2e per year for three consecutive years, then the ((~~person~~)) facility or supplier may discontinue reporting as required by this chapter provided that the ((~~person~~)) facility or supplier submits a notification to ecology that announces the cessation of reporting and explains the reasons for the reduction in emissions. The notification must be submitted no later than the report submission due date, specified in WAC 173-441-050(2), of the year immediately following the third consecutive year of emissions less than 5,000 tons CO_2e per year. The ((~~person~~)) facility or supplier must maintain the corresponding records required under WAC 173-441-050(6) for each of the three consecutive years and retain such records for 10 years following the year that reporting was discontinued. The ((~~person~~)) facility or supplier must resume reporting if annual emissions in any future calendar year increase above the thresholds in subsection (1) or (2) of this section. ((~~This provision does not apply to electric power entities.~~))

(c) If the operations of a reporter are changed such that all applicable GHG-emitting processes and operations listed in WAC 173-441-120, 173-441-122, and 173-441-124 cease to operate, then the person is exempt from reporting in the years following the year in which cessation of such operations occurs, provided that the person submits a notification to ecology that announces the cessation of reporting and certifies to the closure of all GHG-emitting processes and operations no later than the report submission due date, specified in WAC 173-441-050(2), of the year following such changes. This provision does not apply to seasonal or other temporary cessation of operations. This provision does not apply to facilities with municipal solid waste landfills, industrial waste landfills, or to underground coal mines. The person must resume reporting for any future calendar year during which any of the GHG-emitting processes or operations resume operation.

(d) A federal power marketing association may voluntarily elect to comply with the reporting requirements of this chapter and may voluntarily elect to assume the compliance obligation associated with all electricity marketed in the state by the federal power marketing administration as specified in chapter 173-446 WAC. For any emissions year in which a federal power marketing administration has assumed a voluntary compliance obligation as described, any electric power entity with no reportable emissions under WAC 173-441-124 for that emis-

sions year and had only reported electricity imports associated with power purchased from the federal marketing association for the previous emissions year, may forgo reporting for that emissions year by notifying ecology in writing no later than February 1st of the following emissions year. This written notice must be accompanied by appropriate documentation, including a signed attestation or declaration approved by the entity's control person as defined in WAC 173-446-020.

(e) Except as provided in (d) of this subsection, if an electric power entity reports zero MT CO_2e in emissions for three consecutive years, not including years where it opted to forgo reporting under (d) of this subsection, then the electric power entity may discontinue reporting as required by this chapter provided that the electric power entity submits a notification to ecology that announces the cessation of reporting and explains the reasons for the reduction in emissions. The notification must be submitted no later than the report submission due date, specified in WAC 173-441-050(2), of the year immediately following the third consecutive year of reporting zero MT CO_2e in emissions. The electric power entity must maintain the corresponding records required under WAC 173-441-050(6) for each of the three consecutive years and retain such records for 10 years following the year that reporting was discontinued. The electric power entity must resume reporting if annual emissions in any future calendar year increase above the thresholds in subsection (3) of this section.

AMENDATORY SECTION (Amending WSR 22-05-050, filed 2/9/22, effective 3/12/22)

WAC 173-441-040 Greenhouse gases. (1) **Greenhouse gases.** Table A-1 of this section lists the GHGs regulated under this chapter and their global warming potentials.

(2) **CO_2e conversion.** Use Equation A-1 of WAC 173-441-030 (1)(b)(iii) and the global warming potentials (GWP) listed in Table A-1 of this section to convert emissions into CO_2e.

Table A-1:
Global Warming Potentials (100-Year Time Horizon)

Name	CAS No.	Chemical Formula	GWP (100 yr.)[1,2]	
			2012-2013	≥ 2014[3,4]
Carbon dioxide	124-38-9	CO_2	1	1
Methane	74-82-8	CH_4	21	25
Nitrous oxide	10024-97-2	N_2O	310	298
Fully Fluorinated GHGs				
Sulfur hexafluoride	2551-62-4	SF_6	23,900	22,800
Trifluoromethyl sulphur pentafluoride	373-80-8	SF_5CF_3	17,700	17,700
Nitrogen trifluoride	7783-54-2	NF_3	17,200	17,200
PFC-14 (Perfluoromethane)	75-73-0	CF_4	6,500	7,390
PFC-116 (Perfluoroethane)	76-16-4	C_2F_6	9,200	12,200
PFC-218 (Perfluoropropane)	76-19-7	C_3F_8	7,000	8,830

Name	CAS No.	Chemical Formula	GWP (100 yr.)[1,2]	
			2012-2013	≥ 2014[3,4]
Perfluorocyclopropane	931-91-9	C-C_3F_6	17,340	17,340
PFC-3-1-10 (Perfluorobutane)	355-25-9	C_4F_{10}	7,000	8,860
PFC-318 (Perfluorocyclobutane)	115-25-3	C-C_4F_8	8,700	10,300
PFC-4-1-12 (Perfluoropentane)	678-26-2	C_5F_{12}	7,500	9,160
PFC-5-1-14 (Perfluorohexane, FC-72)	355-42-0	C_6F_{14}	7,400	9,300
PFC-6-1-12 (Hexadecafluoroheptane)	335-57-9	C_7F_{16}; $CF_3(CF_2)_5CF_3$	7,820	7,820
PFC-7-1-18 (Octadecafluorooctane)	307-34-6	C_8F_{18}; $CF_3(CF_2)_6CF_3$	7,620	7,620
PFC-9-1-18	306-94-5	$C_{10}F_{18}$	7,500	7,500
PFPMIE (HT-70)	NA	$CF_3OCF(CF_3)CF_2OCF_2OCF_3$	10,300	10,300
Perfluorodecalin (cis)	60433-11-6	Z-$C_{10}F_{18}$	7,236	7,236
Perfluorodecalin (trans)	60433-12-7	E-$C_{10}F_{18}$	6,288	6,288
Saturated Hydrofluorocarbons (HFCs) with Two or Fewer Carbon-Hydrogen Bonds				
HFC-23	75-46-7	CHF_3	11,700	14,800
HFC-32	75-10-5	CH_2F_2	650	675
HFC-125	354-33-6	C_2HF_5	2,800	3,500
HFC-134	359-35-3	$C_2H_2F_4$	1,000	1,100
HFC-134a	811-97-2	CH_2FCF_3	1,300	1,430
HFC-227ca (1,1,1,2,2,3,3-Heptafluoropropane)	2252-84-8	$CF_3CF_2CHF_2$	2,640	2,640
HFC-227ea	431-89-0	C_3HF_7	2,900	3,220
HFC-236cb	677-56-5	$CH_2FCF_2CF_3$	1,340	1,340
HFC-236ea	431-63-0	CHF_2CHFCF_3	1,370	1,370
HFC-236fa	690-39-1	$C_3H_2F_6$	6,300	9,810
HFC-329p (1,1,1,2,2,3,3,4,4-Nonafluorobutane)	375-17-7	$CHF_2CF_2CF_2CF_3$	2,360	2,360
HFC-43-10mee	138495-42-8	$CF_3CFHCFHCF_2CF_3$	1,300	1,640
Saturated Hydrofluorocarbons (HFCs) with Three or More Carbon-Hydrogen Bonds				
HFC-41	593-53-3	CH_3F	150	92
HFC-143	430-66-0	$C_2H_3F_3$	300	353
HFC-143a	420-46-2	$C_2H_3F_3$	3,800	4,470
HFC-152	624-72-6	CH_2FCH_2F	53	53
HFC-152a	75-37-6	CH_3CHF_2	140	124
HFC-161	353-36-6	CH_3CH_2F	12	12
HFC-245ca	679-86-7	$C_3H_3F_5$	560	693
HFC-245cb (1,1,1,2,2-Pentafluoropropane)	1814-88-6	$CF_3CF_2CH_3$	4,620	4,620
HFC-245ea (1,1,2,3,3-Pentafluoropropane)	24270-66-4	$CHF_2CHFCHF_2$	235	235
HFC-245eb (1,1,1,2,3-Pentafluoropropane)	431-31-2	$CH_2FCHFCF_3$	290	290
HFC-245fa	460-73-1	$CHF_2CH_2CF_3$	1,030	1,030

Name	CAS No.	Chemical Formula	GWP (100 yr.)[1,2]	
			2012-2013	≥ 2014[3,4]
HFC-263fb (1,1,1-Trifluoropropane)	421-07-8	$CH_3CH_2CF_3$	76	76
HFC-272ca (2,2-Difluoropropane)	420-45-1	$CH_3CF_2CH_3$	144	144
HFC-365mfc	406-58-6	$CH_3CF_2CH_2CF_3$	794	794
Saturated Hydrofluoroethers (HFEs) and Hydrochlorofluoroethers (HCFEs) with One Carbon-Hydrogen Bond				
HFE-125	3822-68-2	CHF_2OCF_3	14,900	14,900
HFE-227ea	2356-62-9	$CF_3CHFOCF_3$	1,540	1,540
HFE-329mcc2	134769-21-4	$CF_3CF_2OCF_2CHF_2$	919	919
HFE-329me3 (1,1,1,2,3,3-Hexafluoro-3-(trifluoromethoxy)propane)	428454-68-6	$CF_3CFHCF_2OCF_3$	NA	4,550*
1,1,1,2,2,3,3-Heptafluoro-3-(1,2,2,2-tetrafluoroethoxy)-propane	3330-15-2	$CF_3CF_2CF_2OCHFCF_3$	NA	6,490*
Saturated HFEs and HCFEs with Two Carbon-Hydrogen Bonds				
HFE-134 (HG-00)	1691-17-4	CHF_2OCHF_2	6,320	6,320
HFE-236ca (1-(Difluoromethoxy)-1,1,2,2-tetrafluoroethane)	32778-11-3	$CHF_2OCF_2CHF_2$	NA	4,240*
HFE-236ca12 (HG-10)	78522-47-1	$CHF_2OCF_2OCHF_2$	2,800	2,800
HFE-236ea2 (Desflurane)	57041-67-5	$CHF_2OCHFCF_3$	989	989
HFE-236fa	20193-67-3	$CF_3CH_2OCF_3$	487	487
HFE-338mcf2	156053-88-2	$CF_3CF_2OCH_2CF_3$	552	552
HFE-338mmz1	26103-08-2	$CHF_2OCH(CF_3)_2$	380	380
HFE-338pcc13 (HG-01)	188690-78-0	$CHF_2OCF_2CF_2OCHF_2$	1,500	1,500
HFE-43-10pccc (H-Galden 1040x, HG-11)	E1730133	$CHF_2OCF_2OC_2F_4OCHF_2$	1,870	1,870
HCFE-235ca2 (Enflurane) (2-Chloro-1-(difluoromethoxy)-1,1,2-trifluoroethane)	13838-16-9	CHF_2OCF_2CHFCl	NA	583*
HCFE-235da2 (Isoflurane)	26675-46-7	$CHF_2OCHClCF_3$	350	350
HG-02 (1-(Difluoromethoxy)-2-(2-(difluoromethoxy)-1,1,2,2-tetrafluoroethoxy)-1,1,2,2-tetrafluoroethane)	205367-61-9	$HF_2C\text{-}(OCF_2CF_2)_2\text{-}OCF_2H$	NA	3,825*
HG-03 (1,1,3,3,4,4,6,6,7,7,9,9,10,10,12,12-Hexadecafluoro-2,5,8,11-tetraoxadodecane)	173350-37-3	$HF_2C\text{-}(OCF_2CF_2)_3\text{-}OCF_2H$	NA	3,670*
HG-20 ((Difluoromethoxy) ((difluoromethoxy) difluoromethoxy) difluoromethane)	249932-25-0	$HF_2C\text{-}(OCF_2)_2\text{-}OCF_2H$	NA	5,300*
HG-21 (1,1,3,3,5,5,7,7,8,8,10,10-Dodecafluoro-2,4,6,9-tetraoxadecane)	249932-26-1	$HF_2C\text{-}OCF_2CF_2OCF_2OCF_2O\text{-}CF_2H$	NA	3,890*
HG-30 (1,1,3,3,5,5,7,7,9,9-Decafluoro-2,4,6,8-tetraoxanonane)	188690-77-9	$HF_2C\text{-}(OCF_2)_3\text{-}OCF_2H$	NA	7,330*

Name	CAS No.	Chemical Formula	GWP (100 yr.)[1,2]	
			2012-2013	≥ 2014[3,4]
1,1,3,3,4,4,6,6,7,7,9,9,10,10,12,12,13,13,15,15-eicosafluoro-2,5,8,11,14-Pentaoxapentadecane	173350-38-4	$HCF_2O(CF_2CF_2O)_4CF_2H$	NA	3,630*
1,1,2-Trifluoro-2-(trifluoromethoxy)-ethane	84011-06-3	$CHF_2CHFOCF_3$	NA	1,240*
Trifluoro (fluoromethoxy) methane	2261-01-0	CH_2FOCF_3	NA	751*
Saturated HFEs and HCFEs with Three or More Carbon-Hydrogen Bonds				
HFE-143a	421-14-7	CH_3OCF_3	756	756
HFE-245cb2	22410-44-2	$CH_3OCF_2CF_3$	708	708
HFE-245fa1	84011-15-4	$CHF_2CH_2OCF_3$	286	286
HFE-245fa2	1885-48-9	$CHF_2OCH_2CF_3$	659	659
HFE-254cb2	425-88-7	$CH_3OCF_2CHF_2$	359	359
HFE-263fb2	460-43-5	$CF_3CH_2OCH_3$	11	11
HFE-263m1; R-E-143a (1,1,2,2-Tetrafluoro-1-(trifluoromethoxy)ethane)	690-22-2	$CF_3OCH_2CH_3$	NA	29*
HFE-347mcc3 (HFE-7000)	375-03-1	$CH_3OCF_2CF_2CF_3$	575	575
HFE-347mcf2	171182-95-9	$CF_3CF_2OCH_2CHF_2$	374	374
HFE-347mmy1	22052-84-2	$CH_3OCF(CF_3)_2$	343	343
HFE-347mmz1; Sevoflurane (2-(Difluoromethoxy)-1,1,1,3,3,3-hexafluoropropane)	28523-86-6	$(CF_3)_2CHOCHF_2$	NA	216*
HFE-347pcf2	406-78-0	$CHF_2CF_2OCH_2CF_3$	580	580
HFE-356mec3	382-34-3	$CH_3OCF_2CHFCF_3$	101	101
HFE-356mff2 (bis(2,2,2-trifluoroethyl) ether)	333-36-8	$CF_3CH_2OCH_2CF_3$	NA	17*
HFE-356mmz1	13171-18-1	$(CF_3)_2CHOCH_3$	27	27
HFE-356pcc3	160620-20-2	$CH_3OCF_2CF_2CHF_2$	110	110
HFE-356pcf2	50807-77-7	$CHF_2CH_2OCF_2CHF_2$	265	265
HFE-356pcf3	35042-99-0	$CHF_2OCH_2CF_2CHF_2$	502	502
HFE-365mcf2 (1-Ethoxy-1,1,2,2,2-pentafluoroethane)	22052-81-9	$CF_3CF_2OCH_2CH_3$	NA	58*
HFE-365mcf3	378-16-5	$CF_3CF_2CH_2OCH_3$	11	11
HFE-374pc2	512-51-6	$CH_3CH_2OCF_2CHF_2$	557	557
HFE-449sl (HFE-7100) Chemical blend	163702-07-6 163702-08-7	$C_4F_9OCH_3$ $(CF_3)_2CFCF_2OCH_3$	297	297
HFE-569sf2 (HFE-7200) Chemical blend	163702-05-4 163702-06-5	$C_4F_9OC_2H_5$ $(CF_3)_2CFCF_2OC_2H_5$	59	59
HG'-01 (1,1,2,2-Tetrafluoro-1,2-dimethoxyethane)	73287-23-7	$CH_3OCF_2CF_2OCH_3$	NA	222*
HG'-02 (1,1,2,2-Tetrafluoro-1-methoxy-2-(1,1,2,2-tetrafluoro-2-methoxyethoxy)ethane)	485399-46-0	$CH_3O(CF_2CF_2O)_2CH_3$	NA	236*

Name	CAS No.	Chemical Formula	GWP (100 yr.)[1,2]	
			2012-2013	≥ 2014[3,4]
HG'-03 (3,3,4,4,6,6,7,7,9,9,10,10-Dodecafluoro-2,5,8,11-tetraoxadodecane)	485399-48-2	$CH_3O(CF_2CF_2O)_3CH_3$	NA	221*
Difluoro(methoxy)methane	359-15-9	CH_3OCHF_2	NA	144*
2-Chloro-1,1,2-trifluoro-1-methoxyethane	425-87-6	CH_3OCF_2CHFCl	NA	122*
1-Ethoxy-1,1,2,2,3,3,3-heptafluoropropane	22052-86-4	$CF_3CF_2CF_2OCH_2CH_3$	NA	61*
2-Ethoxy-3,3,4,4,5-pentafluorotetrahydro-2,5-bis [1,2,2,2-tetrafluoro-1-(trifluoromethyl)ethyl]-furan	920979-28-8	$C_{12}H_5F_{19}O_2$	NA	56*
1-Ethoxy-1,1,2,3,3,3-hexafluoropropane	380-34-7	$CF_3CHFCF_2OCH_2CH_3$	NA	23*
Fluoro(methoxy)methane	460-22-0	CH_3OCH_2F	NA	13*
1,1,2,2-Tetrafluoro-3-methoxy-propane; Methyl 2,2,3,3-tetrafluoropropyl ether	60598-17-6	$CHF_2CF_2CH_2OCH_3$	NA	0.5*
1,1,2,2-Tetrafluoro-1-(fluoromethoxy) ethane	37031-31-5	$CH_2FOCF_2CF_2H$	NA	871*
Difluoro (fluoromethoxy) methane	461-63-2	CH_2FOCHF_2	NA	617*
Fluoro (fluoromethoxy) methane	462-51-1	CH_2FOCH_2F	NA	130*
Fluorinated Formates				
Trifluoromethyl formate	85358-65-2	$HCOOCF_3$	NA	588*
Perfluoroethyl formate	313064-40-3	$HCOOCF_2CF_3$	NA	580*
1,2,2,2-Tetrafluoroethyl formate	481631-19-0	$HCOOCHFCF_3$	NA	470*
Perfluorobutyl formate	197218-56-7	$HCOOCF_2CF_2CF_2CF_3$	NA	392*
Perfluoropropyl formate	271257-42-2	$HCOOCF_2CF_2CF_3$	NA	376*
1,1,1,3,3,3-Hexafluoropropan-2-yl formate	856766-70-6	$HCOOCH(CF_3)_2$	NA	333*
2,2,2-Trifluoroethyl formate	32042-38-9	$HCOOCH_2CF_3$	NA	33*
3,3,3-Trifluoropropyl formate	1344118-09-7	$HCOOCH_2CH_2CF_3$	NA	17*
Fluorinated Acetates				
Methyl 2,2,2-trifluoroacetate	431-47-0	CF_3COOCH_3	NA	52*
1,1-Difluoroethyl 2,2,2-trifluoroacetate	1344118-13-3	$CF_3COOCF_2CH_3$	NA	31*
Difluoromethyl 2,2,2-trifluoroacetate	2024-86-4	$CF_3COOCHF_2$	NA	27*
2,2,2-Trifluoroethyl 2,2,2-trifluoroacetate	407-38-5	$CF_3COOCH_2CF_3$	NA	7*
Methyl 2,2-difluoroacetate	433-53-4	HCF_2COOCH_3	NA	3*
Perfluoroethyl acetate	343269-97-6	$CH_3COOCF_2CF_3$	NA	2.1*
Trifluoromethyl acetate	74123-20-9	CH_3COOCF_3	NA	2.0*
Perfluoropropyl acetate	1344118-10-0	$CH_3COOCF_2CF_2CF_3$	NA	1.8*
Perfluorobutyl acetate	209597-28-4	$CH_3COOCF_2CF_2CF_2CF_3$	NA	1.6*

Name	CAS No.	Chemical Formula	GWP (100 yr.)[1,2]	
			2012-2013	≥ 2014[3,4]
Ethyl 2,2,2-trifluoroacetate	383-63-1	$CF_3COOCH_2CH_3$	NA	1.3*
Carbonofluoridates				
Methyl carbonofluoridate	1538-06-3	$FCOOCH_3$	NA	95*
1,1-Difluoroethyl carbonofluoridate	1344118-11-1	$FCOOCF_2CH_3$	NA	27*
Fluorinated Alcohols other than Fluorotelomer Alcohols				
Bis(trifluoromethyl)-methanol	920-66-1	$(CF_3)_2CHOH$	195	195
(Octafluorotetramethy-lene) hydroxymethyl group	NA	$X\text{-}(CF_2)_4CH(OH)\text{-}X$	73	73
2,2,3,3,3-pentafluoropropanol	422-05-9	$CF_3CF_2CH_2OH$	42	42
2,2,3,3,4,4,4-Heptafluorobutan-1-ol	375-01-9	$C_3F_7CH_2OH$	NA	25*
2,2,2-Trifluoroethanol	75-89-8	CF_3CH_2OH	NA	20*
2,2,3,4,4,4-Hexafluoro-1-butanol	382-31-0	$CF_3CHFCF_2CH_2OH$	NA	17*
2,2,3,3-Tetrafluoro-1-propanol	76-37-9	$CHF_2CF_2CH_2OH$	NA	13*
2,2-Difluoroethanol	359-13-7	CHF_2CH_2OH	NA	3*
2-Fluoroethanol	371-62-0	CH_2FCH_2OH	NA	1.1*
4,4,4-Trifluorobutan-1-ol	461-18-7	$CF_3(CH_2)_2CH_2OH$	NA	0.05*
Unsaturated Perfluorocarbons (PFCs)				
PFC-1114; TFE (tetrafluoroethylene (TFE); Perfluoroethene)	116-14-3	$CF_2{=}CF_2$; C_2F_4	0.04	0.004
PFC-1216; Dyneon HFP (hexafluoropropylene (HFP); Perfluoropropene)	116-15-4	C_3F_6; $CF_3CF{=}CF_2$	0.05	0.05
PFC C-1418 (Perfluorocyclopentene; Octafluorocyclopentene)	559-40-0	$c\text{-}C_5F_8$	1.97	1.97
Perfluorobut-2-ene	360-89-4	$CF_3CF{=}CFCF_3$	1.82	1.82
Perfluorobut-1-ene	357-26-6	$CF_3CF_2CF{=}CF_2$	0.10	0.10
Perfluorobuta-1,3-diene	685-63-2	$CF_2{=}CFCF{=}CF_2$	0	0.003
Unsaturated Hydrofluorocarbons (HFCs) and Hydrochlorofluorocarbons (HCFCs)				
HFC-1132a; VF2 (vinylidiene fluoride)	75-38-7	$C_2H_2F_2$, $CF_2{=}CH_2$	0.04	0.04
HFC-1141; VF (vinyl fluoride)	75-02-5	C_2H_3F, $CH_2{=}CHF$	0.02	0.02
(E)-HFC-1225ye ((E)-1,2,3,3,3-Pentafluoroprop-1-ene)	5595-10-8	$CF_3CF{=}CHF(E)$	0.06	0.06
(Z)-HFC-1225ye ((Z)-1,2,3,3,3-Pentafluoroprop-1-ene)	5528-43-8	$CF_3CF{=}CHF(Z)$	0.22	0.22
Solstice 1233zd(E) (trans-1-chloro-3,3,3-trifluoroprop-1-ene)	102687-65-0	$C_3H_2ClF_3$; $CHCl{=}CHCF_3$	NA	1.34*
HFC-1234yf; HFO-1234yf (2,3,3,3-Tetrafluoroprop-1-ene)	754-12-1	$C_3H_2F_4$; $CF_3CF{=}CH_2$	0.31	0.31
HFC-1234ze(E) ((E)-1,3,3,3-Tetrafluoroprop-1-ene)	1645-83-6	$C_3H_2F_4$; $trans\text{-}CF_3CH{=}CHF$	0.97	0.97

Name	CAS No.	Chemical Formula	GWP (100 yr.)[1,2]	
			2012-2013	≥ 2014[3,4]
HFC-1234ze(Z) ((Z)-1,3,3,3-Tetrafluoroprop-1-ene)	29118-25-0	$C_3H_2F_4$; cis-$CF_3CH=CHF$; $CF_3CH=CHF$	0.29	0.29
HFC-1243zf; TFP (trifluoro propene (TFP); 3,3,3-Trifluoroprop-1-ene)	677-21-4	$C_3H_3F_3$,$CF_3CH=CH_2$	0.12	0.12
(Z)-HFC-1336 ((Z)-1,1,1,4,4,4-Hexafluorobut-2-ene)	692-49-9	$CF_3CH=CHCF_3$(Z)	1.58	1.58
HFC-1345zfc (3,3,4,4,4-Pentafluorobut-1-ene)	374-27-6	$C_2F_5CH=CH_2$	0.09	0.09
Capstone 42-U (perfluorobutyl ethene (42-U); 3,3,4,4,5,5,6,6,6-Nonafluorohex-1-ene)	19430-93-4	$C_6H_3F_9$,$CF_3(CF_2)_3CH=CH_2$	0.16	0.16
Capstone 62-U (perfluorohexyl ethene (62-U); 3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooct-1-ene)	25291-17-2	$C_8H_3F_{13}$,$CF_3(CF_2)_5CH=CH_2$	0.11	0.11
Capstone 82-U (perfluorooctyl ethene (82-U); 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-Heptadecafluorodec-1-ene)	21652-58-4	$C_{10}H_3F_{17}$,$CF_3(CF_2)_7CH=CH_2$	0.09	0.09
Unsaturated Halogenated Ethers				
PMVE; HFE-216 (perfluoromethyl vinyl ether (PMVE))	1187-93-5	$CF_3OCF=CF_2$	NA	0.17*
Fluoroxene ((2,2,2-Trifluoroethoxy) ethene)	406-90-6	$CF_3CH_2OCH=CH_2$	NA	0.05*
Fluorinated Aldehydes				
3,3,3-Trifluoro-propanal	460-40-2	CF_3CH_2CHO	NA	0.01*
Fluorinated Ketones				
Novec 1230 (FK-5-1-12 Perfluoroketone; FK-5-1-12myy2; perfluoro (2-methyl-3-pentanone))	756-13-8	$CF_3CF_2C(O)CF(CF_3)_2$	NA	0.1*
Fluorotelomer Alcohols				
3,3,4,4,5,5,6,6,7,7,7-Undecafluoroheptan-1-ol	185689-57-0	$CF_3(CF_2)_4CH_2CH_2OH$	NA	0.43*
3,3,3-Trifluoropropan-1-ol	2240-88-2	$CF_3CH_2CH_2OH$	NA	0.35*
3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-Pentadecafluorononan-1-ol	755-02-2	$CF_3(CF_2)_6CH_2CH_2OH$	NA	0.33*
3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-Nonadecafluoroundecan-1-ol	87017-97-8	$CF_3(CF_2)_8CH_2CH_2OH$	NA	0.19*
Fluorinated GHGs with Carbon-Iodine Bond(s)				
Trifluoroiodomethane	2314-97-8	CF_3I	NA	0.4*
Other Fluorinated Compounds				
Dibromodifluoromethane (Halon 1202)	75-61-6	CBr_2F_2	NA	231*
2-Bromo-2-chloro-1,1,1-trifluoroethane (Halon-2311/ Halothane)	151-67-7	$CHBrClCF_3$	NA	41*
Default GWPs for which Chemical-Specific GWPs are not Listed Above				
((~~Saturated PFCs~~)) Fully fluorinated GHGs			10,000	10,000

Name	CAS No.	Chemical Formula	GWP (100 yr.)[1,2]	
			2012-2013	≥ 2014[3,4]
Saturated HFCs with 2 or fewer carbon-hydrogen bonds			3,700	3,700
Saturated HFCs with 3 or more carbon-hydrogen bonds			930	930
Unsaturated PFCs and unsaturated HFCs			1	1

NA = not available.
[1] = **Determining applicability for emissions years 2013 and 2014.** For emissions year 2013 (reported in 2014) and emissions year 2014 (reported in 2015), facilities may use the GWPs in either column when calculating GHG emissions for comparison to the reporting threshold under WAC 173-441-030.
[2] = **Calculating annual GHG emissions for emissions year 2013.** For emissions year 2013 (reported in 2014), facilities may use the GWPs in either column when calculating GHG emissions for the annual GHG report.
[3] = **Determining applicability for emissions year 2015+.** For emissions year 2015 (reported in 2016) and subsequent years, facilities must use the GWPs in this column when calculating GHG emissions for comparison to the reporting threshold under WAC 173-441-030.
[4] = **Calculating annual GHG emissions for emissions year 2014+.** For emissions year 2014 (reported in 2015) and subsequent years, facilities must use the GWPs in this column when calculating GHG emissions for the annual GHG report.
* = Requirements to include emissions of this compound when calculating GHG emissions for comparison to the reporting threshold under WAC 173-441-030 and when calculating GHG emissions for the annual GHG report become effective beginning with emissions year 2016 (reported in 2017).

AMENDATORY SECTION (Amending WSR 24-24-087, filed 12/3/24, effective 1/3/25)

WAC 173-441-050 General monitoring, reporting, recordkeeping and verification requirements. Persons subject to the requirements of this chapter must submit GHG reports to ecology, as specified in this section. Every metric ton of CO_2e emitted by a reporter required to report under this chapter and covered under any applicable source category listed in WAC 173-441-120, 173-441-122, or 173-441-124 must be included in the report.

(1) **General.** Follow the procedures for emission calculation, monitoring, quality assurance, missing data, recordkeeping, and reporting that are specified in each relevant section of this chapter.

(2) **Schedule.** The annual GHG report must be submitted as follows:

(a) Report submission due date:

(i) A person required to report or voluntarily reporting GHG emissions under WAC 173-441-030 must submit the report required under this chapter to ecology no later than March 31st of each calendar year for GHG emissions in the previous calendar year. Electric power entities required to report or voluntarily reporting GHG emissions under WAC 173-441-124 must submit a report ((~~by~~)) no later than June 1st of each calendar year for GHG emissions in the previous calendar year.

(ii) Unless otherwise stated, if the final day of any time period falls on a weekend or a state holiday, the time period shall be extended to the next business day.

(b) Reporting requirements begin:

(i) For an existing reporter that began operation before January 1, 2012, report emissions for calendar year 2012 and each subsequent calendar year.

(ii) For a new reporter that begins operation on or after January 1, 2012, and becomes subject to the rule in the year that it becomes operational, report emissions beginning with the first operating month and ending on December 31st of that year. Each subsequent annual report must cover emissions for the calendar year, beginning on January 1st and ending on December 31st.

(iii) For any reporter that becomes subject to this rule because of a physical or operational change that is made after January 1,

2012, report emissions for the first calendar year in which the change occurs.

(A) Reporters begin reporting with the first month of the change and ending on December 31st of that year. For a reporter that becomes subject to this rule solely because of an increase in hours of operation or level of production, the first month of the change is the month in which the increased hours of operation or level of production, if maintained for the remainder of the year, would cause the reporter to exceed the applicable threshold.

(B) Suppliers and electric power entities begin reporting January 1st and ending on December 31st the year of the change.

(C) For all reporters, each subsequent annual report must cover emissions for the calendar year, beginning on January 1st and ending on December 31st.

(3) **Content of the annual report.** Each annual GHG report must contain the following information. All reported information is subject to verification by ecology as described in subsection (5) of this section.

(a) Reporter name, reporter ID number, and physical street address of the reporter, including the city, state, and zip code. If the facility does not have a physical street address, then the facility must provide the latitude and longitude representing the geographic centroid or center point of facility operations in decimal degree format. This must be provided in a comma-delimited "latitude, longitude" coordinate pair reported in decimal degrees to at least four digits to the right of the decimal point.

(b) Year and months covered by the report.

(c) Date of submittal.

(d) For facilities, report annual emissions of each GHG (as defined in WAC 173-441-020) and each fluorinated heat transfer fluid, as follows:

(i) Annual emissions (including biogenic CO_2) aggregated for all GHGs from all applicable source categories in WAC 173-441-120 and expressed in metric tons of CO_2e calculated using Equation A-1 of WAC 173-441-030 (1)(b)(iii).

(ii) Annual emissions of biogenic CO_2 aggregated for all applicable source categories in WAC 173-441-120, expressed in metric tons.

(iii) Annual emissions from each applicable source category in WAC 173-441-120, expressed in metric tons of each applicable GHG listed in (d)(iii)(A) through (F) of this subsection.

(A) Biogenic CO_2.

(B) CO_2 (including biogenic CO_2).

(C) CH_4.

(D) N_2O.

(E) Each fluorinated GHG.

(F) For electronics manufacturing each fluorinated heat transfer fluid that is not also a fluorinated GHG as specified under WAC 173-441-040.

(iv) Emissions and other data for individual units, processes, activities, and operations as specified in the "data reporting requirements" section of each applicable source category referenced in WAC 173-441-120.

(v) Indicate (yes or no) whether reported emissions include emissions from a cogeneration unit located at the facility.

(vi) When applying (d)(i) of this subsection to fluorinated GHGs and fluorinated heat transfer fluids, calculate and report CO_2e for only those fluorinated GHGs and fluorinated heat transfer fluids listed in WAC 173-441-040.

(vii) For reporting year 2014 and thereafter, you must enter into verification software specified by the director the data specified in the verification software records provision in each applicable recordkeeping section. For each data element entered into the verification software, if the software produces a warning message for the data value and you elect not to revise the data value, you may provide an explanation in the verification software of why the data value is not being revised. Whenever the use of verification software is required or voluntarily used, the file generated by the verification software must be submitted with the facility's annual GHG report.

(e) For suppliers and electric power entities, report annual emissions of each GHG (as defined in WAC 173-441-020) as follows:

(i) Annual emissions (including biogenic CO_2) aggregated for all GHGs from all applicable source categories in WAC 173-441-122 and 173-441-124 and expressed in metric tons of CO_2e calculated using Equation A-1 of WAC 173-441-030 (1)(b)(iii).

(ii) Annual emissions of biogenic CO_2 aggregated for all applicable source categories in WAC 173-441-122 and 173-441-124, expressed in metric tons.

(iii) Annual emissions from each applicable source category in WAC 173-441-122 and 173-441-124, expressed in metric tons of each applicable GHG listed in subsection (3)(d)(iii)(A) through (E) of this section.

(A) Biogenic CO_2.

(B) CO_2 (including biogenic CO_2).

(C) CH_4.

(D) N_2O.

(E) Each fluorinated GHG.

(iv) Emissions and other data for individual units, processes, activities, and operations as specified in the "data reporting requirements" section of each applicable source category referenced in WAC 173-441-122 and 173-441-124.

(f) A written explanation, as required under subsection (4) of this section, if you change emission or product data calculation methodologies during the reporting period or since the previous reporting period.

(g) Each data element for which a missing data procedure was used according to the procedures of an applicable subpart referenced in WAC 173-441-120, 173-441-122, or 173-441-124 and the ((~~total number of hours in the year that a missing data procedure was used for each data element~~)) data capture rate of that element, as a percentage of the data year.

(h) A signed and dated certification statement provided by the designated representative of the owner or operator, according to the requirements of WAC 173-441-060 (5)(a).

(i) NAICS code(s) that apply to the reporter. NAICS codes are subject to approval by ecology.

(i) Primary NAICS code. Report the NAICS code that most accurately describes the reporter's primary product/activity/service. The primary product/activity/service is the principal source of revenue for the reporter. A reporter that has two distinct products/activities/

services providing comparable revenue may report a second primary NAICS code.

(ii) Additional NAICS code(s). Report all additional NAICS codes that describe all product(s)/activity(s)/service(s) at the reporter that are not related to the principal source of revenue.

(j) Legal name(s) and physical address(es) of the highest-level United States parent company(s) of the owners (or operators) of the reporter and the percentage of ownership interest for each listed parent company as of December 31st of the year for which data are being reported according to the following instructions.

(i) If the reporter is entirely owned by a single United States company that is not owned by another company, provide that company's legal name and physical address as the United States parent company and report 100 percent ownership.

(ii) If the reporter is entirely owned by a single United States company that is, itself, owned by another company (e.g., it is a division or subsidiary of a higher-level company), provide the legal name and physical address of the highest-level company in the ownership hierarchy as the United States parent company and report 100 percent ownership.

(iii) If the reporter is owned by more than one United States company (e.g., company A owns 40 percent, company B owns 35 percent, and company C owns 25 percent), provide the legal names and physical addresses of all the highest-level companies with an ownership interest as the United States parent companies and report the percent ownership of each company.

(iv) If the reporter is owned by a joint venture or a cooperative, the joint venture or cooperative is its own United States parent company. Provide the legal name and physical address of the joint venture or cooperative as the United States parent company, and report 100 percent ownership by the joint venture or cooperative.

(v) If the reporter is entirely owned by a foreign company, provide the legal name and physical address of the foreign company's highest-level company based in the United States as the United States parent company, and report 100 percent ownership.

(vi) If the reporter is partially owned by a foreign company and partially owned by one or more United States companies, provide the legal name and physical address of the foreign company's highest-level company based in the United States, along with the legal names and physical addresses of the other United States parent companies, and report the percent ownership of each of these companies.

(vii) If the reporter is a federally owned facility, report "U.S. Government" and do not report physical address or percent ownership.

(k) An indication of whether the facility includes one or more plant sites that have been assigned a "plant code" by either the Department of Energy's Energy Information Administration or by the Environmental Protection Agency's (EPA) Clean Air Markets Division.

(l) Facilities must report electricity information including:

(i) Total annual electricity purchased in megawatt hours (MWh), itemized by the supplying utility or, if not obtained from a utility, from the supplying electric power entity for each different source of electricity. Total annual purchases must be reported separately for each supplying utility or electric power entity.

(ii) Self-generated electricity should be itemized separately if a facility includes an electricity generating unit as follows:

(A) Total facility nameplate generating capacity in megawatts (MW).

(B) Generated electricity in MWh provided or sold to each retail provider, electricity marketer, or other reportable end-user that is not a part of the facility, itemized by end-user.

(C) Generated electricity for on-site industrial applications not related to electricity generation in MWh.

(m) Report fuel use or supplied as follows:

(i) Facilities, report each fuel combusted separately by type, quantity, and units of measurement.

(ii) Fuel suppliers, report:

(A) Each fuel supplied separately by type, quantity, and units of measurement; and

(B) Separately report the quantity of each fuel type by purpose if the fuel supplier reports that the fuel is used for one of the purposes described in WAC 173-441-122 (5)(d)(xi).

(n) Facilities, report total annual facility product data, units of production, and specific product based on their first primary NAICS code.

(i) Facilities with a primary NAICS code listed in Table 050-1 of this section must report total annual facility product data as described in Table 050-1. Facilities may additionally report total annual facility product data as described in Table 050-1 for any reported secondary NAICS code. Use six digit NAICS codes when available, otherwise use the shorter NAICS codes listed below substituting the values in the full reported six digit NAICS code for "X".

Table 050-1: Total Annual Facility Product Data Requirements by Primary NAICS Code.

Primary NAICS Code and Sector Definition	Activity	Production Metric
112112: Cattle Feedlots	Cattle feedlots	Cattle head days
211130: Natural Gas Extraction	Natural gas extraction	Million standard cubic feet of natural gas extracted
212399: All Other Nonmetallic Mineral Mining	Freshwater diatomite filter aids manufacturing	Metric tons of mineral product produced
2211XX: Electric Power Generation, Transmission and Distribution	Electric power generation, transmission and distribution	Net megawatt hours
221210: Natural Gas Distribution	Natural gas distribution	Million standard cubic feet of natural gas distributed
221330: Steam and Air-conditioning Supply	Steam supply	Kilograms steam produced
311213: Malt Manufacturing	Malt manufacturing	Metric tons of malt produced
3114XX: Fruit and Vegetable Preserving and Specialty Food Manufacturing	Fruit and vegetable preserving and specialty food manufacturing	Metric tons of food product produced
3115XX: Dairy Product Manufacturing	Dairy product manufacturing	Metric tons of dairy product produced
311611: Animal (except poultry) Slaughtering	Animal (except poultry) slaughtering	Metric tons of meat product processed
311613: Rendering and Meat By-product Processing	Rendering and meat by-product processing	Metric tons of meat by-product processed
311919: Other Snack Food Manufacturing	Other snack food manufacturing	Metric tons of snack food produced
311920: Coffee and Tea Manufacturing	Coffee and tea manufacturing	Metric tons of coffee and tea produced
321XXX: Wood Product Manufacturing	Wood product manufacturing	Air dried (10 percent moisture) metric tons of wood product produced

Primary NAICS Code and Sector Definition	Activity	Production Metric
3221XX: Pulp, Paper, and Paperboard Mills	Pulp, paper, and paperboard mills	Air dried (10 percent moisture) metric tons of produced: • Pulp product; or • Paper; or • Paperboard
322299: All Other Converted Paper Product Manufacturing	All other converted paper product manufacturing	Air dried (10 percent moisture) metric tons of converted paper product produced
324110: Petroleum Refineries	Petroleum refineries	Report all of the following: • Facility level Subpart MM report as reported under 40 C.F.R. Part 98; and • Barrels of crude oil and intermediate products received from off-site that are processed at the facility((; and • Beginning with the first emissions year after a refinery's first turnaround after 2022, the refinery must also submit complexity weighted barrel (CWB) as described in CARB MRR section 95113(l)(3) as adopted by 7/1/2021. CWB supporting data must also be submitted to Ecology as described in CARB MRR section 95113(l)(3))).
324121: Asphalt Paving Mixture and Block Manufacturing	Asphalt paving mixture and block manufacturing	Metric tons of asphalt paving mixture and block produced
3251XX: Basic Chemical Manufacturing	Basic chemical manufacturing	Metric tons of chemical produced
325311: Nitrogenous Fertilizer Manufacturing	Nitric acid production	Metric tons of nitric acid produced
32721X: Glass and Glass Product Manufacturing	Glass and glass product manufacturing	Metric tons of glass produced
327310: Cement Manufacturing	Cement manufacturing	Metric tons of adjusted clinker and mineral additives produced
327390: Other Concrete Product Manufacturing	Other concrete product manufacturing	Metric tons of concrete product produced
327410: Lime Manufacturing	Lime manufacturing	Metric tons of lime produced
327420: Gypsum Product Manufacturing	Gypsum product manufacturing	Metric tons of gypsum product produced
331110: Iron and Steel Mills and Ferroalloy Manufacturing	Steel production using an electric arc furnace (EAF)	Metric tons of steel produced
33131X: Alumina and Aluminum Production and Processing	Alumina and aluminum production and processing	Metric tons of aluminum produced
331410: Nonferrous Metal (except aluminum) Smelting and Refining	Granular polysilicon production	Metric tons of granular polysilicon produced
332111: Iron and Steel Forging	Iron forging	Metric tons of iron produced
334413: Semiconductor and Related Device Manufacturing	Semiconductor and related device manufacturing	Square meters of mask layer produced
335991: Carbon and Graphite Product Manufacturing	Carbon and graphite product manufacturing	Metric tons of carbon and graphite product produced
3364XX: Aerospace Product and Parts Manufacturing	Aerospace product and parts manufacturing	• Metric tons of aircraft product and parts produced; or • Square meters of external surface area of aircraft
486210: Pipeline Transportation of Natural Gas	Pipeline transportation of natural gas	Million standard cubic feet of natural gas transported

Primary NAICS Code and Sector Definition	Activity	Production Metric
488119: Other Airport Operations	Other airport operations	Passenger kilometers serviced
562111: Solid Waste Collection	Solid waste collection	Metric tons of total solid waste collected
562212: Solid Waste Landfill	Solid waste landfill	Metric tons of total waste entered into landfill
562213: Solid Waste Combustors and Incinerators	Solid waste combustors and incinerators	Net megawatt hours
611310: Colleges, Universities, and Professional Schools	Colleges, universities, and professional schools	Students serviced
928110: National Security	Military bases	Troops stationed

(ii) Facilities without a primary NAICS code listed in Table 050-1 of this section must contact ecology no later than 45 calendar days prior to the emissions report deadline established in subsection (2) of this section and report total annual facility product data as instructed by the department. If ecology does not identify product data for a facility, a facility must use the energy-based calculation method described in Equation 050-1 of this section. Report product data and inputs to the equation. Product data calculated using the energy-based method shall use the following equation:

$$\text{Product data} = S_{consumed} + F_{consumed} - e_{sold} \qquad \text{(Eq. 050-1)}$$

Where:

"$S_{Consumed}$" is the annual amount of steam consumed, measured in MMBtu, at the facility for any process, including heating or cooling applications. This value shall exclude any steam used to produce electricity. This value shall exclude steam produced from an on-site cogeneration unit;

"$F_{Consumed}$" is the annual amount of energy produced due to fuel combustion at the facility, measured in MMBtu. This value shall be calculated based on measured higher heating values or the default higher heating value of the applicable fuel in Table C-1 of 40 C.F.R. Part 98. This value shall include any energy from fuel combusted in an on-site electricity generation or cogeneration unit. This value shall exclude energy to generate the steam accounted for in the "$S_{Consumed}$" term;

"e_{Sold}" is the annual amount of electricity sold or provided for off-site use, measured in MWh and converted to MMBtu using the reporting year U.S. Energy Information Administration conversion factor;

(iii) Facilities with a change in operation that alters either their primary NAICS code, units of production, or product data measurement method must contact ecology no later than 45 calendar days prior to the emissions report deadline established in subsection (2) of this section and report total annual facility product data as instructed by the department. If ecology does not identify product data for a facility, a facility must use the energy-based calculation method described in Equation 050-1 of this section. Report product data and inputs to the equation.

(iv) For a primary NAICS code in Table 050-1 that has multiple production metrics, a facility that wishes to change their reported production metric must contact ecology no later than 45 calendar days prior to the emissions report deadline established in subsection (2) of this section and report total annual facility ((~~production~~)) product data as instructed by the department.

(o) Reporters that cease operation, other than routine maintenance or seasonal shutdowns, for more than 90 calendar days must provide the following information:

(i) The anticipated type of cessation: Closure or curtailment;

(ii) Date cessation began;

(iii) Date cessation ended (if applicable); and

(iv) Reason for cessation and/or resumption of operation.

(p) If there is an increase or decrease of more than five percent in emissions of greenhouse gases in relation to the previous year, the reporter must provide a brief narrative description of what caused the increase or decrease in emissions.

(4) **Emission calculations.** In preparing the GHG report, you must use the calculation methodologies specified in the relevant sections of this chapter. For each source category, you must use the same calculation methodology as previous reports. This includes throughout a reporting period, and between reporting years. An owner or operator intending to change methodologies must provide a written explanation at least 60 calendar days before the report submission due date in subsection (2)(a) of this section of why a change in methodology was required. Ecology has 45 calendar days to approve or reject the change in method. The reporter must continue to use existing methods until the change is approved by ecology.

(5) **Verification.** To verify the completeness and accuracy of reported GHG emissions, ecology may review the certification statements described in subsection (3)(h) of this section and any other credible evidence, in conjunction with a comprehensive review of the GHG reports and periodic audits of selected reporting facilities. Nothing in this section prohibits ecology from using additional information to verify the completeness and accuracy of the reports. Reporters must cooperate with ecology's efforts to verify GHG reports.

(6) **Recordkeeping.** A person that is required to report GHGs under this chapter must keep records as specified in this subsection. Retain all required records for at least 10 years from the date of submission of the annual GHG report for the reporting year in which the record was generated. Upon request by ecology, the person must submit the records required under this section within 15 business days of receipt of the notification, unless a different schedule is agreed to by ecology. Records may be retained off-site if the records are readily available for expeditious inspection and review. For records that are electronically generated or maintained, the equipment or software necessary to read the records must be made available, or, if requested by ecology, electronic records must be converted to paper documents. You must retain the following records, in addition to those records prescribed in each applicable section of this chapter:

(a) A list of all units, operations, processes, and activities for which GHG emissions were calculated.

(b) The data used to calculate the GHG emissions for each unit, operation, process, and activity, categorized by fuel or material type. These data include, but are not limited to, the following information:

(i) The GHG emissions calculations and methods used.

(ii) Analytical results for the development of site-specific emissions factors.

(iii) The results of all required analyses for high heat value, carbon content, and other required fuel or feedstock parameters.

(iv) Any facility operating data or process information used for the GHG emission calculations.

(c) The annual GHG reports.

(d) Missing data computations. For each missing data event, also retain a record of the cause of the event and the corrective actions taken to restore malfunctioning monitoring equipment.

(e) Owners or operators required to report under WAC 173-441-030 must keep a written GHG monitoring plan (monitoring plan, plan).

(i) At a minimum, the GHG monitoring plan must include the following elements:

(A) Identification of positions of responsibility (i.e., job titles) for collection of the emissions and product data.

(B) Explanation of the processes and methods used to collect the necessary data for the GHG calculations and product data.

(C) Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems, flow meters, and other instrumentation used to provide data for the GHGs and product data reported under this chapter.

(D) Facilities must reference to one or more simplified block diagrams that provide a clear visual representation of the relative locations and positions of measurement devices and sampling locations, as applicable, required for calculating ((~~covered~~)) emissions and ((~~covered~~)) product data (e.g., temperature, total pressure, HHV, fuel consumption). The diagram(s) must include fuel sources, combustion units, and production processes, as applicable.

(ii) The GHG monitoring plan may rely on references to existing corporate documents (e.g., standard operating procedures, quality assurance programs under appendix F to 40 C.F.R. Part 60 or appendix B to 40 C.F.R. Part 75, and other documents) provided that the elements required by (e)(i) of this subsection are easily recognizable.

(iii) The owner or operator must revise the GHG monitoring plan as needed to reflect changes in production processes, monitoring instrumentation, and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime.

(iv) Upon request by ecology, the owner or operator must make all information that is collected in conformance with the GHG monitoring plan available for review during an audit within 15 business days of receipt of the notification, unless a different schedule is agreed to by ecology. Electronic storage of the information in the plan is permissible, provided that the information can be made available in hard copy upon request during an audit.

(f) The results of all required certification and quality assurance tests of continuous monitoring systems, fuel flow meters, and other instrumentation used to provide data for the GHGs reported under this chapter.

(g) Maintenance records for all continuous monitoring systems, flow meters, and other instrumentation used to provide data for the GHGs reported under this chapter.

(h) Suppliers and electric power entities must retain any other data specified in WAC 173-441-122 and 173-441-124.

(7) **Annual GHG report revisions.**

(a) A person must submit a revised annual GHG report within 45 calendar days of discovering that an annual GHG report that the person previously submitted contains one or more substantive errors. The revised report must correct all substantive errors.

(b) Ecology may notify the person in writing that an annual GHG report previously submitted by the person contains one or more substantive errors. Such notification will identify each such substantive error. The person must, within 45 calendar days of receipt of the notification, either resubmit the report that, for each identified substantive error, corrects the identified substantive error (in accordance with the applicable requirements of this chapter) or provide information demonstrating that the previously submitted report does not contain the identified substantive error or that the identified error is not a substantive error.

(c)(i) A substantive error is an error that impacts the quantity of GHG emissions reported, product data reported, or otherwise prevents the reported data from being validated or verified. Substantive errors are cumulative for the emissions year. Multiple discoveries of substantive errors for the same emissions year contribute to exceeding the total thresholds for that emissions year.

(ii) Substantive errors that impact the quantity of GHG emissions reported:

(A) An annual GHG report is required to be revised and resubmitted to ecology when the sum of MT CO_2e of the substantive errors is over either of these two thresholds:

(I) 5 percent or more of total reported GHG emissions if total reported GHG emissions are less than 10,000 MT CO_2e.

(II) 500 MT CO_2e or more if total reported GHG emissions are greater than or equal to 10,000 MT CO_2e.

(B) Substantive error notification and report submittal timelines:

(I) Ecology must be notified of all substantive errors in an annual GHG report that affect GHG emissions greater than zero MT CO_2e within 45 calendar days of discovery.

(II) An annual GHG report found to have a substantive error requiring correction under (c)(ii) of this subsection, must be revised and submitted to ecology within 45 calendar days of notification of the substantive error discovery.

(C) If a person is required to submit a revised annual GHG report for substantive errors that resulted from over-reporting or under-reporting GHG emissions, then the person is required to submit the revised annual GHG report only if the substantive error is identified within this time range:

(I) Over-reporting of GHG emissions: The two years following the third-party verification deadline in WAC 173-441-085 (6)(a) of the applicable emissions year.

(II) Under-reporting of GHG emissions: The seven years following the third-party verification deadline in WAC 173-441-085 (6)(a) of the applicable emissions year.

(d) Notwithstanding (a) and (b) of this subsection, upon request by a person, ecology may provide reasonable extensions of the 45-day period for submission of the revised report or information under (a) and (b) of this subsection. If ecology receives a request for extension of the 45-day period, by email, at least five business days prior to the expiration of the 45 calendar day period, and ecology does not respond to the request by the end of such period, the extension re-

quest is deemed to be automatically granted for 15 more calendar days. During the automatic 15-day extension, ecology will determine what extension, if any, beyond the automatic extension is reasonable and will provide any such additional extension.

(e) The owner or operator must retain documentation for 10 years to support any revision made to an annual GHG report.

(8) **Calibration and accuracy requirements.** The owner or operator of a facility that is subject to the requirements of this chapter and using flow meters or product data measuring devices to measure liquid and gaseous fuel feed rates, process stream flow rates, or feedstock flow rates to provide data for the GHG emissions calculations or product data must meet the applicable ((~~flow meter~~)) calibration and accuracy requirements of this subsection. The accuracy specifications in this subsection do not apply where either the use of company records (as defined in WAC 173-441-020(3)) or the use of "best available information" is specified in an applicable subsection of this chapter to quantify fuel usage and/or other parameters. Further, the provisions of this subsection do not apply to stationary fuel combustion units that use the methodologies in 40 C.F.R. Part 75 to calculate CO_2 mass emissions. Measurement devices used for financial transactions between two or more independent parties meet the calibration and accuracy requirements of this chapter.

(a) Except as otherwise provided in (d) through (f) of this subsection, flow meters that measure liquid and gaseous fuel feed rates, process stream flow rates, product data measuring devices, or feedstock flow rates and provide data for the GHG emissions calculations or product data, must be calibrated prior to January 1, 2012, for emissions data or January 1, 2023, for product data, using the procedures specified in this subsection when such calibration is specified in a relevant section of this chapter. Each of these flow meters must meet the applicable accuracy specification in (b) or (c) of this subsection. All other measurement devices (e.g., weighing devices) that are required by a relevant subsection of this chapter, and that are used to provide data for the GHG emissions calculations or product data, must also be calibrated prior to January 1, 2012, for emissions data or January 1, 2023, for product data; however, the accuracy specifications in (b) and (c) of this subsection do not apply to these devices. Rather, each of these measurement devices must be calibrated to meet the accuracy requirement specified for the device in the applicable subsection of this chapter, or, in the absence of such accuracy requirement, the device must be calibrated to an accuracy within the appropriate error range for the specific measurement technology, based on an applicable operating standard including, but not limited to, manufacturer's specifications and industry standards. The procedures and methods used to quality-assure the data from each measurement device must be documented in the written monitoring plan, pursuant to subsection (6)(e)(i)(C) of this section.

(i) All flow meters and other measurement devices that are subject to the provisions of this subsection must be calibrated according to one of the following: You may use the manufacturer's recommended procedures; an appropriate industry consensus standard method; or a method specified in a relevant section of this chapter. The calibration method(s) used must be documented in the monitoring plan required under subsection (6)(e) of this section.

(ii) For reporters that become subject to this chapter after January 1, 2012, all flow meters and other measurement devices (if any)

that are required by the relevant subsection(s) of this chapter to provide data for the GHG emissions calculations or product data must be installed no later than the date on which data collection is required to begin using the measurement device, and the initial calibration(s) required by this subsection (if any) must be performed no later than that date.

(iii) Except as otherwise provided in (d) through (f) of this subsection, subsequent recalibrations of the flow meters and other measurement devices subject to the requirements of this subsection must be performed at one of the following frequencies:

(A) You may use the frequency specified in each applicable subsection of this chapter.

(B) You may use the frequency recommended by the manufacturer or by an industry consensus standard practice, if no recalibration frequency is specified in an applicable subsection.

(b) Perform all flow meter calibration at measurement points that are representative of the normal operating range of the meter. Except for the orifice, nozzle, and venturi flow meters described in (c) of this subsection, calculate the calibration error at each measurement point using Equation A–2 of this subsection. The terms "R" and "A" in Equation A–2 must be expressed in consistent units of measure (e.g., gallons/minute, ft^3/min). The calibration error at each measurement point must not exceed 5.0 percent of the reference value.

$$CE = \frac{|R-A|}{R} \times 100 \qquad \textit{(Eq. A – 2)}$$

Where:

CE = Calibration error (%)

R = Reference value

A = Flow meter response to the reference value

(c) For orifice, nozzle, and venturi flow meters, the initial quality assurance consists of in situ calibration of the differential pressure (delta-P), total pressure, and temperature transmitters.

(i) Calibrate each transmitter at a zero point and at least one upscale point. Fixed reference points, such as the freezing point of water, may be used for temperature transmitter calibrations. Calculate the calibration error of each transmitter at each measurement point, using Equation A–3 of this subsection. The terms "R," "A," and "FS" in Equation A–3 of this subsection must be in consistent units of measure (e.g., milliamperes, inches of water, psi, degrees). For each transmitter, the CE value at each measurement point must not exceed 2.0 percent of full-scale. Alternatively, the results are acceptable if the sum of the calculated CE values for the three transmitters at each calibration level (i.e., at the zero level and at each upscale level) does not exceed 6.0 percent.

$$CE = \frac{|R-A|}{FS} \times 100 \qquad \textit{(Eq. A – 3)}$$

Where:

CE = Calibration error (%)

R = Reference value

A = Transmitter response to the reference value

FS = Full-scale value of the transmitter

(ii) In cases where there are only two transmitters (i.e., differential pressure and either temperature or total pressure) in the immediate vicinity of the flow meter's primary element (e.g., the orifice plate), or when there is only a differential pressure transmitter in close proximity to the primary element, calibration of these existing transmitters to a CE of 2.0 percent or less at each measurement point is still required, in accordance with (c)(i) of this subsection; alternatively, when two transmitters are calibrated, the results are acceptable if the sum of the CE values for the two transmitters at each calibration level does not exceed 4.0 percent. However, note that installation and calibration of an additional transmitter (or transmitters) at the flow monitor location to measure temperature or total pressure or both is not required in these cases. Instead, you may use assumed values for temperature and/or total pressure, based on measurements of these parameters at a remote location (or locations), provided that the following conditions are met:

(A) You must demonstrate that measurements at the remote location(s) can, when appropriate correction factors are applied, reliably and accurately represent the actual temperature or total pressure at the flow meter under all expected ambient conditions.

(B) You must make all temperature and/or total pressure measurements in the demonstration described in (c)(ii)(A) of this subsection with calibrated gauges, sensors, transmitters, or other appropriate measurement devices. At a minimum, calibrate each of these devices to an accuracy within the appropriate error range for the specific measurement technology, according to one of the following: You may calibrate using a manufacturer's specification or an industry consensus standard.

(C) You must document the methods used for the demonstration described in (c)(ii)(A) of this subsection in the written GHG monitoring plan under subsection (6)(e)(i)(C) of this section. You must also include the data from the demonstration, the mathematical correlation(s) between the remote readings and actual flow meter conditions derived from the data, and any supporting engineering calculations in the GHG monitoring plan. You must maintain all of this information in a format suitable for auditing and inspection.

(D) You must use the mathematical correlation(s) derived from the demonstration described in (c)(ii)(A) of this subsection to convert the remote temperature or the total pressure readings, or both, to the actual temperature or total pressure at the flow meter, or both, on a daily basis. You must then use the actual temperature and total pressure values to correct the measured flow rates to standard conditions.

(E) You must periodically check the correlation(s) between the remote and actual readings (at least once a year), and make any necessary adjustments to the mathematical relationship(s).

(d) Fuel billing meters are exempted from the calibration requirements of this section and from the GHG monitoring plan and recordkeeping provisions of subsection (6)(e)(i)(C) and (g) of this section, provided that the fuel supplier and any unit combusting the fuel do not have any common owners and are not owned by subsidiaries or affiliates of the same company. Meters used exclusively to measure the flow rates of fuels that are used for unit startup are also exempted from the calibration requirements of this section.

(e) For a flow meter that has been previously calibrated in accordance with (a) of this subsection, an additional calibration is not required by the date specified in (a) of this subsection if, as of that date, the previous calibration is still active (i.e., the device is not yet due for recalibration because the time interval between successive calibrations has not elapsed). In this case, the deadline for the successive calibrations of the flow meter must be set according to one of the following: You may use either the manufacturer's recommended calibration schedule or you may use the industry consensus calibration schedule.

(f) For units and processes that operate continuously with infrequent outages, it may not be possible to meet the deadline established in (a) of this subsection for the initial calibration of a flow meter or other measurement device without disrupting normal process operation. In such cases, the owner or operator may postpone the initial calibration until the next scheduled maintenance outage. The best available information from company records may be used in the interim. The subsequent required recalibrations of the flow meters may be similarly postponed. Such postponements must be documented in the monitoring plan that is required under subsection (6)(e) of this section.

(g) If the results of an initial calibration or a recalibration fail to meet the required accuracy specification, data from the flow meter must be considered invalid, beginning with the hour of the failed calibration and continuing until a successful calibration is completed. You must follow the missing data provisions provided in the relevant missing data sections during the period of data invalidation.

(h) Missing data substitution procedures. Persons must comply with 40 C.F.R. Part 98 when substituting for missing data, except as otherwise provided below. Substitute ((~~missing~~)) data used for product data or other data required under this section that is not ((~~included~~)) covered in ((~~your~~)) 40 C.F.R. Part 98 ((~~report by using the best available estimate of the parameter, based on all available data~~)) must follow the requirements below.

(i) If the data capture rate is at least 90 percent for the data year, the facility must substitute for each missing value using the best available estimate of the parameter, based on all available process data.

(ii) If the data capture rate is at least 80 percent but less than 90 percent for the data year, the facility must substitute for each missing value with the highest quality assured value recorded for the parameter during the given data year, as well as the two previous data years.

(iii) If the data capture rate is less than 80 percent for the data year, the facility must substitute for each missing value with the highest quality assured value recorded for the parameter in all records kept according to WAC 173-441-050.

(iv) The facility must document and retain records of the procedure used for all missing data estimates pursuant to the recordkeeping requirements of WAC 173-441-050.

(9) **Measurement device installation.** 40 C.F.R. § 98.3(j) and 40 C.F.R. § 98.3(d) are adopted by reference as modified in WAC 173-441-120(2).

AMENDATORY SECTION (Amending WSR 22-05-050, filed 2/9/22, effective 3/12/22)

WAC 173-441-085 Third-party verification. Beginning with the 2023 emissions year reported in 2024, a person that emits 25,000 metric tons CO_2e or more per calendar year in total GHG emissions as calculated using the methods in WAC 173-441-030 or has a mandatory or voluntary compliance obligation under chapter 70A.65 RCW, as described in chapter 173-446 WAC must have the reporter's annual GHG reports verified by a third party as specified in this section. Third-party verification requirements are in addition to other verification and report correction requirements in this chapter.

(1) **Annual GHG reports must be third-party verified each emissions year that:**

(a) The reporter ((~~emits~~)) reports 25,000 metric tons CO_2e or more per calendar year in total GHG emissions as calculated using the methods in WAC 173-441-030;

(b) The reporter has a mandatory or voluntary compliance obligation under chapter 70A.65 RCW, as described in chapter 173-446 WAC;

(c) Is part of a baseline calculation or otherwise covered under chapter 70A.65 RCW, as described in chapter 173-446 WAC; or

(d) For the first year after no longer meeting the requirements of (a) through (c) of this subsection unless the operations of the reporter are changed such that all applicable GHG emitting processes and operations listed in WAC 173-441-120, 173-441-122, and 173-441-124 permanently cease to operate.

(2) **Information subject to third-party verification.** All GHG emissions and other information reported under this chapter are subject to the requirements of this section. Emissions factors published by ecology based on data previously reported under this chapter that received a positive verification statement would not need to be reverified; however, any calculations based on that information are subject to the requirements of this section.

(3) **Verification standards.** The third-party ((~~verifier~~)) verification body must certify that annual GHG reports meet the following conditions:

(a) Annual GHG reports must be consistent with the relevant requirements and methods in this chapter.

(b) The absolute value of any discrepancy, omission, or misreporting, or aggregation of the three, must be less than five percent of total reported emissions (metric tons of CO_2e) or the verification will result in a material misstatement and an adverse verification statement. This standard also separately applies to any product data in the annual GHG report.

(i) "Discrepancies" means any differences between the reported emissions or product data and the third-party ((~~verifier's~~)) verification body's review of emissions or product data for a data source or product data subject to this chapter.

(ii) ((~~"Omissions" means any emissions or product data the third-party verifier concludes must be part of the annual GHG report, but were not included by the reporting entity in the annual GHG report~~)) "Lead verifier" means a party that has met all the requirements in subsection (7) of this section and who may act as the lead verifier of a verification team providing verification services or as a lead veri-

fier providing an independent review of verification services rendered.

(iii) "Lead verifier independent reviewer" or "independent reviewer" means a lead verifier within a verification body who has not participated in conducting verification services for a project developer or authorized project designee for the current project data report and who provides an independent review of verification services rendered for a project developer or authorized project designee. The independent reviewer is not required to also meet the requirements for a sector specific or project specific verifier.

(iv) "Misreporting" means duplicate, incomplete or other emissions the third-party ((~~verifier~~)) verification body concludes should, or should not, be part of the annual GHG report or duplicate or other product data the ((~~verifier~~)) verification body concludes should not be part of the annual GHG report.

((~~(iv)~~)) (v) For the purposes of this section, "omissions" means any emissions or product data the third-party verification body concludes must be part of the annual GHG report but were not included by the reporting entity in the annual GHG report.

(vi) "Total reported emissions or product data" means the total annual reporter's emissions or total annual reporter's product data for which the third-party ((~~verifier~~)) verification body is conducting an assessment.

(4) **Verification services.**

(a) Full verification is required at least once every three reporting years for reporters subject to third-party verification under subsection (1)(b) through (d) of this section. The first year of third-party verification for a reporter subject to third-party verification under subsection (1)(b) through (d) of this section must be full verification. A person required to conduct third-party verification under subsection (1)(b) through (d) of this section may choose to obtain less intensive verification services for the remaining two years in the three-year period as long as:

(i) No year in the three-year period has an adverse verification statement;

(ii) The third-party ((~~verifier~~)) verification body can provide findings with a ((~~reasonable~~)) high level of ((~~assurance~~)) confidence;

(iii) There has not been a change in the third-party ((~~verifier~~)) verification body;

(iv) There has not been a change in operational control of the reporter; and

(v) There has not been a significant change in sources or emissions. A difference in emissions of greater than 25 percent relative to the preceding year's emissions is considered significant unless that change can be directly shown to result from a verifiable change in product data.

(b) *Full verification.* A full verification report must be in a format specified by ecology and contain:

(i) Documentation identifying the reporter reporting emissions and the scope of emissions verified in the report.

(ii) Documentation identifying the third-party ((~~verifier~~)) verification body, including all relevant information about the third-party ((~~verifier~~)) verification body in subsection (7)(a) of this section and the names, roles, and sector specific qualifications (if any) of all individuals working on the verification report.

(iii) Documentation demonstrating and certifying that the requirements of subsection (7)(b) and (c) of this section have been met.

(iv) A verification plan that details the data and methodologies used to verify the annual GHG report and schedule describing when the verification services occurred. ((~~This must include~~)) The verification plan shall be based on the requirements of subsection (4)(d) of this section.

(v) A sampling plan that describes how the third-party ((~~verifier~~)) verification body prioritized which emissions to verify, and a summary of the data checks used to determine the reliability of the annual GHG report. In addition, the sampling plan shall meet the requirements of subsection (4)(e) of this section. Full verification requires a more complete sampling of data and additional data checks than less intensive verification. ((~~At a minimum,~~))

(vi) Data checks for a full verification must include the following:

(A) Tracing data in the emissions data report to its origin;

(B) Reviewing the process for data compilation and collection;

(C) Recalculating emission estimates to check original calculations;

(D) Reviewing calculation methodologies used by the reporter for conformance with this chapter; ((~~and~~))

(E) Reviewing meter and fuel analytical instrumentation measurement accuracy and calibration for consistency with the requirements of this chapter; and

(F) The requirements of subsection (4)(f) of this section.

((~~(v)~~)) (vii) Documentation of the third-party ((~~verifier's~~)) verification body's review of reporter operations to identify applicable GHG emissions sources and product data. Any applicable GHG emissions sources or product data not included in the annual GHG report must be identified. The third-party ((~~verifier~~)) verification body must also ensure that the reported current NAICS code(s) accurately represents the activities on-site.

((~~(vi)~~)) (viii) Documentation of any corrections made to the annual GHG report.

((~~(vii)~~)) (ix) Documentation supporting the third-party ((~~verifiers'~~)) verification body's findings evaluating if the annual GHG report is compliant with the requirements in subsection (3) of this section. This must include a log of any issues (if any) identified in the course of verification, their potential impact on the quality of the annual GHG report, and their resolution.

((~~(viii)~~)) (x) The individuals conducting the third-party verification must certify that the verification report is true, accurate, and complete to the best of their knowledge and belief.

((~~(ix)~~)) (xi) Information about the required on-site visit, including date(s) and a description of the verification services conducted on-site. At least one accredited verifier in the verification team, including the sector specific verifier, if applicable, must at a minimum make one site visit, during each year full verification is required. The third-party verifier must visit the headquarters or other location of central data management when the reporter is a supplier or electric power entity. During the site visit, the third-party ((~~verifier~~)) verification body must:

(A) Confirm that all applicable emissions are included in the annual GHG report.

(B) Check that all sources specified in the annual GHG report are identified appropriately.

(C) Review and understand the data management systems used by the owners or operators to track, quantify, and report GHG emissions and,

when applicable, product data and fuel transactions. The third-party ((~~verifier~~)) verification body must evaluate the uncertainty and effectiveness of these systems.

(D) Interview key personnel.

(E) Make direct observations of equipment for data sources and equipment supplying data for sources determined to be high risk.

(F) Assess conformance with measurement accuracy, data capture, and missing data substitution requirements.

(G) Review financial transactions to confirm fuel, feedstock, and product data, and confirming the complete and accurate reporting of required data such as reporter fuel suppliers, fuel quantities delivered, and if fuel was received directly from an interstate pipeline.

(c) *Less intensive verification*. A less intensive verification report must be in a format specified by ecology and meet the requirements of subsection (4)(b)(i) through ((~~(viii)~~)) (x) of this section. Less intensive verification of an annual GHG report allows for less detailed data checks and document reviews of the annual GHG report based on the analysis and risk assessment in the most current sampling plan developed as part of the most current full verification. Persons subject to third-party verification under subsection (1)(a) through (d) of this section must, at a minimum, conduct less intensive verification for any year full verification is not conducted.

(d) *Verification plan*. A verification plan based on the following:

(i) Information from the reporting entity. Such information shall include:

(A) Information to allow the verification body to develop a general understanding of facility or entity boundaries, operations, emissions sources, product data, and electricity or fuel transactions as applicable.

(B) Information regarding the training or qualifications of personnel involved in developing the emissions data report.

(C) Description of the specific methodologies used to quantify and report greenhouse gas emissions, product data, electricity and fuel transactions, and associated data as needed to develop the verification plan.

(D) Information about the data management system used to track greenhouse gas emissions, product data, electricity and fuel transactions, and associated data as needed to develop the verification plan.

(E) Previous verification reports.

(ii) Timing of verification services. Such information shall include:

(A) Dates of proposed meetings and interviews with reporting facility personnel;

(B) Dates of proposed site visits;

(C) Types of proposed document and data reviews;

(D) Expected date for completing verification services.

(e) *Sampling plan*. A sampling plan that meets the following requirements:

(i) The sampling plan shall be developed based on a strategic analysis developed from document reviews and interviews to assess the likely nature, scale, and complexity of the verification services for a reporting entity. The analysis shall review the inputs for the development of the submitted emissions data report, the rigor and appropriateness of data management systems, and the coordination within the reporting entity's organization to manage the operation and maintenance of equipment and systems used to develop emissions data reports.

(ii) The sampling plan shall include a ranking of emissions sources by amount of contribution to total CO_2 equivalent emissions for the reporting entity, and a ranking of emissions sources with the largest calculation uncertainty. As applicable and deemed appropriate by the verification body, fuel and electricity transactions shall also be ranked or evaluated relative to the amount of fuel or power exchanged and uncertainties that may apply to data provided by the reporting entity including risk of incomplete reporting.

(iii) The sampling plan shall include a qualitative narrative of uncertainty risk assessment in the following areas as applicable under WAC 173-441-120 through 173-441-124:

(A) Data acquisition equipment;

(B) Data sampling and frequency;

(C) Data processing and tracking;

(D) Emissions calculations;

(E) Product data;

(F) Data reporting;

(G) Management policies or practices in developing emissions data reports.

(iv) After completing the analyses required by (e)(i) through (iii) of this subsection, the verification body shall include in the sampling plan a list which includes the following:

(A) Emissions sources, product data, and/or transactions that will be targeted for document reviews, and data checks as specified in (f) of this subsection, and an explanation of why they were chosen.

(B) Methods used to conduct data checks for each source, product data, or transaction.

(C) A summary of the information analyzed in the data checks and document reviews conducted for each emissions source, product data, or transaction targeted.

The sampling plan list must be updated and finalized prior to the completion of verification services. The final sampling plan must describe in detail how the identified risks were addressed during the verification.

(v) The verification body shall revise the sampling plan to describe tasks completed by the verification body as information becomes available, including discovery of any errors, material misstatements, or nonconformance with the requirements of this section.

(vi) The verification body shall retain the sampling plan in paper, electronic, or other format for a period of not less than 10 years following the submission of each verification statement. The sampling plan shall be made available to ecology upon request.

(vii) The verification body shall retain all material received, reviewed, or generated to render a verification statement for a reporting entity for no less than 10 years. The documentation must allow for a transparent review of how a verification body reached its conclusion in the verification statement.

(f) *Data checks*. To determine the reliability of the submitted emissions data report, the verification body shall use data checks. Such data checks shall focus on the largest and most uncertain estimates of emissions, product data, and fuel and electricity transactions, and shall include the following:

(i) Data checks to ensure that the appropriate methodologies and emission factors have been applied for the emissions sources, fuel and electricity transactions covered under WAC 173-441-120 through 173-441-124.

(ii) The verification body shall use data checks to ensure the accuracy of product data reported under WAC 173-441-050.

(iii) The verification body shall choose data checks for emissions sources, product data, and fuel and electricity transactions data, as applicable, based on their relative contributions to emissions and the associated risks of contributing to material misstatement or nonconformance, as indicated in the sampling plan.

(iv) The verification body is responsible for ensuring via data checks that there is a high level of confidence that the emissions data report conforms to the requirements in chapter 173-441 WAC. In addition, and as applicable, the verifier's review of conformance must confirm the following information is correctly reported:

(A) For facilities that combust fuels produced onsite, fuel name and quantity combusted.

(B) For facilities, electricity purchases and generation pursuant to WAC 173-441-050 (3)(l).

(v) The verification body shall compare its own calculated results with the reported data in order to confirm the extent and impact of any omissions and errors. Any discrepancies must be investigated. The comparison of data checks must also include a narrative to indicate which sources, product data, and transactions were checked, the types and quantity of data that were evaluated for each source, product data, and transaction, the percentage of reported emissions covered by the data checks, the percentage of product data covered by the data checks, and any separate discrepancies that were identified in emission data or product data.

(vi) If a source selected for a data check was affected by a loss of data used to calculate GHG emissions for the data year:

(A) The verification body shall confirm that the reported emissions for that source were calculated using the applicable missing data procedures, or that an approved interim data collection procedure was used for the source.

(B) If 20 percent or less of any single data elements used to calculate emissions are missing, and emissions are correctly calculated using the missing data requirements in WAC 173-441-120 through 173-441-124, these emissions will be considered accurate and as meeting the reporting requirements for that source.

(C) If greater than 20 percent of any single data element used to calculate emissions are missing, or if any combination of data elements are missing that would result in more than five percent of total reported emissions being calculated using missing data requirements in WAC 173-441-120 through 173-441-124, the verifier must include a finding of nonconformance with the required emissions calculation methodology as part of the verification statement.

(D) The verifier must note the date, time, and source of any missing data substitutions discovered during the course of verification in the verification report.

(5) **Annual GHG report corrections.** Owners or operators subject to this section must correct errors in their annual GHG report.

(a) Corrections are required if errors are identified by:

(i) The third-party ((~~verifier~~)) verification body;

(ii) The owner or operator;

(iii) Ecology; or

(iv) EPA.

(b) The owner or operator must fix all correctable errors that affect emissions or product data in the submitted emissions data re-

port, and submit a revised emissions data report to ecology. Failure to do so will result in an adverse verification statement.

(c) Failure to fix correctable errors that do not affect emissions or product data represents a nonconformance with this chapter but does not, absent other errors, result in an adverse verification statement.

(d) Any corrections to the annual GHG report identified during the verification process must be submitted to ecology no later than 45 calendar days after discovery of the error or the verification report deadline in subsection (6)(a) of this section, whichever is sooner. Any corrections to the annual GHG report or verification report discovered after the verification report deadline in subsection (6)(a) of this section must be submitted to ecology no later than 45 calendar days after discovery of the error.

(e) The owner or operator must maintain documentation to support any revisions made to the initial emissions data report. Documentation for all emissions data report submittals must be retained by the reporting entity for 10 years.

(6) **Report.**

(a) The third-party ((~~verifier~~)) verification body must submit a complete verification report to ecology for each year as required under subsection (1) of this section no later than August 10th for GHG emissions occurring in the previous calendar year. If August 10th falls on a weekend or a state holiday, the report submission date shall be extended to the next business day.

(b) The third-party ((~~verifier~~)) verification body must include a certification of one of the following verification statements based on the verification standards in subsection (3) of this section.

(i) A positive verification statement may be issued by a third-party ((~~verifier~~)) verification body if the third-party ((~~verifier~~)) verification body can say with high confidence that the submitted GHG data report is free of material misstatement and that the GHG data report conforms to the requirements of this chapter.

(ii) A qualified positive verification statement must be issued by a third-party ((~~verifier~~)) verification body if the third-party ((~~verifier~~)) verification body can say with high confidence that the submitted GHG data report is free of material misstatement and contains no errors that affect emissions or product data, but the GHG data report may include one or more other nonconformance(s) with the requirements of this chapter which do not result in a material misstatement.

(iii) An adverse verification statement must be issued by a third-party ((~~verifier~~)) verification body if the third-party ((~~verifier~~)) verification body cannot say with high confidence that the submitted GHG data report is free of material misstatement, or that the emissions or product data submitted in the GHG data report is free of errors that affect emissions or product data and thus is not in conformance with the requirements to fix such errors.

(c) Records must be retained following the requirements of WAC 173-441-050(6).

(7) **Eligible third-party ((~~verifiers~~)) verification bodies.**

(a) Owners or operators subject to this section must have their annual GHG report verified by a third-party ((~~verifier~~)) verification body certified by ecology. Certification requires:

(i) Registering as a third-party ((~~verifier~~)) verification body with ecology. Registration is required for both the verification or-

ganization and all individuals performing verification services for the verification organization.

(ii) Demonstrating to ecology's satisfaction that the third-party ((~~verifier~~)) verification body has sufficient knowledge of the relevant methods and protocols in this chapter. Certification may be limited to certain types or sources of emissions.

(iii) Active accreditation or recognition as a third-party ((~~verifier~~)) verification body under California ARB's Mandatory Reporting of Greenhouse Gas Emissions program.

(iv) Ecology may modify, suspend, or revoke certification of a third-party ((~~verifier~~)) verification body based on the accuracy of their signed verification statements, conformance with conflict of interest provisions, or other requirements of this section. For the same reasons, ecology may also modify, suspend, or revoke certification for individual officers or employees of a third-party verification body.

(b) An owner or operator must not use the same third-party ((~~verifier~~)) verification body (either organization or individuals) for a period of more than six consecutive years. The owner or operator must wait at least three years before using the previous third-party ((~~verifier~~)) verification body to verify their annual GHG reports.

(c) An owner or operator and third-party ((~~verifier~~)) verification body must certify that there is not a conflict of interest in verifying the annual GHG report. The potential for a conflict of interest must be deemed to be high where:

(i) The third-party ((~~verifier~~)) verification body and reporter share any management staff or board of directors membership, or any of the senior management staff of the reporter have been employed by the third-party ((~~verifier~~)) verification body, or vice versa, within the previous five years; or

(ii) Any employee of the third-party ((~~verifier~~)) verification body, or any employee of a related entity, or a subcontractor who is a member of the verification team has provided to the reporter any services within the previous five years, unless the service was part of GHG verification for another jurisdiction. Any years of previous service in the other jurisdiction count towards the limit in (b) of this subsection.

(iii) Any staff member of the third-party ((~~verifier~~)) verification body provides any type of incentive to a reporter to secure a verification services contract.

(8) **Ecology verification.** Ecology retains full authority in determining if an annual GHG report contains a discrepancy, omission, or misreporting, or any aggregation of the three, that impacts the verification status of the annual GHG report. Ecology may issue an adverse verification statement for an annual GHG report even if the annual GHG report has received a positive verification statement from the third-party ((~~verifier~~)) verification body. Ecology may also issue an adverse verification statement for:

(a) Failure to submit a complete annual GHG report in a timely manner;

(b) Failure to complete third-party verification if required by this subsection; or

(c) Other forms of noncompliance with this chapter.

AMENDATORY SECTION (Amending WSR 22-05-050, filed 2/9/22, effective 3/12/22)

WAC 173-441-086 Assigned emissions level. (1) Ecology may assign an emissions level to any annual GHG report that:

(a) Failed to submit a complete annual GHG report by the report submission due date, specified in WAC 173-441-050(2);

(b) Failed to meet the third-party verification requirements in WAC 173-441-085;

(c) Has an adverse verification statement; or

(d) Ecology determines a discrepancy, omission, or misreporting, as described in WAC 173-441-085 (3)(b)(i) through (iv), results in a substantive error as defined in WAC 173-441-050 (7)(c). This standard also separately applies to any product data in the annual GHG report.

(2) The assigned emissions level must be used when determining compliance with chapter 70A.65 RCW, as described in chapter 173-446 WAC.

(3) Ecology must use conservative assumptions when setting the assigned emissions level to avoid underestimating emissions in a compliance year or overestimating emissions in a baseline year.

(a) Within five working days of a written request by ecology, the third-party ((~~verifier~~)) verification body (if applicable) must provide any available verification services information or correspondence related to the emissions data.

(b) Within five working days of a written request by ecology, the owner or operator of a reporter must provide the data that is required to calculate GHG emissions for the reporter according to the requirements of this chapter, the preliminary or final detailed verification report prepared by the third-party ((~~verifier~~)) verification body (if applicable), and other information requested by ecology, including the operating days and hours of the reporter during the data year. The owner or operator must also make available personnel who can assist ecology's determination of an assigned emissions level for the data year.

(4) Ecology may adjust the assigned emissions level if the owner or operator is able to obtain a positive verification statement for the annual GHG report at a later date.

AMENDATORY SECTION (Amending WSR 22-05-050, filed 2/9/22, effective 3/12/22)

WAC 173-441-120 Calculation methods for facilities. This section establishes the scope of reportable GHG emissions under this chapter and GHG emissions calculation methods for facilities. Owners and operators of facilities must follow the requirements of this section to determine if they are required to report under WAC 173-441-030(1). Owners and operators of facilities that are subject to this chapter must follow the requirements of this section and all subparts of 40 C.F.R. Part 98 listed in Table 120-1 of this section when calculating emissions. If a conflict exists between a provision in WAC 173-441-010 through 173-441-110 and 173-441-140 through 173-441-170 and any applicable provision of this section, the requirements of those sections must take precedence.

(1) **Source categories and calculation methods for facilities.** An owner or operator of a facility subject to the requirements of this chapter must report GHG emissions, including GHG emissions from biomass, from all applicable source categories in Washington state listed in Table 120-1 of this section using the methods incorporated by reference in Table 120-1. Table 120-1 and subsection (2) of this section list modifications and exceptions to calculation methods adopted by reference in this section.

Table 120-1:
Source Categories and Calculation Methods
Incorporated by Reference from 40 C.F.R. Part 98 for Facilities

Source Category	40 C.F.R. Part 98 Subpart*	Exceptions to Calculation Method or Applicability Criteria+#
General Stationary Fuel Combustion Sources	C	
Electricity Generation	D	
Adipic Acid Production	E	
Aluminum Production	F	
Ammonia Manufacturing	G	
Cement Production	H	
Electronics Manufacturing	I	In § 98.91(a), replace "You must report GHG emissions under this subpart if electronics manufacturing production processes, as defined in § 98.90, are performed at your facility and your facility meets the requirements of either § 98.2(a)(1) or (a)(2). To calculate total annual GHG emissions for comparison to the 25,000 metric ton CO_2e per year emission threshold in paragraph § 98.2 (a)(2), follow the requirements of § 98.2(b), with one exception" with "You must report GHG emissions under this subpart if electronics manufacturing production processes, as defined in § 98.90, are performed at your facility and your facility meets the requirements of WAC 173-441-030(1). To calculate GHG emissions for comparison to the emission threshold in WAC 173-441-030(1), follow the requirements of WAC 173-441-030 (1)(b) and include abatement reductions for systems meeting the requirements of 40 C.F.R. 98.94(f), with one exception."
Ferroalloy Production	K	
Fluorinated Gas Production	L	In § 98.121, replace "To calculate GHG emissions for comparison to the 25,000 metric ton CO_2e per year emission threshold in § 98.2 (a)(2)" with "To calculate GHG emissions for comparison to the emission threshold in WAC 173-441-030(1)."
Glass Production	N	
HCFC-22 Production and HFC-23 Destruction	O	
Hydrogen Production	P	This source category is defined consistent with 40 C.F.R. § 98.160(b) and (c). The source category is further defined as a hydrogen production source that produces molecular hydrogen whether sold to other entities or consumed on-site. § 98.161 should read: "You must report GHG emissions under this subpart if your facility contains a hydrogen production process and the facility meets the requirements of WAC 173-441-030(1).
Iron and Steel Production	Q	
Lead Production	R	
Lime Manufacturing	S	

Source Category	40 C.F.R. Part 98 Subpart*	Exceptions to Calculation Method or Applicability Criteria[+#]
Magnesium Production	T	
Miscellaneous Uses of Carbonate	U	§ 98.211 should read: "You must report GHG emissions from miscellaneous uses of carbonate if your facility uses carbonates as defined in § 98.210 of this subpart and the facility meets the requirements of WAC 173-441-030(1).
Nitric Acid Production	V	
Petroleum and Natural Gas Systems	W	§ 98.231(a) should read: "You must report GHG emissions under this subpart if your facility contains petroleum and natural gas systems and the facility meets the requirements of WAC 173-441-030(1)."
Petrochemical Production	X	
Petroleum Refineries	Y	For periods of normal flare operation, the operator must use Equation Y-1a, Y-1b, or Y-2 as specified in 40 C.F.R. § 98.253(b)(ii)(A) or 98.253(b)(ii)(B). For periods of startup, shutdown, and malfunction (SSM) during which the operator was unable to measure the parameters required by Equations Y-1a, Y-1b, or Y-2, the operator must determine the quantity of gas discharged to the flare separately for each SSM, and calculate the CO_2 emissions as specified in the equation shown below. For SSM periods the operator must use engineering calculations and process knowledge to estimate the carbon content of flared gas as required by § 98.253(b)(iii)(A). The terms of the equation below are defined as they are for Equation Y-3 in 40 C.F.R. § 98.253(b)(iii)(C). $$CO_2 = 0.98 \times 0.001 \times \left(\sum_{p=1}^{n} \left[44/12 \times (Flare_{SSM})_p \right] \times MW_p / MVC \times CC_p \right)$$
Phosphoric Acid Production	Z	
Pulp and Paper Manufacturing	AA	
Silicon Carbide Production	BB	
Soda Ash Manufacturing	CC	
Electrical Transmission and Distribution Equipment Use	DD	§ 98.301 should read: "You must report GHG emissions under this subpart if your facility contains any electrical transmission and distribution equipment use process and the facility meets the requirements of WAC 173-441-030(1)." See subsection (2)(f) of this section.
Titanium Dioxide Production	EE	
Underground Coal Mines	FF	
Zinc Production	GG	
Municipal Solid Waste Landfills	HH	CO_2 from combustion of landfill gas must also be included in calculating emissions for reporting and determining if the reporting threshold is met. § 98.346 (i)(13) should read: "Methane emissions for the landfill (i.e., the subpart HH total methane emissions). If the quantity of recovered CH_4 from Equation HH-4 of this subpart is used as the value of G_{CH4} in Equation HH-6, use the methane emissions calculated using Equation HH-8 as the methane emissions for the landfill." Otherwise use the higher methane emissions value from Equation HH-6 or Equation HH-8 of this subpart unless otherwise instructed by ecology.
Industrial Wastewater Treatment	II	CO_2 from combustion of wastewater biogas must also be included in calculating emissions for reporting and determining if the reporting threshold is met.

Source Category	40 C.F.R. Part 98 Subpart*	Exceptions to Calculation Method or Applicability Criteria+#
Geologic Sequestration of Carbon Dioxide	RR	§ 98.441(a) should read: "You must report GHG emissions under this subpart if any well or group of wells within your facility injects any amount of CO_2 for long-term containment in subsurface geologic formations and the facility meets the requirements of WAC 173-441-030(1)."
Electrical Equipment Manufacture or Refurbishment	SS	§ 98.451 should read: "You must report GHG emissions under this subpart if your facility contains an electrical equipment manufacturing or refurbishing process and the facility meets the requirements of WAC 173-441-030(1)."
Industrial Waste Landfills	TT	CO_2 from combustion of landfill gas must also be included in calculating emissions for reporting and determining if the reporting threshold is met. DOC and k values used in 40 C.F.R. 98.463 must be consistent for all years of generation reported in the same reporting year.
Injection of Carbon Dioxide	UU	§ 98.471 should read: "(a) You must report GHG emissions under this subpart if your facility contains an injection of carbon dioxide process and the facility meets the requirements of WAC 173-441-030(1). For purposes of this subpart, any reference to CO_2 emissions in WAC 173-441-030 means CO_2 received."

* Unless otherwise noted, all calculation methods are from 40 C.F.R. Part 98.
\+ Modifications and exceptions in subsection (2) of this section and WAC 173-441-010 through 173-441-110 and 173-441-140 through 173-441-170 also apply.
\# Whenever the use of verification software is required or voluntarily used, the file generated by the verification software must be submitted with the facility's annual GHG report.

(2) **Modifications and exceptions to calculation methods adopted by reference.** Except as otherwise specifically provided:

(a) Wherever the term "administrator" is used in the rules incorporated by reference in this chapter, the term "director" must be substituted.

(b) Wherever the term "EPA" is used in the rules incorporated by reference in this chapter, the term "ecology" must be substituted.

(c) Wherever the term "United States" is used in the rules incorporated by reference in this chapter, the term "Washington state" must be substituted.

(d) Wherever a calculation method adopted by reference in Table 120-1 of this section or a definition adopted by reference from 40 C.F.R. Part 98.6 refers to another subpart or paragraph of 40 C.F.R. Part 98:

(i) If Table 120-2 of this section lists the reference, then replace the reference with the corresponding reference to this chapter as specified in Table 120-2.

(ii) If the reference is to a subpart or subsection of a reference listed in Table 120-2 of this section, then replace the reference with the appropriate subsection of the corresponding reference to this chapter as specified in Table 120-2.

(iii) If the reference is to a subpart or paragraph of 40 C.F.R. Part 98 Subparts C through UU incorporated by reference in Table 120-1, then use the existing reference except as modified by this chapter.

(e) Use the following method to obtain specific version or date references for any reference in 40 C.F.R. Part 98 that refers to any document not contained in 40 C.F.R. Part 98:

(i) If the reference in 40 C.F.R. Part 98 includes a specific version or date reference, then use the version or date as specified in 40 C.F.R. Part 98.

(ii) If the reference in 40 C.F.R. Part 98 does not include a specific version or date reference, then use the version of the referenced document as available on the date of adoption of this chapter.

(f) For electrical transmission and distribution equipment use facilities where the electrical power system crosses Washington state boundaries, limit the GHG report to emissions that occur in Washington state using one of the following methods:

(i) Direct, state specific measurements;

(ii) Prorate the total emissions of the electric power system based upon either nameplate capacity or transmission line miles in the respective service areas by state using company records. Update the nameplate capacity or transmission line miles factor each reporting year and include the data used to establish the nameplate capacity or transmission line miles factor with your annual GHG report;

(iii) Prorate the total emissions of the electric power system based upon population in the respective service areas by state using the most recent U.S. Census data. Update the population factor each reporting year and include the data used to establish the population factor with your annual GHG report.

Table 120-2:
Corresponding References in 40 C.F.R. Part 98 and Chapter 173-441 WAC

Reference in 40 C.F.R. Part 98		Corresponding Reference in Chapter 173-441 WAC	
Section	**Topic**	**Section**	**Topic**
40 C.F.R. Part 98 or "part"	Mandatory Greenhouse Gas Reporting	Chapter 173-441 WAC	Reporting of Emissions of Greenhouse Gases
Subpart A	General Provision	WAC 173-441-010 through 173-441-100	General Provisions
§ 98.1	Purpose and scope	WAC 173-441-010	Scope
§ 98.2	Who must report?	WAC 173-441-030	Applicability
§ 98.2(a)	Applicability: Facility reporting	WAC 173-441-030(1)	Applicability: Facility reporting
§ 98.2 (a)(1)	Applicability: Facility reporting Table A-3	WAC 173-441-030(1)	Applicability: Facility reporting
§ 98.2 (a)(2)	Applicability: Facility reporting Table A-4	WAC 173-441-030(1)	Applicability: Facility reporting
§ 98.2 (a)(3)	Applicability: Facility reporting source categories that meet all three of the conditions listed in this paragraph (a)(3)	WAC 173-441-030(1)	Applicability: Facility reporting
§ 98.2 (a)(4)	Applicability: Facility reporting Table A-5 source categories	WAC 173-441-030(1)	Applicability: Facility reporting
§ 98.2(b)	Calculating emissions for comparison to the threshold	WAC 173-441-030 (1)(b)	Calculating facility emissions for comparison to the threshold
§ 98.2(i)	Reporting requirements when emissions of greenhouse gases fall below reporting thresholds	WAC 173-441-030(5)	Reporting requirements when emissions of greenhouse gases fall below reporting thresholds
§ 98.3	What are the general monitoring, reporting, recordkeeping and verification requirements of this part?	WAC 173-441-050	General monitoring, reporting, recordkeeping and verification requirements
§ 98.3(c)	Content of the annual report	WAC 173-441-050(3)	Content of the annual report
§ 98.3(g)	Recordkeeping	WAC 173-441-050(6)	Recordkeeping
§ 98.3 (g)(5)	A written GHG monitoring plan	WAC 173-441-050 (6)(e)	A written GHG monitoring plan
§ 98.3(i)	Calibration accuracy requirements	WAC 173-441-050(8)	Calibration and accuracy requirements
§ 98.3 (i)(6)	Calibration accuracy requirements: Initial calibration	WAC 173-441-050 (8)(f)	Calibration accuracy requirements: Initial calibration
§ 98.4	Authorization and responsibilities of the designated representative	WAC 173-441-060	Authorization and responsibilities of the designated representative
§ 98.5	How is the report submitted?	WAC 173-441-070	Report submittal
§ 98.5(b)	Verification software	WAC 173-441-070(1)	Facility report submittal
§ 98.6	Definitions	WAC 173-441-020	Definitions
§ 98.7	What standardized methods are incorporated by reference into this part?	WAC 173-441-080	Standardized methods and conversion factors incorporated by reference

Reference in 40 C.F.R. Part 98		Corresponding Reference in Chapter 173-441 WAC	
§ 98.8	What are the compliance and enforcement provisions of this part?	WAC 173-441-090	Compliance and enforcement
§ 98.9	Addresses	WAC 173-441-100	Addresses
Table A-1 to Subpart A of Part 98—Global Warming Potentials, Table A-1 of this part, or Table A-1 of this subpart	Global Warming Potentials	Table A-1 of WAC 173-441-040	Global Warming Potentials
Table A-2 to Subpart A of Part 98—Units of Measure Conversions	Units of Measure Conversions	Table A-2 of WAC 173-441-080	Units of Measure Conversions

(3) **Calculation methods for voluntary reporting.** GHG emissions reported voluntarily under WAC 173-441-030 (5) must be calculated using the following methods:

(a) If the GHG emissions have calculation methods specified in Table 120-1 of this section, use the methods specified in Table 120-1.

(b) If the GHG emissions have calculation methods specified in WAC 173-441-122 or 173-441-124, use the methods specified in WAC 173-441-122 or 173-441-124.

(c) For all GHG emissions from facilities not covered in Table 120-1 of this section or persons supplying any product other than those listed in WAC 173-441-122 or 173-441-124, contact ecology for an appropriate calculation method no later than 180 calendar days prior to the emissions report deadline established in WAC 173-441-050(2) or submit a petition for alternative calculation methods according to the requirements of WAC 173-441-140.

(4) **Alternative calculation methods approved by petition.** An owner or operator may petition ecology to use calculation methods other than those specified in Table 120-1 of this section to calculate its facility GHG emissions. Such alternative calculation methods must be approved by ecology prior to reporting and must meet the requirements of WAC 173-441-140.

(5) **Emissions subject to reporting, but not subject to the reporting threshold.** Facilities that supply CO_2 as described in WAC 173-441-122 (3)(b) required to report or voluntarily reporting under WAC 173-441-030 (1) or (5) based on GHG emissions calculated under subsections (1) through (4) of this section must report supplied CO_2 using the 40 C.F.R. Part 98 Subpart PP methods described in WAC 173-441-122 (3)(b) as part of their facility report as described in that section regardless of the amount of GHG emissions. Those emissions do not count towards the reporting threshold in WAC 173-441-030(1).

AMENDATORY SECTION (Amending WSR 22-05-050, filed 2/9/22, effective 3/12/22)

WAC 173-441-122 Calculation methods for suppliers. This section establishes the scope of reportable GHG emissions under this chapter and GHG emissions calculation methods for suppliers. Owners and operators of suppliers must follow the requirements of this section to determine if they are required to report under WAC 173-441-030(2). Owners and operators of suppliers that are subject to this chapter must follow the requirements of this section and all subparts of 40 C.F.R. Part 98 listed in this section when calculating emissions. If a con-

flict exists between a provision in WAC 173-441-010 through 173-441-110 and 173-441-140 through 173-441-170 and any applicable provision of this section, the requirements of those sections must take precedence.

(1) **General requirements.** An owner or operator of a supplier subject to the requirements of this chapter must report GHG emissions, including GHG emissions from biomass, from all applicable source categories with GHG emissions in Washington state listed in (a) of this subsection using the methods in this section. All GHG emissions in Washington state from a common primary parent company or owner or operator are considered part of a single supplier for the purposes of this section.

(a) Supplier source categories:

(i) Position holders at terminals and refiners delivering fuel products, other than natural gas described in Subpart NN;

(ii) Enterers that import fuel products, other than natural gas described in Subpart NN, outside the bulk transfer/terminal system, and biofuel production facilities that produce and deliver fuel products outside the bulk/terminal system;

(iii) Refiners that produce liquefied petroleum gas;

(iv) Operators of interstate pipelines delivering natural gas;

(v) Importers of liquefied petroleum gas, compressed natural gas, or liquefied natural gas into Washington;

(vi) Local distribution companies who are public utility gas corporations or publicly owned natural gas utilities delivering natural gas;

(vii) Operators of intrastate pipelines delivering natural gas;

(viii) Natural gas liquid fractionators;

(ix) Producers, importers, and exporters of carbon dioxide;

(x) Facilities that make and deliver liquefied natural gas products or compressed natural gas products by liquefying or compressing natural gas received from interstate pipelines.

(b) All references to 40 C.F.R. Part 98 are modified consistent with WAC 173-441-120 (2)(a) through (e).

(c) The calculation methods for voluntary reporting in WAC 173-441-120(3) apply, except calculation methods in WAC 173-441-120 (3)(b) take precedence over the methods from WAC 173-441-120 (3)(a).

(d) An owner or operator may petition ecology to use calculation methods other than those specified in this section to calculate its supplier GHG emissions. Such alternative calculation methods must be approved by ecology prior to reporting and must meet the requirements of WAC 173-441-140.

(2) **Definitions specific to suppliers.** The definitions in this subsection apply throughout this section unless the context clearly requires otherwise.

(a) "Biomethane" or "renewable methane" means biogas that meets pipeline quality natural gas standards.

(b) "Biofuel production facility" means a production facility that produces one or more biomass-derived fuels.

(c) "Biomass-derived fuels" means a fuel listed in 40 C.F.R. Part 98 Table MM-2, or any renewable or biogenic version of a product listed in 40 C.F.R. Part 98 Table MM-1 or 40 C.F.R. Part 98 Table NN-1.

(d) "Biogas" or "renewable natural gas" means a gas consisting largely of methane and other hydrocarbons derived from the decomposition of organic material in landfills, wastewater treatment facilities, and anaerobic digesters.

(e) "Bulk transfer/terminal system" means a fuel distribution system consisting of refineries, pipelines, vessels, and terminals. Fuel storage and blending facilities that are not fed by pipeline or vessel are considered outside the bulk transfer system.

(f) "Enterer" means an entity that imports fuel products into Washington and who is the importer of record under federal customs law or the owner of fuel upon import into Washington if the fuel is not subject to federal customs law. Only enterers that import the fuels specified in this definition outside the bulk transfer/terminal system are subject to reporting under the regulation.

(g) "Fractionator" means plants that produce fractionated natural gas liquids (NGLs) extracted from produced natural gas and separate the NGLs individual component products: Ethane, propane, butanes and pentane-plus (C5+). Plants that only process natural gas but do not fractionate NGLs further into component products are not considered fractionators. Some fractionators do not process production gas, but instead fractionate bulk NGLs received from natural gas processors. Some fractionators both process natural gas and fractionate bulk NGLs received from other plants.

(h) "Fuel transaction" means the record of the exchange of fuel possession, ownership, or title from one entity to another.

(i) "Importer of fuel" means an entity that imports fuel products into Washington and who is the importer of record under federal customs law. For imported fuel products not subject to federal customs law, the "importer of fuel" is the owner of the fuel product upon its entering into Washington if the eventual transfer of ownership of the product to an end user or marketer located in Washington occurs at a location inside Washington. However, where the transfer of ownership of the fuel product to a Washington end user or marketer occurs at a location outside of Washington, the "importer of fuel" is the producer, marketer, or distributor that is the seller of the fuel product to the end user or marketer located inside Washington. Pursuant to subsection (4) of this section, only importers of liquefied petroleum gas, compressed natural gas, and liquefied natural gas are subject to reporting as an importer of fuel.

(j) "Importer of record" means the owner or purchaser of the goods that are imported into Washington.

(k) "Interstate pipeline" means any entity that owns or operates a natural gas pipeline delivering natural gas to consumers in the state and is subject to rate regulation by the Federal Energy Regulatory Commission.

(l) "Intrastate pipeline" means any pipeline or piping system wholly within Washington state that is delivering natural gas to end users and is not regulated as a public utility gas corporation by the Washington state utilities and transportation commission, is not a publicly owned natural gas utility, and is not regulated as an interstate pipeline by the Federal Energy Regulatory Commission. Only intrastate pipeline operators that physically deliver gas to end users in Washington are subject to reporting under this chapter. This definition includes onshore petroleum and natural gas production facilities and natural gas processing facilities, as defined in 40 C.F.R. Part 98, that deliver pipeline and/or nonpipeline quality natural gas to one or more end users. Facility operators that operate an interconnection pipeline that connects their facility to an interstate pipeline, or that share an interconnection pipeline to an interstate pipeline with other nearby facilities, are not considered intrastate pipeline operators. Facilities that receive gas from an upstream LDC and

redeliver a portion of the gas to one or more adjacent facilities are not considered intrastate pipelines.

(m) "Local distribution company" or "LDC," for purposes of this chapter (chapter 173-441 WAC), means a company that owns or operates distribution pipelines, not interstate pipelines, that physically deliver natural gas to end users and includes public utility gas corporations, publicly owned natural gas utilities and intrastate pipelines that are delivering natural gas to end users.

(n) "Position holder" means an entity that holds an inventory position in fuel products as reflected in the records of the terminal operator or a terminal operator that owns fuel products in its terminal. "Position holder" does not include inventory held outside of a terminal, fuel jobbers (unless directly holding inventory at the terminal), retail establishments, or other fuel suppliers not holding inventory at a fuel terminal.

(o) "Producer" means a person who owns, leases, operates, controls, or supervises a Washington state production facility.

(p) "Rack" means a mechanism for delivering motor vehicle fuel or diesel from a refinery or terminal into a truck, trailer, railroad car, or other means of nonbulk transfer.

(q) "Refiner" means, for purposes of this chapter, an individual entity or a corporate-wide entity that delivers fuel products to end users in Washington state that were produced by petroleum refineries owned by that entity or a subsidiary of that entity.

(r) "Terminal" means a fuel product storage and distribution facility that is supplied by pipeline or vessel, and from which fuel product may be removed at a rack. "Terminal" includes a fuel production facility where fuel product is produced and stored and from which fuel product may be removed at a rack.

(s) "Terminal operator" means any entity that owns, operates, or otherwise controls a terminal that is supplied by pipeline or vessel and from which accountable fuel products may be removed at a rack.

(3) **Suppliers of carbon dioxide.** Any supplier of carbon dioxide with supplied CO_2 calculated under this subsection that exceeds the reporting threshold in WAC 173-441-030(2) of this chapter must comply with 40 C.F.R. Part 98 Subpart PP in reporting to ecology, except as otherwise provided in this section. Also use Subpart PP for threshold calculations.

(a) When reporting imported and exported quantities of CO_2 as required in 40 C.F.R. § 98.422, the supplier must report quantities of carbon dioxide imported into and exported from Washington state. Exports for purposes of geologic sequestration must be reported separately from exports for other purposes.

(b) Facilities required to report or voluntarily reporting under WAC 173-441-030 (1) or (5) with the following processes must report supplied CO_2 using the methods in this section as part of their facility GHG report under WAC 173-441-070(1) regardless of the amount of CO_2 supplied.

(i) Production process units located in Washington state that capture a CO_2 stream for purposes of supplying CO_2 to another entity or facility or that capture the CO_2 stream in order to utilize it for geologic sequestration where capture refers to the initial separation and removal of CO_2 from a manufacturing process or any other process; or

(ii) CO_2 production wells located in Washington state that extract or produce a CO_2 stream for purposes of supplying CO_2 for commercial applications or that extract a CO_2 stream in order to utilize it for geologic sequestration.

(c) Missing data substitution procedures. The supplier must comply with 40 C.F.R. § 98.425 when substituting for missing data, except as otherwise provided below.

(i) If the data capture rate is at least 90 percent for the data year, the supplier must substitute for each missing value using the best available estimate of the parameter, based on all available process data.

(ii) If the data capture rate is at least 80 percent but not at least 90 percent for the data year, the supplier must substitute for each missing value with the highest quality assured value recorded for the parameter during the given data year, as well as the two previous data years.

(iii) If the data capture rate is less than 80 percent for the data year, the supplier must substitute for each missing value with the highest quality assured value recorded for the parameter in all records kept according to WAC 173-441-050.

(iv) The supplier must document and retain records of the procedure used for all missing data estimates pursuant to the recordkeeping requirements of WAC 173-441-050.

(4) **Suppliers of natural gas.** Any supplier of natural gas, natural gas liquids, liquefied petroleum gas, compressed natural gas, or liquefied natural gas with emissions calculated under this subsection that exceeds the reporting threshold in WAC 173-441-030(2) must comply with 40 C.F.R. Part 98 Subpart NN in reporting emissions and related data to ecology, except as otherwise provided in this section. Also use the methods in this section for threshold calculations.

(a) *GHGs to report.* In addition to the CO_2 emissions specified under 40 C.F.R. § 98.402, all suppliers of natural gas covered in this section must separately report the CO_2, CO_2 from biomass-derived fuels, CH_4, N_2O, and CO_2e emissions from the complete combustion or oxidation of the annual volume of natural gas delivered, sold or imported in Washington state.

(b) *Calculating GHG emissions.* When reporting imported and exported quantities of GHGs as required in 40 C.F.R. § 98.403 and (a) of this subsection, the supplier must report quantities of GHGs imported into and exported from Washington state.

(i) Natural gas liquid fractionators must use calculation methodology 2 as specified in 40 C.F.R. § 98.403 (a)(2) to estimate the CO_2 emissions that would result from the complete combustion of all natural gas liquid products supplied. For calculating the emissions from liquefied petroleum gas, the fractionators must sum the emissions from the individual constituents of liquefied petroleum gas sold or delivered to others that was produced on-site, except for products for which a final destination outside Washington state can be demonstrated.

(ii) Local distribution companies must estimate CO_2 emissions at the state border or city gate for pipeline quality natural gas using calculation methodology 1 as specified in 40 C.F.R. § 98.403 (a)(1), except that the product of HHV and Fuel is replaced by the annual MMBtu of natural gas received.

(iii) For the calculation of CO_{2j} in Equation 122-2, public utility gas corporations and publicly owned natural gas utilities must estimate annual CO_2 emissions from instate receipts of pipeline quality natural gas from other public utility gas corporations, interstate pipelines and intrastate transmission pipelines, and annual CO_2 emissions from all natural gas redelivered to other public utility gas corporations or interstate pipelines. Annual CO_2 emissions from redelivered natural gas to intrastate pipelines or publicly owned natural gas utilities must be estimated only if the intrastate pipeline or publicly owned natural gas utility also reports emissions under this section. Emissions are calculated according to Equation NN-3 of 40 C.F.R. § 98.403 (b)(1) except that CO_{2j} will be the product of $MMBtu_{Total}$ and the default emission factor from Table NN-1 or the product of $MMBtu_{Total}$ and the reporter specific emission factor. $MMBtu_{Total}$ must be calculated as follows:

$$MMBtu_{Total} = MMBtu_{redelivery} - MMBtu_{receipts} \quad \text{(Eq. 122-1)}$$

Where:

$MMBtu_{Total}$ = Total annual MMBtu used in Equation NN-3

$MMBtu_{redelivery}$ = Total annual MMBtu of natural gas delivered to other companies as specified above

$MMBtu_{receipts}$ = Total annual MMBtu of natural gas received from other companies as specified above

(iv) For the calculation of CO_2l in Equation 122-2, emissions from receipts of pipeline quality natural gas from in-state natural gas producers and net volume of pipeline quality natural gas injected into storage are estimated according to Equation NN-5a of 40 C.F.R. § 98.403 (b)(3) except that CO_2l will be calculated as the product of the net annual MMBtu and a default emission factor from Table NN-1 or the product of the net annual MMBtu and a reporter specific emission factor.

(v) For the calculation of CO_2n in Equation 122-2, emissions from natural gas received directly by LDC systems from producers or natural gas processing plants from local production, received as a liquid and vaporized for delivery, or received from any other source that bypassed the city gate are estimated according to Equation NN-5b of 40 C.F.R. § 98.403 (b)(3) except that CO_2n will be calculated as the product of the net annual MMBtu and a default emission factor from Table NN-1 or the product of the net annual MMBtu and the reporter specific emission factor.

(vi) For the calculation of CO_2k in Equation 122-2, natural gas delivered to large end users, use Equation NN-4 of 40 C.F.R. § 98.403 (b)(2), except that CO_2k will be calculated as the product of the annual MMBtu delivered and a default emission factor from Table NN-1 or the product of the annual MMBtu delivered and the reporter specific emission factor. A large end user means any end user facility required to report under WAC 173-441-030(1).

(vii) Determination of pipeline quality natural gas is based on the annual weighted average HHV, determined according to Equation C-2b of 40 C.F.R. § 98.33 (a)(2)(ii)(A), for natural gas from a single city gate, storage facility, or connection with an in-state producer, in-

terstate pipeline, intrastate pipeline or local distribution company. If the HHV is outside the range of pipeline quality natural gas, emissions will be calculated using the appropriate subsection (4) of this section replacing the default emission factor with either a reporter specific emission factor as calculated in 40 C.F.R. § 98.404 (b)(2) or one determined as follows:

(A) For natural gas or biomethane with an annual weighted HHV below 970 Btu/scf and not exceeding three percent of total emissions estimated under this section, the local distribution company may use the reporter specific weighted yearly average higher heating value and the default emission factor or an emission factor as determined in 40 C.F.R. § 98.404 (c)(3). If emissions exceed three percent of the total, then the Tier 3 method specified in 40 C.F.R. § 98.33 (a)(3)(iii) must be used with monthly carbon content samples to calculate the annual emissions from the portion of natural gas that is below 970 Btu/scf.

(B) For natural gas or biomethane with an annual HHV above 1100 Btu/scf and not exceeding three percent of total emissions estimated under this section, the local distribution company must use the reporter specific weighted yearly average higher heating value and a default emission factor of 54.67 kg CO_2/MMBtu or an emission factor as determined in 40 C.F.R. § 98.404 (c)(3). If emissions exceed three percent of the total, then the Tier 3 method specified in 40 C.F.R. § 98.33 (a)(3)(iii) must be used with monthly carbon content samples to calculate the annual emissions from the portion of natural gas that is above 1100 Btu/scf.

(viii) When calculating total CO_2 emissions for Washington state, the equation below must be used:

$$CO_2 = \sum CO_{2i} - \sum CO_{2j} - \sum CO_{2l} + \sum CO_{2n} - \sum CO_{2k} \quad \text{(Eq. 122-2)}$$

Where:

CO_2	=	Total emissions.
CO_2i	=	Emissions from natural gas received at the state border or city gate, calculated pursuant to subsection (4)(b)(ii) of this section.
CO_2j	=	Emissions from natural gas received for redistribution to or received from other natural gas transmission companies, calculated pursuant to subsection (4)(b)(iii) of this section.
CO_2l	=	Emissions from storage and direct deliveries from producers calculated pursuant to subsection (4)(b)(iv) of this section.
CO_2k	=	Emissions from natural gas delivered to each large end user as calculated pursuant to subsection (4)(b)(vi) of this section.
CO_2n	=	Emissions from natural gas received by the LDC directly from sources bypassing the city gate, and is not otherwise accounted for, as calculated pursuant to subsection (4)(b)(v) of this section.

(ix) The importer of liquefied petroleum gas into Washington state must use calculation methodology 2 described in 40 C.F.R. § 98.403 (a)(2) for calculating CO_2 emissions. For liquefied petroleum

gas, the importer must sum the emissions from the individual components of the gas to calculate the total emissions. If the composition is not supplied by the producer, the importer must use the default value for liquefied petroleum gas presented in Table C-1 of 40 C.F.R. Part 98. The importer of compressed natural gas or liquefied natural gas into Washington state must estimate CO_2 using calculation methodology 1 as specified in 40 C.F.R. § 98.403 (a)(1), except that the product of HHV and fuel is replaced by the annual MMBtu of the imported compressed natural gas and liquefied natural gas.

(x) Operators of facilities that make liquefied natural gas products or compressed natural gas products must estimate CO_2 using calculation methodology 1 as specified in 40 C.F.R. § 98.403 (a)(1), except that the product of HHV and fuel is replaced by the annual MMBtu of the liquefied natural gas sold or delivered in Washington state.

(xi) Operators of facilities that make liquefied natural gas products or compressed natural gas products, importers of liquefied petroleum gas, compressed natural gas, or liquefied natural gas into Washington state, natural gas liquid fractionators, and local distribution companies must estimate and report CH_4 and N_2O emissions using Equation C-8 and Table C-2 as described in 40 C.F.R. § 98.33 (c)(1) for all fuels where annual CO_2 emissions are required to be reported. Operators of facilities that make liquefied natural gas products or compressed natural gas products must estimate CH_4 and N_2O emissions based on the MMBtu of liquefied natural gas sold or delivered. Local distribution companies must use the annual MMBtu determined in (b)(ii) through (vi) of this subsection above in place of the product of the fuel and HHV in Equation C-8 when calculating emissions.

(xii) Local distribution companies must separately and individually calculate end user emissions of CH_4, N_2O, CO_2 from biomass-derived fuels, and CO_2e by replacing CO_2 in Equation 122-2 with CH_4, N_2O, CO_2 from biomass-derived fuels, and CO_2e. CO_2 emissions from biomass-derived fuel are based on the fuel the LDC has contractually purchased on behalf of and delivered to end users. LDCs can elect to report biomethane directly purchased by an end user and delivered by the LDC if the LDC can provide the relevant documentation including invoices, shipping reports, in-kind nomination reports, and contracts to demonstrate the receipt of eligible biomethane and the following information for each contracted delivery:

(A) Name and address of the biomethane vendor from which biomethane is purchased;

(B) Annual MMBtu delivered by each biomethane vendor;

(C) Name, address, and facility type of the facility from which the biomethane is produced;

Emissions from contractually purchased biomethane are calculated using the methods for natural gas required by this section, including the use of the emission factor for natural gas found in 40 C.F.R. § 98.408, Table NN-1. Biomass-derived fuels directly purchased by end users and delivered by the LDC must be reported as natural gas by the LDC, unless the LDC has elected to report the delivery as biomethane and can provide the necessary documentation during verification as stated above.

(xiii) All suppliers in this section must also estimate CO_2e emissions using Equation A-1.

(c) *Monitoring and QA/QC requirements.* For each emissions calculation method chosen under this section, the supplier must meet all

monitoring and QA/QC requirements specified in 40 C.F.R. § 98.404, except as modified in WAC 173-441-050, 173-441-120, and below.

(i) All natural gas suppliers must measure required values at least monthly.

(ii) All natural gas suppliers must determine reporter specific HHV at least monthly, or if the local distribution company does not make its own measurements according to standard business practices, it must use the delivering pipeline measurement.

(iii) All natural gas liquid fractionators must sample for composition at least monthly.

(iv) All importers of liquefied petroleum gas into Washington state must record composition, if provided by the supplier, and quantity in barrels, corrected to 60 degrees Fahrenheit, for each shipment received.

(d) *Data reporting requirements.*

(i) For the emissions calculation method selected under (b) of this subsection, natural gas liquid fractionators must report, in addition to the data required by 40 C.F.R. § 98.406(a), the annual volume of liquefied petroleum gas, corrected to 60 degrees Fahrenheit, that was produced on-site and sold or delivered to others, except for products for which a final destination outside Washington state can be demonstrated. Natural gas liquid fractionators must report the annual quantity of liquefied petroleum gas produced and sold or delivered to others as the total volume in barrels as well as the volume of the individual components for all components listed in 40 C.F.R. Part 98 Table MM-1. Fractionators must also include the annual CO_2, CH_4, N_2O, and CO_2e mass emissions (metric tons) from the volume of liquefied petroleum gas reported in 40 C.F.R. § 98.406 (a)(5) as modified by this regulation, calculated in accordance with (b) of this subsection.

(ii) For the emissions calculation method selected under (b) of this subsection, local distribution companies must report all the data required by 40 C.F.R. § 98.406(b) subject to the following modifications:

(A) Publicly owned natural gas utilities that report in-state receipts at the city gate under 40 C.F.R. § 98.406 (b)(1) must also identify each delivering entity by name and report the annual energy of natural gas received in MMBtu.

(B) Local distribution companies that report under 40 C.F.R. § 98.406 (b)(1) through (b)(7) must also report the annual energy of natural gas in MMBtu associated with the volumes.

(C) In addition to the requirements in 40 C.F.R. § 98.406 (b)(8), local distribution companies must also include CO_2, CO_2 from biomass-derived fuels, CH_4, N_2O, and CO_2e annual mass emissions in metric tons calculated in accordance with 40 C.F.R. § 98.403 (a) and (b)(1) through (b)(3) as modified by (b) of this subsection.

(D) Local distribution companies and intrastate pipelines that deliver natural gas to downstream gas pipelines and other local distribution companies, must report the annual energy in MMBtu, and the information required in 40 C.F.R. § 98.406 (b)(12). These requirements are in addition to the requirements of 40 C.F.R. § 98.406 (b)(6).

(E) Local distribution companies and intrastate pipelines must also report the annual energy in MMBtu, customer information required in 40 C.F.R. § 98.406 (b)(12), and ecology reporter ID if available, for all end users required to report under WAC 173-441-030(1). In addition to reporting the information specified in 40 C.F.R. § 98.406 (b)(13), local distribution companies and intrastate pipelines that

deliver to end users must report the annual energy in MMBtu delivered to the following end use categories: Residential consumers; commercial consumers; industrial consumers; electricity generating facilities; and other end users not identified as residential, commercial, industrial, or electricity generating facilities. Local distribution companies must also report the total energy in MMBtu delivered to all Washington state end users.

(F) Local distribution companies that report under 40 C.F.R. § 98.406 (b)(9) must report annual CO_2, CO_2 from biomass-derived fuel, CH_4, N_2O, and CO_2e emissions (metric tons) that would result from the complete combustion or oxidation of the natural gas supplied to all entities calculated in accordance with (b) of this subsection.

(iii) In addition to the information required in 40 C.F.R. § 98.3(c), the operator of an interstate pipeline, which is not a local distribution company, must report the customer name, address, and ecology reporter ID along with the annual energy of natural gas in MMBtu for natural gas delivered to each customer, including themselves.

(iv) In addition to the information required in 40 C.F.R. § 98.3(c), the operator of an intrastate pipeline that delivers natural gas directly to end users must follow the reporting requirements described under Subpart NN of 40 C.F.R. Part 98 and this section for local distribution companies. The intrastate pipeline operator must also report the summed energy (MMBtu) of natural gas delivered to each entity receiving gas from the intrastate pipeline for purposes of estimating the CO_2i parameter as specified in (b)(ii) of this subsection. Additionally, intrastate pipeline operators are required to estimate a value for CO_2j as specified in (b)(iii) of this subsection for natural gas delivered to local distribution companies, interstate pipelines, and other intrastate pipelines. The CO_2l parameter as specified in (b)(iv) of this subsection must have a value of zero for calculating emissions.

(v) In addition to the information required in 40 C.F.R. § 98.3(c), the importer of liquefied petroleum gas into Washington state must report the annual quantity of liquefied petroleum gas imported as the total volume in barrels as well as the volume of its individual components for all components listed in 40 C.F.R. Part 98 Table MM-1, if supplied by the producer, and report CO_2, CH_4, N_2O, and CO_2e annual mass emissions in metric tons using the calculation methods in (b) of this subsection. All importers of compressed or liquefied natural gas into Washington state and liquefied natural gas production facilities must report the annual quantities imported, and delivered or sold, respectively, in MMBtu, and report CO_2, CH_4, N_2O, and CO_2e annual mass emissions in metric tons separately for compressed natural gas and liquefied natural gas using the calculation methods in (b) of this subsection.

(vi) In addition to the information required in 40 C.F.R. § 98.3(c), all local distribution companies that report biomass emissions from biomethane fuel that was contractually purchased by the LDC on behalf of and delivered to end users, and all liquefied natural gas production facilities reporting biomass emission from biomethane, must report, for each contracted delivery, the information specified in (b)(x) of this subsection.

(vii) All operators of facilities that make liquefied natural gas products must report end user information for deliveries of liquefied natural gas to industrial facilities and natural gas utility custom-

ers, including customer name, address, and the annual quantity of liquefied natural gas delivered to each customer in MMBtu.

(viii) All natural gas liquid fractionators and importers of liquefied petroleum gas must report the total quantity in barrels of liquefied petroleum gas that is excluded from emissions reporting due to demonstration of final destination outside Washington state.

(e) *Procedures for estimating missing data.* Suppliers must follow the missing data procedures specified in 40 C.F.R. § 98.405. The operator must document and retain records of the procedure used for all missing data estimates pursuant to the recordkeeping requirements of WAC 173-441-050.

(5) **Fuel suppliers other than suppliers of natural gas**. Any supplier of petroleum products, biomass-derived fuels, or coal-based liquid fuels with emissions calculated under this subsection that exceeds the reporting threshold in WAC 173-441-030(2) must comply with 40 C.F.R. Part 98 Subparts LL and MM in reporting emissions and related data to ecology, except as otherwise provided in this section. Also use the methods in this section for threshold calculations. For the purposes of this subsection, fuel products do not include products reported under subsection (4) of this section but do include all fuel products listed in 40 C.F.R. Part 98 Subpart MM Tables MM-1 and MM-2, including products listed in Table MM-1 of Subpart MM that are coal-based (coal-to-liquid products). Renewable or biogenic versions of fuel products listed in Table MM-1 are also considered fuel products.

(a) *GHGs to report.*

(i) In addition to the CO_2 emissions specified under 40 C.F.R. § 98.392, all refiners that produce liquefied petroleum gas must report the CO_2, CO_2 from biomass-derived fuels, CH_4, N_2O and CO_2e emissions that would result from the complete combustion or oxidation of the annual quantity of liquefied petroleum gas sold or delivered, except for fuel products for which a final destination outside Washington state can be demonstrated.

(ii) Refiners, position holders of fossil fuel products, and biomass-derived fuel products that supply fuel products at Washington state terminal racks, and enterers that import fuel products for distribution outside the bulk transfer/terminal system must report the CO_2, CO_2 from biomass-derived fuels, CH_4, N_2O, and CO_2e emissions that would result from the complete combustion or oxidation of each fuel product. However, emissions reporting is not required for fuel products in which a final destination outside Washington state can be demonstrated to ecology's satisfaction, or for fuel products that can be demonstrated to ecology's satisfaction to have been previously delivered by a position holder or refiner out of an upstream Washington state terminal or refinery rack prior to delivery out of a second terminal rack. The volume of all fuel products that are excluded from emissions reporting based on the criteria in this paragraph must be reported pursuant to the requirements in (d)(ix) of this subsection. No fuel product shall be reported as finished fuel. Fuel products must be reported as the individual fuel product. For purposes of this chapter, CARBOB blendstocks are reported as RBOB blendstocks.

(b) *Calculating GHG emissions.*

(i) Refiners, position holders at Washington state terminals, and enterers that import fuel products for distribution outside the bulk transfer system must use Equation MM-1 as specified in 40 C.F.R. § 98.393(a)(1) to estimate the CO_2 emissions that would result from the complete combustion of the fuel product. Emissions must be based on

the quantity of fuel product removed from the rack (for refiners and position holders), fuel product imported for distribution outside the bulk transfer/terminal system (by enterers), and fuel product sold to unlicensed entities as specified in (d)(iii) of this subsection (by refiners). For fuel products that are blended, emissions must be reported for each individual fuel product separately, and not as motor gasoline (finished), biofuel blends, or other similar finished fuel product. Emissions from denatured fuel ethanol must be calculated as 100 percent ethanol only. The volume of denaturant is assumed to be zero and is not required to be reported. Emission factors must be taken from column C of 40 C.F.R. Part 98 Table MM-1 or MM-2 as specified in Calculation Method 1 of 40 C.F.R. § 98.393 (f)(1), except that the emission factor for renewable diesel is equivalent to the emission factor for Distillate No. 2. The emission factor for a renewable or biogenic version of a fuel product is equivalent to the emission factor for the corresponding nonrenewable or nonbiogenic version of the fuel product listed in Table MM-1. If a position holder in diesel or biodiesel fuel does not have sealed or financial transaction meters at the rack, and the position holder is the sole position holder at the terminal, the position holder must calculate emissions based on the delivering entity's invoiced volume of fuel product or a meter that meets the requirements of 40 C.F.R. § 98.394 either at the rack or at a point prior to the fuel product going into the terminal storage tanks.

(ii) Refiners that produce liquefied petroleum gas must use Equation MM-1 as specified in 40 C.F.R. § 98.393 (a)(1) to estimate the CO_2 emissions that would result from the complete combustion of the fuel product supplied. For calculating the emissions from liquefied petroleum gas, the emissions from the individual components must be summed. Emission factors must be taken from column C of 40 C.F.R. Part 98 Table MM-1 as specified in Calculation Method 1 of 40 C.F.R. § 98.393 (f)(1).

(iii) Refiners, position holders at Washington state terminals, and enterers identified in this section must estimate and report CH_4 and N_2O emissions using Equation C-8 and Table C-2 as described in 40 C.F.R. § 98.33 (c)(1), except for fuel products listed in Table 122-1, which must use the emission factors in Table 122-1 and Equation C-8 as described in 40 C.F.R. § 98.33 (c)(1). Renewable or biogenic versions of a fuel product must use the same emission factor as required for the corresponding nonrenewable or nonbiogenic version of the fuel product.

Table 122-1. Fuel Product CH_4 and N_2O Emission Factors

Fuel	**CH_4 (g/bbl)**	**N_2O (g/bbl)**
Blendstocks or finished gasoline	20	20
Distillate and diesel-other	2	1
Ethanol	37	27
Biodiesel and renewable diesel	2	1
Oxygenates	13	3
Residuum	18	4
Waxes	17	3
Still gas	19	4
Miscellaneous products	17	3

(iv) All fuel suppliers in this section must estimate CO_2e emissions using Equation A-1.

(c) *Monitoring and QA/QC requirements.* The operator must meet all the monitoring and QA/QC requirements as specified in 40 C.F.R. § 98.394, and the requirements of 40 C.F.R. § 98.3(i) as further specified in WAC 173-441-050 and below.

(i) Position holders are exempt from 40 C.F.R. § 98.3(i) calibration requirements except when the position holder and entity receiving the fuel product have common ownership or are owned by subsidiaries or affiliates of the same company. In such cases the 40 C.F.R. § 98.3(i) calibration requirements apply, unless:

(A) The fuel supplier does not operate the fuel billing meter;

(B) The fuel billing meter is also used by companies that do not share common ownership with the fuel supplier; or

(C) The fuel billing meter is sealed with a valid seal from the county sealer of weights and measures and the operator has no reason to suspect inaccuracies.

(ii) As required by 40 C.F.R. § 98.394 (a)(1)(iii), for fuel products that are liquid at 60 degrees Fahrenheit and one standard atmosphere, the volume reported must be temperature- and pressure-adjusted to these conditions. For liquefied petroleum gas the volume reported must be temperature-adjusted to 60 degrees Fahrenheit.

(d) *Data reporting requirements.* In addition to reporting the information required in 40 C.F.R. Part 98 Subpart MM, the following entities must also report the information identified below:

(i) Washington state position holders must report the annual quantity in barrels, as reported by the terminal operator, of each fuel product, that is delivered across the rack in Washington state, except for fuel products for which a final destination outside Washington state can be demonstrated to ecology's satisfaction, or for fuel products that can be demonstrated to ecology's satisfaction to have been previously delivered by a position holder or refiner out of an upstream Washington state terminal or refinery rack prior to delivery out of a second terminal rack. Denatured fuel ethanol will be reported with the entire volume as 100 percent ethanol only. The volume of denaturant is assumed to be zero and is not required to be reported.

(ii) Washington state position holders that are also terminal operators and refiners must report the annual quantity in barrels delivered across the rack of each fuel product, except for fuel products for which a final destination outside Washington state can be demonstrated to ecology's satisfaction, or for fuel products that can be demonstrated to ecology's satisfaction to have been previously delivered by a position holder or refiner out of an upstream Washington state terminal or refinery rack prior to delivery out of a second terminal rack. Denatured fuel ethanol will be reported with the entire volume as 100 percent ethanol only. The volume of denaturant is assumed to be zero and is not required to be reported. If there is only a single position holder at the terminal, and only diesel or biodiesel is being dispensed at the rack then the position holder must report the annual quantity of fuel using a meter meeting the requirements of 40 C.F.R. § 98.394 or billing invoices from the entity delivering fuel to the terminal.

(iii) Refiners that supply fuel products within the bulk transfer system to entities not licensed by the Washington state department of licensing as a fuel supplier must report the annual quantity in bar-

rels delivered of each fuel product, except for fuel products for which a final destination outside Washington state can be demonstrated to ecology's satisfaction. Denatured fuel ethanol will be reported with the entire volume as 100 percent ethanol only. The volume of denaturant is assumed to be zero and is not required to be reported.

(iv) Enterers delivering fuel products for distribution outside the bulk transfer/terminal system must report the annual quantity in barrels, as reported on the bill of lading or other shipping documents of each fuel product that is imported as a blended component of a finished fuel product, except for fuel products for which a final destination outside Washington state can be demonstrated to ecology's satisfaction, typically based on bills of lading. The denatured fuel ethanol component of a finished fuel products must be reported with the entire denatured ethanol volume as 100 percent ethanol only. The volume of denaturant is assumed to be zero and is not required to be reported. Biomass-derived blends containing no more than one percent petroleum-derived fuel by volume are considered to be 100 percent biomass-derived fuel. Individual biomass-derived fuels and biomass-derived fuels that are a blended component of an imported fuel product must be reported by enterers.

(v) In addition to the information required in 40 C.F.R. § 98.396, refiners must also report the volume of liquefied petroleum gas in barrels supplied in Washington state as well as the volumes of the individual components as listed in 40 C.F.R. Part 98 Table MM-1, except for fuel for which a final destination outside Washington state can be demonstrated.

(vi) All fuel suppliers identified in this section must also report CO_2, CO_2 from biomass-derived fuels, CH_4, N_2O, and CO_2e emissions in metric tons that would result from the complete combustion or oxidation of each fuel product calculated according to Equation A-1.

(vii) All fuel suppliers identified in this section, except for refiners that report pursuant to WAC 173-441-120, must report the total quantity of each fuel product that was imported from outside of Washington state for use in Washington state. In addition, for fuel product imports, the designated percentage of oxygenate must be reported.

(viii) Fuel suppliers identified in this section, except for refiners that report pursuant to WAC 173-441-120, must report the total quantity of biomass-derived fuel blended in Washington state petroleum-derived fuel for use in Washington state.

(ix) Fuel suppliers identified in this section must report the total quantity in barrels of each fuel product that is excluded from emissions reporting due to demonstration of final destination outside Washington state, or demonstration to ecology's satisfaction, typically based on bills of lading, that the fuel product was previously delivered by a position holder or refiner out of an upstream Washington state terminal or refinery rack prior to delivery out of a second terminal rack.

(x) Owners and operators of petroleum refineries and biofuel production facilities required to report or voluntarily reporting under WAC 173-441-030 (1) or (5) must submit a complete refiner report, as defined in 40 C.F.R. Part 98 Subpart MM, that includes all products listed in Tables MM-1 and MM-2, as part of their facility GHG report under WAC 173-441-070(1) regardless of the amount of fuel products produced.

(xi) Owners and operators ((~~may~~)) shall separately indicate the quantity of each fuel type if the fuel supplier can demonstrate to ecology's satisfaction that the fuel is used for one of the following purposes:

(A) Aviation fuels;

(B) Watercraft fuels that are combusted outside of Washington state; or

(C) Motor vehicle fuel or special fuel ((~~that is~~)) used exclusively for agricultural purposes by a farm fuel user, or used for transporting agricultural products on public highways. The supplier must demonstrate to ecology's satisfaction that the buyer of the fuel provided the seller with an exemption certificate ((~~as described in RCW 82.08.865. Fuel used for the purpose of transporting agricultural products on public highways may be included if it is flagged separately and meets the requirements in RCW 82.08.865~~)) in a form and manner prescribed by the department as described in RCW 70A.65.080. Until December 31, 2029, fuel used for transporting agricultural products on public highways may be included under this subsection if the supplier demonstrates to ecology's satisfaction that fuel was used for that purpose. After December 31, 2029, only motor vehicle fuel or special fuel used exclusively for agricultural purposes by a farm fuel user qualifies under this subsection. For the purposes of (d)(xi) of this subsection((~~,~~)):

"Agricultural purposes" and "farm fuel user" have the same meanings as provided in RCW 82.08.865 ((~~and motor vehicle fuel and special fuel have the same meanings as provided in RCW 82.38.020~~)).

"Motor vehicle fuel" means gasoline, the chief use of which is as a fuel for the propulsion of motor vehicles or vessels.

"Special fuel" means diesel, liquefied petroleum gas (also called propane), and biodiesel.

(e) *Procedures for missing data.* For quantities of fuel products that are purchased, sold, or transferred in any manner, fuel suppliers must follow the missing data procedures specified in 40 C.F.R. § 98.395. The supplier must document and retain records of the procedure used for all missing data estimates pursuant to the recordkeeping requirements of WAC 173-441-050.

(6) **GHG emissions reduction reporting requirements.** Beginning with emissions year 2027, any supplier reporting biomass-derived fuels or biogas pursuant to subsection (4) or (5) of this section must meet the requirements of this subsection.

(a) *Calculating GHG emissions reduction relative to fossil fuel.* GHG emissions reductions must be determined individually for each reported biomass-derived fuel or biogas relative to a reference baseline fossil fuel.

The calculation of each GHG emissions reduction must be calculated as follows:

$$GHG_{bio\text{-}fossil} = \frac{CI_f - CI_b}{CI_f} \times 100 \qquad \text{(Eq. 122-3)}$$

Where:

$GHG_{bio\text{-}fossil}$ = Percent GHG emissions reduction of biomass-derived fuel or biogas substituted for comparable fossil fuel

CI_b	=	Carbon intensity of biomass-derived fuel or biogas as determined pursuant to subsection (6)(b) of this section expressed in grams carbon dioxide equivalent per megajoule (gCO_2e/MJ)
CI_f	=	Carbon intensity of reference baseline fossil fuel as determined pursuant to subsection (6)(b) of this section expressed in gCO_2e/MJ

(b) *Carbon intensity determination*. For fuels subject to this section, each carbon intensity and fuel pathway must be determined as follows:

(i) Fuels listed in Table 6 of WAC 173-424-900 must use the carbon intensity value and fuel pathway code listed in the table.

(ii) Fuels not listed in Table 6 of WAC 173-424-900 must establish a carbon intensity and fuel pathway pursuant to WAC 173-424-600 (4) or (5).

(iii) Each carbon intensity and fuel pathway request pursuant to WAC 173-424-600(5) must be submitted for approval by ecology no later than one calendar year prior to the emissions report deadline established in WAC 173-441-050(2).

(A) For each carbon intensity and fuel pathway pending approval by ecology, a temporary value in Table 8 under WAC 173-424-900 may be requested. Requests for temporary values must be submitted for approval by ecology no later than 90 calendar days prior to the emissions report deadline established in WAC 173-441-050(2).

(iv) For each carbon intensity and fuel pathway not submitted for approval pursuant to (b)(iii) of this subsection, suppliers must submit the carbon intensity value and fuel pathway code for approval by ecology no later than 90 calendar days prior to the emissions report deadline established in WAC 173-441-050(2).

(v) Ecology may adjust or assign a carbon intensity or fuel pathway to any fuel reported under this section that does not demonstrate compliance to this subsection to ecology's satisfaction.

(c) *Data reporting requirements*. In addition to reporting the information required in subsections (4) and (5) of this section, suppliers subject to this subsection must also report the information identified below:

(i) Biomass-derived fuel or biogas products must be reported individually and not as an average biofuel blend and include:

(A) Fuel name;

(B) GHG emissions reduction expressed in percentage;

(C) Each input value used in Eq. 122-3 including each carbon intensity expressed in gCO_2e/MJ and corresponding fuel pathway code.

AMENDATORY SECTION (Amending WSR 24-24-087, filed 12/3/24, effective 1/3/25)

WAC 173-441-124 Calculation methods for electric power entities. This section establishes the scope of reportable energy and GHG emissions under this chapter and GHG emissions calculation methods for

electric power entities. Owners and operators of electric power entities must follow the requirements of this section to determine if they are required to report under WAC 173-441-030(3). Owners and operators of electric power entities that are subject to this chapter must follow the requirements of this section when calculating emissions. If a conflict exists between a provision in WAC 173-441-010 through 173-441-110 and 173-441-140 through 173-441-170 and any applicable provision of this section, the requirements of those sections must take precedence. For emissions years 2026 and earlier, reported calendar year 2027 and earlier, reporters must report according to the requirements of this section that existed as of January 1, 2026.

(1) **General requirements.** An owner or operator of an electric power entity subject to the requirements of this chapter must report GHG emissions, including GHG emissions from biomass, from all applicable categories listed in (a) of this subsection using the methods and procedures in this section.

(a) Electric power entity categories:

(i) Electricity importers and exporters, as defined in this section;

(ii) Retail providers, including multijurisdictional retail providers, as defined in this section;

(iii) Asset controlling suppliers;

(iv) Electric generating facilities in Washington state must report using the methods specified in WAC 173-441-120.

(b) The calculation methods for voluntary reporting in WAC 173-441-120(3) apply, except calculation methods in WAC 173-441-120 (3)(b) take precedence over the methods from WAC 173-441-120 (3)(a).

(c) Alternative calculation methods approved by petition. An owner or operator may petition ecology to use calculation methods other than those specified in this section to calculate its electric power entities GHG emissions. Such alternative calculation methods must be approved by ecology prior to reporting and must meet the requirements of WAC 173-441-140.

(d) For emissions year 2027 and forward, a balancing authority operating in Washington must provide written authorization for data sharing to support verification and analysis of market transactions and associated emissions, and such authorization must be renewed and submitted to ecology once every two years. This agreement will authorize the e-tag authority to share data with ecology aggregated by entity and statewide on total imports, total exports, and total wheelthroughs.

(2) **Definitions specific to electric power entities.** The definitions in this subsection apply throughout this section unless the context clearly requires otherwise.

(a) "Centralized electricity market" means an electricity market organized and operated by a market operator and approved by the Federal Energy Regulatory Commission to provide wholesale electricity to market participants through a system of bidding and generation resource offers that are used to determine the dispatch of electricity from market participants. Examples of existing and proposed centralized electricity markets include the energy imbalance market and extended day ahead market operated by the California Independent System Operator, and the Markets+ market operated by the Southwest Power Pool.

(b) "Deemed market importer" means a market participant that successfully offers electricity from a resource or system into a centralized electricity market and the electricity is assigned, designated,

deemed, or attributed to be serving Washington electric load by the methodologies, processes, or decision algorithms that are put in place by the market operator of that centralized electricity market for purposes of reporting under this rule and approved by the department of ecology. For the western energy imbalance market and extended day ahead market, the deemed market importer is the participating resource scheduling coordinator if the methodologies, processes, or decision algorithms by which the electricity is assigned, designated, deemed, or attributed to be serving Washington electric load for purposes of reporting under this rule are approved by the department of ecology. If a federal power marketing administration is the market participant on behalf of nonfederal resources, then the resource owner or operator is the deemed market importer.

(c) "Direct delivery of electricity" means electricity that meets any of the following criteria: The facility has a first point of interconnection at a Washington scheduling point or within a balancing authority area located entirely in Washington; the electricity is scheduled for delivery from the specified source to a Washington scheduling point or a balancing authority area located entirely in Washington via a continuous physical transmission path from interconnection of the facility in the balancing authority in which the facility is located to the Washington scheduling point or power system; or there is an agreement to dynamically transfer electricity from the facility to a Washington scheduling point or balancing authority area located entirely in Washington; or the facility has a first point of interconnection within a centralized electricity market and electricity from that facility is attributed to Washington by the centralized electricity market.

(d) "Electricity exporter" means electric power entities that deliver exported electricity. The entity that exports electricity is identified on the e-tag as the purchasing-selling entity (PSE) on the last segment of the tag's physical path, with the point of receipt located inside Washington state and the point of delivery located outside Washington state. For electricity that is exported from a designated scheduling point in the balancing authority area of a federal power marketing administration, the exporter is the purchasing-selling entity at the first point of the physical path of the e-tag that is not the generation source.

(e) "Electricity generating facility" means a facility that generates electricity and includes one or more generating units at the same location.

(f) "Electricity importer" means:

(i) For electricity that is scheduled with an e-tag to a final point of delivery into a balancing authority area located entirely within Washington state, the electricity importer is identified on the e-tag as the purchasing-selling entity on the last segment of the tag's physical path with the point of receipt located outside Washington state and the point of delivery located inside Washington state;

(ii) For facilities physically located outside Washington state with the first point of interconnection to a balancing authority area located entirely within Washington state when the electricity is not scheduled on an e-tag, the electricity importer is the facility operator or owner;

(iii) For imported electricity from a resource or system assigned, designated, deemed, or attributed to Washington through a centralized electricity market, the electricity importer is the deemed market importer;

(iv) For electricity from facilities allocated to serve retail electricity customers of a multijurisdictional electric company, the electricity importer is the multijurisdictional electric company;

(v) If the importer identified under (f)(i) of this subsection is a federal power marketing administration over which Washington state does not have jurisdiction, and the federal power marketing administration has not voluntarily elected to comply with this chapter, then the electricity importer is the next purchasing-selling entity in the physical path on the e-tag, or if no additional purchasing-selling entity over which Washington state has jurisdiction, then the electricity importer is the electric utility that operates the Washington state transmission or distribution system, or the generation balancing authority;

(vi) For electricity that is imported into the state by a federal power marketing administration and sold to a public body or cooperative customer or direct service industrial customer located in Washington state pursuant to section 5 (b) or (d) of the Pacific Northwest Electric Power Planning and Conservation Act of 1980, P.L. 96-501, the electricity importer is the federal marketing administration;

(vii) If the importer identified under (f)(vi) of this subsection has not voluntarily elected to comply with this chapter, then the electricity importer is the public body or cooperative customer or direct service industrial customer;

(viii) For electricity that is imported into the state to a designated scheduling point inside the balancing authority area of a federal power marketing administration, the importer is the purchasing-selling entity on the e-tag at the last point on the physical path that is not the sink;

(ix) If the importer identified under (f)(viii) of this subsection is a federal power marketing administration that has not elected to voluntarily comply with this chapter, then the importer is the retail provider with which the scheduling point is associated; ((~~or~~))

(x) For electricity from facilities allocated to a consumer-owned utility inside Washington state from a multijurisdictional consumer-owned utility, the electricity importer is the consumer-owned utility inside Washington state;

(xi) For electricity that is scheduled with an e-tag to a final point of delivery inside Washington state inside a multi-state balancing authority area operated by a multijurisdictional electric company, that is not served by the multijurisdictional electric company, and where (f)(vi) and (vii) of this subsection does not apply, the electricity importer is identified on the e-tag as the purchasing-selling entity on the last segment of the tag's physical path with the point of receipt located outside Washington state and the point of delivery located inside Washington state;

(xii) If the importer identified under (f)(iii) of this subsection is a federal power marketing administration that has not voluntarily elected to comply with this chapter:

(A) Where the imported electricity is contracted to a Washington retail provider or retail end user, the electricity importer is that retail provider or retail end user;

(B) Where the imported electricity is not contracted to a Washington retail provider or retail end user, the electricity importer is the retail provider or retail end user that receives a pro rata attribution of electricity; and

(C) The imported electricity under (f)(xii) of this subsection is considered to be a specified source of electricity.

(xiii) For imported electricity that is bulk unspecified electricity from resources within a centralized electricity market and assigned, designated, deemed, or attributed to Washington through a centralized electricity market, the electricity importer is the Washington retail provider or retail end user that receives a pro rata attribution of electricity.

(g) "Electricity transaction" means the purchase, sale, import, export, or exchange of electric power.

(h) "Western energy imbalance market" or "WEIM" means the western energy imbalance market operated by the California Independent System Operator.

(i) "E-tag" means an energy tag representing transactions on the North American bulk electricity market scheduled to flow between or across balancing authority areas and to and from locations listed in an affiliated registry, as represented in a manner and form created by the North American Electric Reliability Corporation and as maintained by the North American Energy Standards Board or a successor organization.

(j) "Exported electricity" means electricity generated inside Washington state and delivered to serve load located outside Washington state. This includes electricity delivered from a first point of receipt inside Washington state, to the first point of delivery outside Washington state, with a final point of delivery outside Washington state. Exported electricity delivered across balancing authority areas is documented on e-tags with the first point of receipt located inside Washington state and the final point of delivery located outside Washington state. Exported electricity does not include electricity generated inside Washington state then transmitted outside of Washington state, but with a final point of delivery inside Washington state. Exported electricity does not include electricity generated inside Washington state that is allocated to serve Washington state retail customers of a multijurisdictional retail provider, consistent with a cost allocation methodology approved by the Washington state utilities and transportation commission and the utility regulatory commission of at least one additional state in which the multijurisdictional retail provider provides retail electric service.

(k) "Extended day ahead market" or "EDAM" means the extended day ahead market operated by the California Independent System Operator. EDAM entities participate in both the CAISO EDAM and WEIM. EDAM transactions are settled in the real-time WEIM.

(l) "Final point of delivery" means the sink specified on the e-tag, where defined points have been established through the affiliated registry. When e-tags are not used to document electricity deliveries, as may be the case within a balancing authority, the final point of delivery is the location of the load. Exported electricity is disaggregated by the final point of delivery.

(m) "First point of delivery in Washington" means the first defined point on the transmission system located inside Washington state at which imported electricity may be measured, consistent with defined points that have been established through the affiliated registry.

(n) "First point of receipt" means the generation source specified on the e-tag, where defined points have been established through the affiliated registry. When e-tags are not used to document electricity deliveries, as may be the case within a balancing authority, the first point of receipt is the location of the individual generating facility or unit, or group of generating facilities or units.

(o) "Generation providing entity" or "GPE" means a facility or generating unit operator, full or partial owner, party to a contract for a fixed percentage of net generation from the facility or generating unit, party to a tolling agreement with the owner, or exclusive marketer for the facility or generating unit recognized by ecology.

(p) "Grid" or "electric power grid" means a system of synchronized power providers and consumers connected by transmission and distribution lines and operated by one or more control centers.

(q) "Imported electricity" means electricity generated outside Washington state with a final point of delivery within the state.

(i) "Imported electricity" includes electricity transferred into or attributed to Washington by a centralized electricity market, but does not include electricity imported into Washington by a market operator to obtain or provide emergency assistance under applicable emergency preparedness and operations reliability standards of the North American Electric Reliability Corporation or western electricity coordinating council.

(ii) "Imported electricity" includes imports from linked jurisdictions, but such imports shall be construed as having no emissions.

(iii) Electricity from a system that is marketed by a federal power marketing administration shall be construed as "imported electricity," not electricity generated in Washington state.

(iv) "Imported electricity" does not include any electricity ((~~imports of unspecified electricity that are netted by exports of unspecified electricity to any jurisdiction not covered by a linked program by the same entity within the same hour~~)) wheeled through the state or separately accounted for in this chapter.

(v) For a multijurisdictional electric company, "imported electricity" means electricity, other than from in-state facilities, that contributes to a common system power pool. Where a multijurisdictional electric company has a cost allocation methodology approved by the Washington state utilities and transportation commission, the allocation of specific facilities to Washington state's retail load will be in accordance with that methodology.

(vi) For a multijurisdictional consumer-owned utility, "imported electricity" includes electricity from facilities that contribute to a common system power pool that are allocated to a consumer-owned utility inside Washington state pursuant to a methodology approved by the governing board of the consumer-owned utility.

(r) "Last point of delivery in Washington" means the last defined point on the transmission system located inside Washington state at which exported electricity may be measured, consistent with defined points that have been established through the North American Energy Standards Board Electric Industry Registry.

(s) "Marketer" means a purchasing-selling entity that delivers electricity and is not a retail provider.

(t) "Market operator" means the legal entity that operates and maintains a centralized electricity market.

(u) "Market participant" means an electric power entity that has an agreement with a centralized electricity market operator and participates in that centralized electricity market in accordance with the rules and procedures of that market, as well as with an approved tariff that governs the operations of the centralized electricity market.

(v) "Markets plus" or "Markets+" means the Markets+ centralized electricity market operated by the Southwest Power Pool.

(w) "Multijurisdictional consumer-owned utility" means an electric generation and transmission cooperative owned by a collection of consumer-owned utilities in multiple states or a consumer-owned utility that provides electricity to member owners in Washington state and in one or more other states in a contiguous service territory or from a common power system.

(x) "Multijurisdictional electric company" means an investor-owned utility that provides electricity to customers in Washington state and in one or more other states in a contiguous service territory or from a common power system.

(y) "Multijurisdictional retail provider" means a:

(i) Multijurisdictional electric company; or

(ii) Multijurisdictional consumer-owned utility.

(z) "Point of delivery" or "POD" means a point on the electricity transmission or distribution system where a deliverer makes electricity available to a receiver, or available to serve load. This point may be an interconnection with another system or a substation where the transmission provider's transmission and distribution systems are connected to another system, or a distribution substation where electricity is imported into the state over a multijurisdictional retail provider's distribution system.

(aa) "Point of receipt" or "POR" means the point on an electricity transmission or distribution system where an electricity receiver receives electricity from a deliverer. This point can be an interconnection with another system or a substation where the transmission provider's transmission and distribution systems are connected to another system.

(bb) "Power" means electricity, except where the context makes clear that another meaning is intended.

(cc) "Power contract" or "written power contract," as used for the purposes of documenting specified versus unspecified sources of imported and exported electricity, means a written document, including associated verbal or electronic records if included as part of the written power contract, arranging for the sale or procurement of electricity. Power contracts may be, but are not limited to, power purchase agreements, enabling agreements, electricity transactions, and tariff provisions, without regard to duration, or written agreements to import or export on behalf of another entity, as long as that other entity also reports to ecology the same imported or exported electricity. A power contract for a specified source is a contract that is contingent upon delivery of power from a particular facility, unit, or asset-controlling supplier's system that is designated at the time the transaction is executed.

(dd) "Purchasing-selling entity" or "PSE" means the entity that is identified on an e-tag for each physical path segment.

(ee) "Retail end use customer" or "retail end user" means a residential, commercial, agricultural, or industrial electric customer who buys electricity to be consumed as a final product and not for resale.

(ff) "Retail provider" means any of the following:

(i) An electric utility as defined in RCW 19.405.020(14);

(ii) Multijurisdictional retail providers;

(iii) Multijurisdictional consumer-owned utilities.

(gg) "Retail sales" means electricity sold to retail end users over the course of a calendar year, measured in megawatt hours. Retail sales do not include line losses or self-consumption by the retail supplier.

(hh) "Specified source of electricity" or "specified source" means a facility, unit, or asset controlling supplier that is permitted to be claimed as the source of electricity delivered. The reporting entity must have either full or partial ownership in the facility or a written power contract to procure electricity generated by that facility or unit or from an asset controlling supplier at the time of entry into the transaction to procure electricity. For electricity from a resource or system that is assigned, designated, deemed, or attributed to be serving Washington electric load by the methodologies, processes, or decision algorithms that are put in place by the market operator of that centralized electricity market for purposes of reporting under this rule and approved by the department of ecology, the reporting entity must indicate in the offer of the electricity to the market that the electricity is available to serve load in Washington.

(ii) "Sink" or "sink to load" or "load sink" means the sink identified on the physical path of e-tags, where defined points have been established through the affiliated registry. Exported electricity is disaggregated by the sink on the e-tag, also referred to as the final point of delivery on the e-tag.

(jj) "Source of generation" or "generation source" means the generation source identified on the physical path of e-tags, where defined points have been established through the affiliated registry, or a resource or system identified by the market operator of a centralized electricity market as the source of electricity assigned, designated, deemed, or attributed to be serving Washington electric load. Imported electricity and wheels are disaggregated by the source on the e-tag, also referred to as the first point of receipt.

(kk) "Tolling agreement" means an agreement whereby a party rents a power plant from the owner. The rent is generally in the form of a fixed monthly payment plus a charge for every megawatt generated, generally referred to as a variable payment.

(ll) "Unspecified source of electricity" or "unspecified source" means a source of electricity that is not a specified source at the time of entry into the transaction to sell or procure the electricity.

(mm) "California Independent System Operator" or "CAISO" is the operator of the WEIM and EDAM centralized electricity markets.

(nn) "Common point" means, for purposes of identifying electricity wheeled through the state:

(i) Any first PORs and final PODs within the same balancing authority area located entirely in Washington; or

(ii) A final POD and corresponding first POR that is located fully within Washington state in a multi-state balancing authority area, but is not associated with the multi-state balancing authority area's common system power pool.

(oo) "Composite source point of receipt" or "composite source POR" is a first point of receipt on the physical path of an e-tag at which electricity generated by multiple facilities or units is aggregated, including at least one generation resource that meets the requirements of subsection (3)(a)(xiii)(B) of this section. A composite source POR must be the last point of receipt on the e-tag's physical path outside Washington, with the next point of delivery located inside Washington state.

(pp) "Dynamic tag," "dynamically tagged power," "dynamic schedule," or "dynamic interchange schedule," mean specified transmission of electric power from a generation source updated in real time by telemetered reading or value in an interval on a NERC e-tag.

(qq) "Electricity wheeled through the state" means electricity that is generated outside the state of Washington and delivered into Washington with the final point of delivery outside Washington including, but not limited to, electricity wheeled through the state on a single NERC e-tag, or wheeled into and out of Washington at a common point or trading hub on the power system on separate e-tags within the same hour. "Electricity wheeled through the state" does not include electricity wheeled into and out of Washington on separate e-tags with a final point of delivery in a linked jurisdiction outside of Washington, unless the linked jurisdiction has adopted rules accounting for electricity imports wheeled into and out of Washington on separate e-tags.

(rr) "Extended day-ahead market" or "EDAM" is the day ahead centralized electricity market operated by CAISO.

(ss) "Linked jurisdiction" has the same meaning defined under WAC 173-446-020.

(tt) "Committed capacity" means electricity generated from an electricity generation source located outside the state of Washington that is committed via a contract to serve Washington load and has indicated this commitment to a market operator.

(uu) "Surplus electricity" means an amount of electricity generated by a resource in excess of the resource's existing obligations to provide electricity to purchasing entities.

(3) **Data requirements and calculation methods.** Except as provided in (g) of this subsection, the electric power entity who is required to report under WAC 173-441-030(3) of this chapter must comply with the following requirements.

(a) General requirements and content for GHG emissions data reports for electricity importers and exporters.

(i) Greenhouse gas emissions. The electric power entity must report GHG emissions separately for each category of delivered electricity required, in metric tons of CO_2 equivalent (MT of CO_2e), with biogenic CO_2 reported separately, according to the calculation methods in this section.

(ii) Delivered electricity. The electric power entity must report imported and exported electricity in MWh disaggregated by first point of receipt (POR) or final point of delivery, as applicable, and must also separately report imported and exported electricity from unspecified sources, from centralized electricity markets, and from each specified source. Where applicable, first points of receipt and final points of delivery (POD) must be reported using the standardized code used in e-tags, as well as the full name of the POR/POD. The electric power entity must report whether the first point of receipt or final point of delivery, as applicable, is located in a linked jurisdiction published on the ecology website.

(iii) Imported electricity from unspecified sources. When reporting imported electricity delivered from unspecified sources, the electric power entity must report for each first point of receipt ((~~the following information~~)) according to (a)(iii)(A), (D), and (E) of this subsection, and the electric power entity may report according to (a)(iii)(B) and (C) of this subsection:

(A) ((~~Whether the first point of receipt is located in a linked jurisdiction published on the ecology website;~~

~~(B)~~)) The amount of electricity from unspecified sources as measured at the first point of delivery in Washington state((~~;~~)).

((~~(C)~~)) (B) The amount of electricity ((~~imports of unspecified electricity that are netted by exports of unspecified electricity to any jurisdiction not covered by a linked program~~)) and the final point of delivery from unspecified sources that is wheeled through the state, as defined in subsection (2)(qq) of this section, on separate e-tags by the same entity within the same hour.

((~~(D)~~)) (C) Where the first point of receipt is a composite source POR, the amount of electricity unambiguously shown to be supported by specified Washington generation sources within the same hour, as reported under (a)(xiii)(F)(I) of this subsection and where all requirements of (a)(xiii) of this subsection have been met.

(D) The net amount of imported unspecified electricity after ((~~taking into account the requirements in~~)) accounting for the amount of electricity reported under (a)(iii)((~~(C)~~)) (B) and (a)(iii)(C) of this subsection.

(E) GHG emissions, including those associated with transmission losses, as required in this section.

(iv) Delivered electricity from specified facilities or units. The electric power entity must report all direct delivery of electricity as from a specified source for facilities or units in which they are a generation providing entity (GPE) or have a written power contract to procure electricity. An electric power entity must report imported electricity as from a specified source when the electricity power entity is a GPE of that facility. When reporting imported electricity from specified facilities or units, the electric power entity must disaggregate electricity deliveries and associated GHG emissions by facility or unit and by first point of receipt, as applicable. The reporting entity must also report total GHG emissions and MWh from specified sources and the sum of emissions from specified sources explicitly listed as not covered in chapter 70A.65 RCW, as described in chapter 173-446 WAC. Seller Warranty: The sale or resale of specified source electricity is permitted among entities on the e-tag market path insofar as each sale or resale is for specified source electricity in which sellers have purchased and sold specified source electricity, such that each seller warrants the sale of specified source electricity from the source through the market path. Claims of specified sources of imported electricity, must include the following information:

(A) Measured at busbar. The amount of imported electricity from specified facilities or units as measured at the busbar; and

(B) Not measured at busbar. If the amount of imported electricity deliveries from specified facilities or units as measured at the busbar is not provided, report the amount of imported electricity as measured at the first point of delivery in Washington state, including estimated transmission losses as required in this section and the reason why measurement at the busbar is not known.

(v) Imported electricity from a centralized electricity market.

(A) For the western energy imbalance market only, and for emissions reporting years 2023 through 2026 only, the retail provider or market participant located or operating in Washington that receives a delivery of electricity facilitated through the western energy imbalance market is the electricity importer for that electricity for the purposes of this section. In the event that the market operator is able to identify deemed market importers that successfully offer energy that is attributed to Washington before 2026, those identified entities are the deemed market importers beginning in the following calendar year.

(B) For the western energy imbalance market only, and for emissions reporting years 2023 through 2026 only, the reporting entity must separately report power obtained from the western energy imbalance market, based on annual totals of electricity purchased in MWh.

(C) Each deemed market importer must separately report all electricity assigned, designated, deemed, or attributed to Washington by an originating centralized electricity market, in a manner designated by ecology.

(D) Each deemed market importer must calculate, report, and cause to be verified on an annual basis the greenhouse gas emissions associated with the electricity which the entity offered that has been designated, deemed, or attributed to Washington.

(E) Each deemed market importer must calculate and report, to the extent feasible, the total amount of electricity assigned, designated, deemed, or attributed to Washington by an originating centralized electricity market that was either committed capacity, surplus, or neither in a manner designated by ecology. If feasible, this information may instead be directly provided to ecology by the market operator instead of by the deemed market importer.

(vi) Imported electricity supplied by asset-controlling suppliers. The reporting entity must separately report imported electricity supplied by asset-controlling suppliers recognized by ecology. The reporting entity must:

(A) Report the asset-controlling supplier standardized purchasing-selling entity (PSE) acronym or code, full name, and the ecology identification number;

(B) Report asset-controlling supplier power that was not acquired as specified power, as unspecified power;

(C) Report delivered electricity from asset-controlling suppliers as measured at the first point of delivery in Washington state; and

(D) Report GHG emissions calculated pursuant to this section, including transmission losses.

(E) To claim power from an asset-controlling supplier, the asset-controlling supplier must be identified in one of the following means:

(I) On the physical path of the e-tag as the PSE at the first point of receipt, or in the case of asset-controlling suppliers that are exclusive marketers, as the PSE immediately following the associated generation owner; or

(II) If there is no e-tag associated with the imported electricity, on a long-term contract that identifies the ACS as the relevant provider of that electricity.

(vii) Exported electricity. The electric power entity must report exported electricity in MWh and associated GHG emissions in MT of CO_2e for unspecified sources disaggregated by each final point of delivery outside Washington state, and for each specified source disaggregated by each final point of delivery outside Washington state, as well as the following information:

(A) Exported electricity as measured at the last point of delivery located in Washington state, if known. If unknown, report as measured at the final point of delivery outside Washington state.

(B) Do not report estimated transmission losses.

(C) Report whether the final point of delivery is located in a linked jurisdiction published on the ecology website.

(D) Report GHG emissions calculated pursuant to this section.

(viii) Exchange agreements. The electric power entity must report delivered electricity under power exchange agreements consistent with

imported and exported electricity requirements of this section. Electricity delivered into Washington state under exchange agreements must be reported as imported electricity and electricity delivered out of Washington state under exchange agreements must be reported as exported electricity.

(ix) Verification documentation. The electric power entity must retain for purposes of verification documentation of e-tags, written power contracts, settlements data, and any other reports provided by the market operator to the electric power entity regarding electricity attributed to Washington for which that entity is the deemed market importer, and all other information required to confirm reported electricity procurements and deliveries pursuant to the recordkeeping requirements of WAC 173-441-050.

(x) Electricity generating units and cogeneration units in Washington state. Electric power entities that also operate electricity generating units or cogeneration units located inside Washington state that meet the applicability requirements of WAC 173-441-030(1) must report GHG emissions to ecology under WAC 173-441-120.

(xi) Electricity generating units and cogeneration units outside Washington state. Operators and owners of electricity generating units and cogeneration units located outside Washington state who elect to report to ecology under WAC 173-441-030(5) must fully comply with the reporting and verification requirements of this chapter.

(xii) Aggregated zero-emissions generation sources. Aggregated hydroelectric or other zero-emissions generation sources can be voluntarily collectively claimed as a single specified source if all the following requirements are met:

(A) All aggregated generation sources are hydroelectric or other zero-emission sources, and all aggregated sources share a need to be aggregated due to interdependent water flows or other physical limitations.

(B) The aggregated generation sources' e-tag is unique to the aggregated sources and no individual source or subset of sources within or external to the aggregate sources can be tagged from it.

(C) The output of any source, or combination of sources included in the aggregated generation sources, cannot be individually supplied to serve load independent of the aggregated sources configuration.

(D) The seller warranty is maintained pursuant to (a)(iv) of this subsection to claim each source in the aggregate as a specified source.

(E) The GPE of the aggregate generation source maintains meter data and provides to reporters subject to this article, no later than May 1st following each data year, documentation, data, and records, which can include, but are not limited to:

(I) Written contracts with hourly data;

(II) Allocated meter reports for each source, including all information required to conduct the lesser of analysis;

(III) Supplemental data to allow EPEs reporting imports into Washington to separately report the imports from each source in the aggregate. Each source in the aggregate may contribute a different share of the importer's total aggregate imports, including within the same hour.

(xiii) Composite source accounting.

(A) The amount of imported electricity from unspecified sources and delivered from a composite source POR which is unambiguously shown to be supported by Washington generation sources, according to the requirements of (a)(xiii) of this subsection and verified, may be repor-

ted under (a)(xiii)(F)(I) of this subsection. A reporting entity may only report under (a)(xiii)(F)(I) of this subsection if all requirements of (a)(xiii) of this subsection are met. A reporting entity is not required to report any amount of electricity under (a)(xiii)(F) of this subsection. Electricity reported under (a)(xiii)(F)(I) of this subsection informs the net amount of imported electricity from unspecified sources calculated under (a)(iii) of this subsection.

(B) For all electricity reported in each hour under (a)(xiii)(F)(I) of this subsection the reporting entity must claim the Washington generation source as a specified source of electricity and the seller warranty must be maintained pursuant to (a)(iv) of this subsection. For each applicable Washington generation source the reporting entity must register the source according to (f)(i) of this subsection and the reporting entity must provide to ecology net generation data as reported to the EIA, along with contracts for delivery of power from the specified unit(s) to the reporting entity, and proof of direct delivery of the power to the applicable composite source POR.

(C) The reporting entity must have sole claim to all electricity reported in each hour under (a)(xiii)(F)(I) of this subsection.

(D) Any electricity reported under (a)(xiii)(F)(I) of this subsection may not be reported as MWhWSP-WA or EGWA in Eq. 124-10 and may not contribute to the system emission factor for an asset controlling supplier under (b)(iii) of this subsection. For the purposes of this chapter, any electricity reported under (a)(xiii)(F)(I) of this subsection is attributed to Washington load. Any exported electricity, where the composite source POR is not the sink, may not be reported under (a)(xiii)(F)(I) of this subsection. Any electricity contributing to a system emission factor supporting imports to an external jurisdiction may not be reported under (a)(xiii)(F)(I) of this subsection. Any electricity reported as an import to a linked jurisdiction or supporting imports to a linked jurisdiction, by contribution to a system emission factor, may not be reported under (a)(xiii)(F)(I) of this subsection.

(E) A reporting entity must retain data to document their composite source accounting to a verifier, which must include, but is not limited to:

(I) All hourly e-tags representing electricity imports from the composite source POR and all hourly e-tags where an applicable Washington resource is the first point of receipt and the composite source POR is the sink.

(II) Hourly meter data and allocated meter reports for energy generated from each applicable Washington resource.

(III) Written power contracts, including for each applicable Washington resource.

(IV) An hourly accounting of any untagged energy from an applicable Washington resource reported under (a)(xiii)(F)(I) of this subsection.

(F) Where the requirements of (a)(xiii) of this subsection are met, a reporting entity may report as described below. For each composite source POR reported, the reporting entity must report for each hour the following information:

(I) The amount of electricity from each Washington resource supporting transacted electricity imports from unspecified sources. Where the composite source POR and Washington resource are in different balancing authority areas, the amount of electricity from the Washington

resource must be documented by e-tags showing the composite source POR as the final point of delivery.

(II) The total amount of electricity generated by each Washington resource and the total amount of electricity generated by each Washington resource which is allocated to the reporting entity.

(b) Calculating GHG emissions.

(i) Calculating GHG emissions from unspecified sources. For electricity from unspecified sources, the electric power entity must calculate the annual CO_2 equivalent mass emissions using the following equation:

$$CO_2e = MWh \times TL \times EF_{unsp} \quad \text{(Eq. 124-1)}$$

Where:

CO_2e	=	Annual CO_2 equivalent mass emissions from the unspecified electricity deliveries at each point of receipt identified (MT of CO_2e).
MWh	=	Megawatt-hours of unspecified electricity deliveries at each point of receipt identified.
EF_{unsp}	=	Default emission factor for unspecified electricity imports.
EF_{unsp}	=	0.428 MT of CO_2e/MWh.
TL	=	Transmission loss correction factor.
TL	=	((~~TL =~~)) 1.02 to account for transmission losses between the busbar and measurement at the first point of receipt in Washington and for electricity from a centralized electricity market that does not account for losses in attribution of energy to Washington.
TL	=	1.0 for electricity from a centralized electricity market that accounts for losses in the attribution of energy to Washington.

(ii) Calculating GHG emissions from specified facilities or units. For electricity from specified facilities or units, including electricity that is deemed, designated, assigned, or attributed by a centralized electricity market, the electric power entity must calculate emissions using the following equation:

$$CO_2e = MWh \times TL \times EF_{sp} \quad \text{(Eq. 124-2)}$$

Where:

CO_2e	=	Annual CO_2 equivalent mass emissions from the specified electricity deliveries from each facility or unit claimed (MT of CO_2e).
MWh	=	Megawatt-hours of specified electricity deliveries from each facility or unit claimed.
EF_{sp}	=	Facility-specific or unit-specific emission factor published on the ecology website and calculated using total emissions and transactions data as described below. The emission factor is based on data from the year prior to the reporting year.

TL = Transmission loss correction factor.

TL = 1.02 to account for transmission losses associated with generation outside of a Washington state balancing authority, including electricity from a centralized electricity market that does not account for losses in attribution of energy to Washington.

TL = 1.0 if the reporting entity provides documentation that demonstrates to the satisfaction of a verifier and ecology that transmission losses have been accounted for, or are compensated by using electricity sourced from within Washington state, or for electricity from a centralized electricity market that accounts ((~~for a two percent transmission loss factor~~)) losses in the attribution of energy to Washington.

(A) Ecology shall calculate facility-specific or unit-specific emission factors and publish them on the ecology website using the following equation:

$$EFsp = Esp/EG \qquad \text{(Eq. 124-3)}$$

Where:

Esp = CO_2e emissions for a specified facility or unit for the report year (MT of CO_2e).

EG = Net generation from a specified facility or unit for the report year shall be based on data reported to the Energy Information Administration (EIA).

(B) To register a specified unit(s) source of power, the reporting entity must provide to ecology unit level GHG emissions consistent with the data source requirements of this section and net generation data as reported to the EIA, along with contracts for delivery of power from the specified unit(s) to the reporting entity, and proof of direct delivery of the power by the reporting entity as an import to Washington state.

(I) For specified facilities or units whose operators are subject to this chapter or whose owners or operators voluntarily report under this chapter, Esp shall be equal to the sum of CO_2e emissions reported pursuant to this section.

(II) For specified facilities or units whose operators are not subject to reporting under this chapter or whose owners or operators do not voluntarily report under this chapter, but are subject to the U.S. EPA GHG Mandatory Reporting Regulation, Esp shall be based on GHG emissions reported to U.S. EPA pursuant to 40 C.F.R. Part 98. For GHG emissions reported to U.S. EPA pursuant to 40 C.F.R. Part 98, if it is not possible to isolate the emissions that are directly related to electricity production, ecology may calculate Esp based on EIA data. Emissions from combustion of biomass-derived fuels will be based on EIA data until such time the emissions are reported to U.S. EPA.

(III) For specified facilities or units whose operators are not subject to reporting under this chapter or whose owners or operators do not voluntarily report under this chapter, nor are subject to the U.S. EPA GHG Mandatory Reporting Regulation, Esp is calculated using heat of combustion data reported to the Energy Information Administration (EIA) as shown below.

$$Esp = 0.001 \times \Sigma(Q \times EF) \qquad \text{(Eq. 124-4)}$$

Where:

0.001	=	Conversion factor kg to MT
Q	=	Heat of combustion for each specified fuel type from the specified facility or unit for the report year (MMBtu). For cogeneration, Q is the quantity of fuel allocated to electricity generation consistent with EIA reporting. For geothermal electricity, Q is the steam data reported to EIA (MMBtu).
EF	=	CO_2e emission factor for the specified fuel type as required by this chapter (kg CO_2e/MMBtu). For geothermal electricity, EF is the estimated CO_2 emission factor published by EIA.

(IV) Facilities or units will be assigned an emission factor by the ecology based on the type of fuel combusted or the technology used when a U.S. EPA GHG Report or EIA fuel consumption report is not available, including new facilities and facilities located outside the U.S.

(V) Meter data requirement. For verification purposes, electric power entities shall retain meter generation data to document that the power claimed by the reporting entity was generated by the facility or unit at the time the power was directly delivered.

(VI) A lesser of analysis is applicable to imports from specified sources for which ecology has calculated an emission factor of zero, and for imports from Washington renewable portfolio standard (RPS) eligible resources, excluding the following: Dynamically tagged power deliveries; nuclear power; asset controlling supplier power; and imports from hydroelectric facilities for which an entity's share of metered output on an hourly basis is not established by power contract. A lesser of analysis is required pursuant to the following equation:

$$\text{Sum of Lesser of MWh} = \Sigma HMsp \min(MGsp * Ssp, TGsp) \qquad \text{(Eq. 124-5)}$$

Where:

ΣHMsp	=	Sum of the Hourly Minimum of MGsp and TGsp (MWh).
MGsp	=	Metered facility or unit net generation (MWh).
Ssp	=	Entity's share of metered output, if applicable.
TGsp	=	Tagged or transmitted energy at the transmission or subtransmission level imported to Washington (MWh).

(iii) Calculating GHG emissions of imported electricity supplied by asset-controlling suppliers. Based on annual reports submitted to ecology pursuant to WAC 173-441-070(3), ecology will calculate and publish on the ecology website the system emission factor for all asset-controlling suppliers recognized by the ecology. The reporting entity must calculate emissions for electricity supplied using the following equation:

$$CO_2e = MWh \times TL \times EF_{acs} \qquad \text{(Eq. 124-6)}$$

Where:

CO_2 = Annual CO_2 equivalent mass emissions from the specified electricity deliveries from ecology-recognized asset-controlling suppliers (MT of CO_2e).

MWh = Megawatt-hours of specified electricity deliveries.

EFACS = Asset-Controlling Supplier system emission factor published on the ecology website (MT CO_2e/MWh). Ecology will assign the system emission factors for all asset-controlling suppliers based on a previously verified GHG report submitted to ecology pursuant to WAC 173-441-070(3). The supplier-specific system emission factor is calculated annually by ecology. The calculation is derived from data contained in annual reports submitted that have received a positive or qualified positive verification statement. The emission factor is based on data from two years prior to the reporting year.

TL = Transmission loss correction factor.

TL = 1.02 when deliveries are not reported as measured at a first point of receipt located within the balancing authority area of the asset-controlling supplier.

TL = 1.0 when deliveries are reported as measured at a first point of receipt located within the balancing authority area of the asset-controlling supplier.

Ecology must calculate the system emission factor for asset-controlling suppliers using the following equations:

$$EFACS = \text{Sum of System Emissions MT of } CO_2e / \text{Sum of System MWh} \quad \text{(Eq. 124-7)}$$

$$\text{Sum of System Emissions, MT of } CO_2e = \Sigma Easp + \Sigma(PEsp * EFsp) + \Sigma(PEunsp * EFunsp) - \Sigma(SEsp * EFsp) \quad \text{(Eq. 124-8)}$$

$$\text{Sum of System MWh} = \Sigma EGasp + \Sigma PEsp + \Sigma PEunsp - \Sigma SEsp \quad \text{(Eq. 124-9)}$$

Where:

ΣEasp = Emissions from owned facilities. Sum of CO_2e emissions from each specified facility/unit in the asset-controlling supplier's fleet (MT of CO_2e).

ΣEGasp = Net generation from owned facilities. Sum of net generation for each specified facility/unit in the asset-controlling supplier's fleet for the data year as reported to ecology under this chapter (MWh).

PEsp = Electricity purchased from specified sources. Amount of electricity purchased wholesale and taken from specified sources by the asset-controlling supplier for the data year as reported to ecology under this chapter (MWh).

PEunsp = Electricity purchased from unspecified sources. Amount of electricity purchased wholesale from unspecified sources by the asset-controlling supplier for the data year as reported to ecology under this chapter (MWh).

SEsp = Electricity sold from specified sources. Amount of wholesale electricity sold from specified sources by the asset-controlling supplier for the data year as reported to ecology under this chapter (MWh).

EFsp = CO_2e emission factor as defined for each specified facility or unit calculated consistent with (b)(ii) of this subsection (MT CO_2e/MWh).

EFunsp = Default emission factor for unspecified sources calculated consistent with (b)(i) of this subsection (MT CO_2e/MWh).

(iv) Calculating GHG emissions of imported electricity for multijurisdictional retail providers. Multijurisdictional retail providers must include emissions and megawatt-hours in the terms below from facilities or units that contribute to a common system power pool. Multijurisdictional retail providers do not include emissions or megawatt-hours in the terms below from facilities or units allocated to serve retail loads in designated states pursuant to a cost allocation methodology approved by the Washington state utilities and transportation commission and the utility regulatory commission of at least one additional state in which the multijurisdictional retail provider provides retail electric service. For multijurisdictional consumer-owned utilities, the cost allocation methodology must be approved by its governing board. Multijurisdictional retail providers must calculate emissions that have a compliance obligation using the following equation:

$$CO_2e_{linked} = (MWhR \times TLR - MWhWSP\text{-}WA - EGWA) \times EFMJRP\text{-}notWA + MWhSP\text{-}notWA \times TLWSP \times EFunsp - CO_2e \quad \text{(Eq. 124-10)}$$

Where:

CO_2e = Annual CO_2e mass emissions of imported electricity (MT of CO_2e).

MWhR = Total electricity procured by multijurisdictional retail provider to serve its retail customers in Washington, reported as retail sales for Washington state service territory, MWh.

MWhWSP-WA = Wholesale electricity procured in Washington state by multijurisdictional retail provider to serve its retail customers in Washington state, as determined by the first point of receipt on a e-tag and pursuant to a cost allocation methodology approved by the Washington state utilities and transportation commission (UTC) and the utility regulatory commission of at least one additional state in which the multijurisdictional retail provider provides retail electric service, MWh. For multijurisdictional consumer-owned utilities, the cost allocation methodology must be approved by its governing board.

MWhWSP-not WA = Wholesale electricity imported into Washington state by multijurisdictional retail provider with a final point of delivery in Washington state and not used to serve its Washington state retail customers, MWh.

EFMJRP-not WA	=	Multijurisdictional retail provider system emission factor for out-of-state generation calculated by ecology and consistent with a cost allocation methodology approved by the Washington state utilities and transportation commission and the utility regulatory commission of at least one additional state in which the multijurisdictional retail provider provides retail electric service. For multijurisdictional consumer-owned utilities, the cost allocation methodology must be approved by its governing board.
EFunsp	=	Default emission factor for unspecified sources calculated consistent with this section (MT CO_2e/MWh).
EGWA	=	Net generation measured at the busbar of facilities and units located in Washington state that are allocated to serve its retail customers in Washington state pursuant to a cost allocation methodology approved by the Washington state utilities and transportation commission and the utility regulatory commission of at least one additional state in which the multijurisdictional retail provider provides retail electric service, MWh. For multijurisdictional consumer-owned utilities, the cost allocation methodology must be approved by its governing board.
TL	=	Transmission loss correction factor.
TL WSP	=	1.02 for transmission losses applied to wholesale power.
TL R	=	Estimate of transmission losses from busbar to end user reported by multijurisdictional retail provider.
CO_2e linked	=	Annual CO_2e mass emissions recognized by ecology pursuant to linkage under chapter 70A.65 RCW, as described in chapter 173-446 WAC (MT of CO_2e).

(c) Additional requirements for retail providers, excluding multijurisdictional retail providers. Retail providers must include the following information in the GHG emissions data report for each report year((~~,~~)) in addition to the information identified ((~~in (a)(i), (ii), and (vii) of this subsection~~)) elsewhere in this section.

(i) Retail providers must report Washington state retail sales. ((~~A retail provider who is required only to report retail sales may choose not to apply the verification requirements specified in WAC 173-441-085, if the retail provider deems the emissions data report nonconfidential.~~))

(ii) Retail providers may elect to report the subset of retail sales attributed to the electrification of shipping ports, truck stops, and motor vehicles if metering is available to separately track these sales from other retail sales.

(iii) Retail providers that report as electricity importers or exporters also must separately report electricity imported from specified and unspecified sources by other electric power entities to serve their load, designating the electricity importer. In addition, all imported electricity transactions documented by e-tags where the retail provider is the PSE at the sink must be reported.

(d) Additional requirements for multijurisdictional retail providers. Multijurisdictional retail providers that provide electricity into Washington state at the distribution level must include the following information in the GHG emissions data report for each report year, in addition to the information identified elsewhere in this section.

(i) A report of the electricity transactions and GHG emissions associated with the common power system or contiguous service territo-

ry that includes consumers in Washington state. This includes the requirements in this section as applicable for each generating facility or unit in the multijurisdictional retail provider's fleet;

(ii) The multijurisdictional retail provider must include in its emissions data report wholesale power purchased and taken (MWh) from specified and unspecified sources and wholesale power sold from specified sources according to the specifications in this section, and as required for ecology to calculate a supplier-specific emission factor;

(iii) Total retail sales (MWh) by the multijurisdictional retail provider in the contiguous service territory or power system that includes consumers in Washington state;

(iv) Retail sales (MWh) to Washington state customers served in Washington state's portion of the service territory;

(v) Retail sales derived from each centralized electricity market;

(vi) GHG emissions associated with the imported electricity, including both Washington state retail sales and wholesale power imported into Washington state from the retail provider's system, according to the specifications in this section;

(vii) Multijurisdictional retail providers that serve Washington state load must claim as specified power all power purchased or taken from facilities or units in which they have operational control or an ownership share or written power contract;

(viii) Multijurisdictional retail providers that serve Washington state load may elect to exclude information listed in this section when registering claims to specified power from facilities located outside Washington state and participating in the Federal Energy Regulatory Commission's PURPA Qualifying Facility program.

(e) Additional requirements for asset-controlling suppliers. Owners or operators of electricity generating facilities or exclusive marketers for certain generating facilities may apply for an asset-controlling supplier designation from ecology. Approved asset-controlling suppliers may request that ecology calculate or adopt a supplier-specific emission factor pursuant to this section. To apply for asset-controlling supplier designation, the applicant must:

(i) Meet the requirements in this chapter, including reporting pursuant as applicable for each generating facility or unit in the supplier's fleet;

(ii) Include in its emissions data report wholesale power purchased and taken (MWh) from specified and unspecified sources and wholesale power sold from specified sources according to the specifications in this section, and as required for ecology to calculate a supplier-specific emission factor;

(iii) Retain for verification purposes documentation that the power sold by the supplier originated from the supplier's fleet of facilities and either that the fleet is under the supplier's operational control or that the supplier serves as the fleet's exclusive marketer;

(iv) Provide the supplier-specific ecology identification number to electric power entities who purchase electricity from the supplier's system.

(v) To apply for and maintain asset-controlling supplier status, the entity shall submit as part of its emissions data report the following information, annually:

(A) General business information, including entity name and contact information;

(B) List of officer names and titles;

(C) Data requirements as prescribed by ecology;

(D) A list and description of electricity generating facilities that the reporting entity anticipates will be part of its greenhouse gas report; and

(E) An attestation, in writing and signed by an authorized officer of the applicant, as follows:

(I) "I certify under penalty of perjury under the laws of the State of Washington that I am duly authorized by (name of entity) to sign this attestation on behalf of (name of entity), that (name of entity) meets the definition of an asset-controlling supplier as specified in this section and that the information submitted herein is true, accurate, and complete."

(II) Asset-controlling suppliers must annually adhere to all reporting and verification requirements of this chapter, or be removed from asset-controlling supplier designation. Asset-controlling suppliers will also lose their designation if they receive an adverse verification statement, but may reapply in the following year for redesignation.

(f) Requirements for claims of specified sources of electricity. Each reporting entity claiming specified facilities or units for imported or exported electricity, including deemed market importers, must register its anticipated specified sources with ecology ((~~as part of their greenhouse gas report~~)) pursuant to (f)(i) of this subsection by February 1st following each emissions year to obtain associated emission factors calculated by ecology for use in the emissions data report required to be submitted by the ((~~report submission due date~~)) reporting deadline in WAC 173-441-050 (2)(a) of the same year. ((~~If an operator fails to register a specified source by February 1st for sources used the previous year, the~~)) Specified source operators must use the emission factor provided by ecology for a specified facility or unit in the emissions data report ((~~required to be submitted by the report submission due date in WAC 173-441-050 (2)(a)~~)). Each reporting entity claiming specified facilities or units for imported or exported electricity must also meet requirements in the emissions data report.

(i) Registration information for specified sources. The following information is required:

(A) The facility names and, for specification to the unit level, the facility and unit names.

(B) For sources with a previously assigned ecology identification number, the ecology facility or unit identification number or supplier number published on ecology's website. For newly specified sources, ecology will assign a unique identification number.

(C) If applicable, the facility and unit identification numbers as used for reporting to the ((~~U.S. EPA Acid Rain Program,~~)) U.S. EPA pursuant to 40 C.F.R. Part 98((~~,~~)) and U.S. Energy Information Administration((~~, Federal Energy Regulatory Commission's PURPA Qualifying Facility program, as applicable~~)).

(D) The physical address of each facility, including jurisdiction.

(E) ((~~Provide names of facility owner and operator.~~

~~(F) The percent ownership share and whether the facility or unit is under the electricity importer's operational control.~~

~~(G) Total facility or unit gross and net nameplate capacity when the electricity importer is a GPE.~~

~~(H) Total facility or unit gross and net generation when the electricity importer is a GPE.~~

~~(I) Start date of commercial operation and, when applicable, date of repowering.~~

~~(J) GPEs claiming additional capacity at an existing facility must include the implementation date, the expected increase in net generation (MWh), and a description of the actions taken to increase capacity.~~

~~(K)~~)) Designate whether the facility or unit is a newly specified source, a continuing specified source, or was a specified source in the previous report year that will not be specified in the current report year.

((~~(L)~~)) (F) Provide the primary technology or fuel type ((~~as listed below:~~

~~(I) Variable renewable resources by type, defined for purposes of this chapter as pure solar, pure wind, and run-of-river hydroelectricity;~~

~~(II) Hybrid facilities such as solar thermal;~~

~~(III) Hydroelectric facilities ≤ 30 MW, not run-of-river;~~

~~(IV) Hydroelectric facilities ≥ 30 MW;~~

~~(V) Geothermal binary cycle plant or closed loop system;~~

~~(VI) Geothermal steam plant or open loop system;~~

~~(VII) Units combusting biomass-derived fuel, by primary fuel type;~~

~~(VIII) Nuclear facilities;~~

~~(IX) Cogeneration by primary fuel type;~~

~~(X) Fossil sources by primary fuel type;~~

~~(XI) Co-fired fuels;~~

~~(XII) Municipal solid waste combustion;~~

~~(XIII) Other.~~

~~(ii) Additional information for specified sources. For each claim to a specified source of electricity, the electricity importer must indicate whether one or more of the following descriptions applies:~~

~~(A) Deliveries from new facilities. Specified source of electricity is first registered pursuant to this section and delivered by an electricity importer within 12 months of the start date of commercial operation and the electricity importer making a claim in the current data year is either a GPE or purchaser of electricity under a written power contract;~~

~~(B) Deliveries from existing facilities with additional capacity. Specified source of electricity is first registered pursuant to this section and delivered by a GPE within 12 months of the start date of an increase in the facility's generating capacity due to increased efficiencies or other capacity increasing actions~~)).

((~~(iii)~~)) (ii) Additional information for deemed market importers for claims of specified sources of electricity. To receive a positive verification statement upon verification for claims of specified imports from a centralized electricity market, the reporting entity must be able to demonstrate to ecology's satisfaction that the market operator designated, assigned, deemed, or otherwise attributed energy from those resources to Washington. The reporting entity may demonstrate proof of such attribution by settlement records or other information such as that provided by the market operator to the market participant showing that energy offered by the deemed market importer was attributed to Washington. This provision of records and other information must be submitted to ecology by the reporting entity in a manner designated by ecology by ((~~May~~)) June 1st for electricity transactions involving centralized electricity markets in the previous calendar year.

(g) For electric power entities who report greenhouse gas emissions less than 10,000 MT CO_2e annually, ecology may accept existing reports and disclosures that meet the requirements of this section. If ecology determines that existing reports and disclosures meet the requirements of this section, they will also be subject to third-party verification requirements of WAC 173-441-085.

(4) **Recordkeeping.** GHG inventory program for electric power entities that import or export electricity. In lieu of a GHG monitoring plan, electric power entities that import or export electricity must prepare GHG inventory program documentation that is maintained and available for verifier review and ecology audit pursuant to the recordkeeping requirements of this section. The following information is required:

(a) Information to allow the verification team to develop a general understanding of entity boundaries, operations, and electricity transactions;

(b) Reference to management policies or practices applicable to reporting pursuant to this section;

(c) List of key personnel involved in compiling data and preparing the emissions data report;

(d) Training practices for personnel involved in reporting delivered electricity and responsible for data report certification, including documented training procedures;

(e) Query of e-tag source data to determine the quantity of electricity (MWh) imported, exported, and wheeled for transactions in which they are the purchasing-selling entity on the last physical path segment that crosses the border of Washington state, access to review the raw e-tag data, a tabulated summary, and query description;

(f) Reference to other independent or internal data management systems and records, including written power contracts and associated verbal or electronic records, full or partial ownership, invoices, reports and statements from market operators, and settlements data used to document whether reported transactions are specified or unspecified and whether the requirements for adjustments to covered emissions of chapter 70A.65 RCW, as described in chapter 173-446 WAC are met;

(g) Description of steps taken and calculations made to aggregate data into reporting categories required pursuant to this section;

(h) Records of preventive and corrective actions taken to address ((~~verifier~~)) verification body and ecology findings of past nonconformances and material misstatements;

(i) Log of emissions data report modifications made after initial certification; and

(j) A written description of an internal audit program that includes emissions data report review and documents ongoing efforts to improve the GHG inventory program.