

**WAC 173-424-900 Tables.**

**Table 1. Washington Carbon Intensity Standards for Gasoline and Gasoline Substitutes**

<b>Calendar Year</b>	<b>Washington Carbon Intensity Standard (gCO<sub>2</sub>e per MJ)</b>	<b>Percent Reduction</b>
2023	98.44	0.50 percent
2024	97.97	1.00 percent
2025	96.95	2.00 percent
2026	95.96	3.00 percent
2027	94.97	4.00 percent
2028	93.49	5.50 percent
2029	92.0	7.00 percent
2030	90.52	8.50 percent
2031	89.04	10.00 percent
2032	89.04	10.00 percent
2033	89.04	10.00 percent
2034	79.14	20.00 percent
2035	79.14	20.00 percent
2036	79.14	20.00 percent
2027	79.14	20.00 percent
2038	79.14	20.00 percent
Carbon intensity of gasoline and gasoline substitute for the baseline year (2017) is 98.93 gCO <sub>2</sub> per MJ		

**Table 2. Washington Carbon Intensity Standards for Diesel and Diesel Substitutes**

<b>Calendar Year</b>	<b>Washington Carbon Intensity Standard (gCO<sub>2</sub>e per MJ)</b>	<b>Percent Reduction</b>
2023	99.61	0.50 percent
2024	99.11	1.00 percent
2025	98.11	2.00 percent
2026	97.11	3.00 percent
2027	96.11	4.00 percent
2028	94.60	5.50 percent
2029	93.10	7.00 percent
2030	91.60	8.50 percent
2031	90.10	10.00 percent
2032	90.10	10.00 percent
2033	90.10	10.00 percent
2034	80.09	20.00 percent
2035	80.09	20.00 percent
2036	80.09	20.00 percent
2037	80.09	20.00 percent
2038	80.09	20.00 percent
Carbon intensity of diesel and diesel substitute for the baseline year (2017) is 100.11 gCO <sub>2</sub> per MJ		

**Table 3. Washington Energy Densities and Conversion Factors for Fuels and Blendstocks**

Fuel (unit)	MJ/unit
Gasoline blendstock (gallon)	122.48 (MJ/gallon)
Washington gasoline (gallon)	118.38 (MJ/gallon)
Fossil diesel fuel (gallon)	134.48 (MJ/gallon)
Compressed natural gas (therm) <sup>1</sup>	105.5 (MJ/therm)
Electricity (kiloWatt hour)	3.60 (MJ/kiloWatt hour)
Denatured ethanol (gallon)	81.51 (MJ/gallon)
Clear biodiesel (gallon)	126.13 (MJ/gallon)
Liquefied natural gas (gallon)	78.83 (MJ/gallon)
Hydrogen (kilogram)	120.00 (MJ/kilogram)
Liquefied petroleum gas (gallon)	89.63 (MJ/gallon)
Renewable hydrocarbon diesel (gallon)	129.65 (MJ/gallon)
Undenatured anhydrous ethanol (gallon)	80.53 (MJ/gallon)
Alternative Jet Fuel (gallon)	126.37 (MJ/gallon)
Renewable naphtha (gallon)	117.66 (MJ/gallon)

<sup>1</sup> If therms are reported on a LHV basis. For therms reported on an HHV basis, this value must be converted to HHV basis.

**Table 4. Washington Energy Economy Ratio Values for Fuels in Vehicles**

Light/Medium Duty Applications (Fuels used as gasoline replacements)		Heavy-Duty/Off-Road Applications (Fuels used as diesel replacements)		Aviation Applications (Fuels used as jet fuel replacements)	
Fuel/Vehicle Combination	EER Value Relative to Gasoline	Fuel/Vehicle Combination	EER Value Relative to Diesel	Fuel/Vehicle Combination	EER Value Relative to conventional jet
Gasoline (including E10) or any other gasoline-ethanol blend	1	Diesel fuel (including B5) or any other blend of diesel and biodiesel or renewable hydrocarbon diesel	1	Alternative Jet Fuel+	1
CNG Internal Combustion Engine Vehicle (ICEV)	1	CNG, LNG, or LPG (Spark-Ignition Engines)	0.9		
Electricity/ Battery Electric Vehicle or Plug-In Hybrid Electric Vehicle	3.4	CNG, LNG, or LPG (Compression-Ignition Engines)	1		

Light/Medium Duty Applications (Fuels used as gasoline replacements)		Heavy-Duty/Off-Road Applications (Fuels used as diesel replacements)		Aviation Applications (Fuels used as jet fuel replacements)	
Fuel/Vehicle Combination	EER Value Relative to Gasoline	Fuel/Vehicle Combination	EER Value Relative to Diesel	Fuel/Vehicle Combination	EER Value Relative to conventional jet
Electricity/On-Road Electric Motorcycle	4.4	Electricity/Battery Electric Vehicle or Plug-In Hybrid Electric Vehicle	5		
Propane/LPG Forklift	0.9	Electricity/Battery Electric or Plug-in Hybrid Transit Bus	5		
Hydrogen/Fuel Cell Vehicle	2.5	Electricity/Fixed Guideway Light Rail	3.3		
		Electricity/Fixed Guideway Streetcar/Trolley bus	2.1		
		Electricity/Fixed Guideway Aerial Tram	2.6		
		Electricity/Electric Forklift	3.8		
		Electricity/Electric TRU (eTRU)	3.4		
		Hydrogen/Fuel Cell Vehicle	1.9		
		Hydrogen/Fuel Cell Forklift	2.1		
		Electricity/Cargo Handling Equipment	2.7		
		Electricity/Ocean Going Vessel	2.6		
		Electricity/Ground Support Equipment	3.2		

**Table 5. Washington Land Use Change CI Values for Biofuels CI Determination**

Feedstock	LUC Value (gCO <sub>2</sub> e/MJ)
Corn Ethanol	19.80
Sorghum Ethanol	19.40
Sugarcane Ethanol	11.80
Soybean Biodiesel or Renewable Diesel	29.10
Canola Biodiesel or Renewable Diesel	14.50

Feedstock	LUC Value (gCO <sub>2</sub> e/MJ)
Palm Biodiesel or Renewable Diesel	71.40

**Table 6. Washington Carbon Intensity Lookup Fuel Pathway Table**

Fuel	Pathway Code	Pathway Description	Carbon Intensity Values (gCO <sub>2</sub> e/MJ)
Gasoline	WAGAS001	Clear gasoline - based on a weighted average of gasoline supplied to Washington. The CI of the gasoline supply was based on average crude oil supplied to the states (WA, UT, and MT) and U.S. average refinery efficiency	100.46
	WAGAS002	Washington gasoline - blended with corn ethanol as supplied to Washington <sup>2</sup>	98.93
Diesel	WAULSD001	Clear diesel - based on a weighted average of diesel fuel supplied to Washington. The CI of the diesel supply was based on average crude oil supplied to the states (WA, UT, and MT) and U.S. average refinery efficiency	101.18
	WAULSD002	Washington diesel - blended with soy biodiesel as supplied to Washington <sup>3</sup>	100.11
Compressed Natural Gas	WACNG	Average North American natural gas delivered via pipeline; compressed in WA	77.98
Liquefied Natural Gas	WALNG	Average North American natural gas delivered via pipeline; liquefied in WA	86.76
Liquefied Petroleum Gas	WALPG	Fossil Liquefied petroleum gas from crude oil and natural gas <sup>4</sup>	80.79
Electricity	WAELEC001	Washington average grid electricity used as transportation fuel in Washington	63.51 (subject to annual update)
	WAELEC002	Renewable electricity, from solar or wind, deemed to have a carbon intensity of zero	0

Fuel	Pathway Code	Pathway Description	Carbon Intensity Values (gCO <sub>2</sub> e/MJ)
Hydrogen	WAHYF	Compressed H <sub>2</sub> produced in Washington from central steam methane reformation of North American fossil-based NG	112.76
	WAHYB	Compressed H <sub>2</sub> produced in WA from central steam methane reformation of biomethane (renewable feedstock) from North American landfills	92.77
	WAHYEG	Compressed H <sub>2</sub> produced in WA from electrolysis using WA average grid electricity	101.57
	WAHYER	Compressed H <sub>2</sub> produced in WA from electrolysis using zero-CI electricity, from solar- or wind-generated electricity <sup>5</sup>	6.49

<sup>2</sup> Based on 2017 WA blending level of 10% ethanol derived from EIA data, using standard corn ethanol pathway CI from WA-GREET.

<sup>3</sup> Based on 2017 WA blending level of 2.5% biodiesel derived from EIA data, using standard soy biodiesel pathway CI from WA-GREET.

<sup>4</sup> Based on CARB estimate of 25% NG and 75% petroleum for PADD5.

<sup>5</sup> Assumes WAMX grid electricity is used for compression and dispensing at refueling stations.

**Table 7. Washington Substitute Fuel Pathway Codes**

Fuel	Fuel Pathway code	CI (gCO <sub>2</sub> e/MJ)
Substitute CI for Ethanol. This pathway may only be used to report transactions that are sales or purchases without obligation, exports, loss of inventory, not for transportation use, and exempt fuel use.	ETH0116	40
Substitute CI for Biodiesel. This pathway may only be used to report transactions that are sales or purchases without obligation, exports, loss of inventory, not for transportation use, and exempt fuel use.	BIOD0116	15
Substitute CI for Renewable Diesel. This pathway may only be used to report transactions that are sales or purchases without obligation, exports, loss of inventory, not for transportation use, and exempt fuel use.	RNWD0116	15
Substitute CI for E10 Gasoline. This pathway may only be used to report transactions that are sales or purchases without obligation, exports, loss of inventory, not for transportation use, and exempt fuel use.	WAGAS0116	96.43 (subject to annual update)
Substitute CI for B2.5 Diesel <sup>6</sup> . This pathway may only be used to report transactions that are sales or purchases without obligation, exports, loss of inventory, not for transportation use, and exempt fuel use.	WAULSD0116	99.17 (subject to annual update)

<sup>6</sup> Based on 2017 WA average diesel blending level derived from EIA data.

**Table 8. Washington Temporary Fuel Pathway Codes**

<b>Fuel</b>	<b>Feedstock</b>	<b>Process Energy</b>	<b>FPC</b>	<b>CI (gCO<sub>2</sub>e/MJ)</b>
Ethanol	Corn	Grid electricity, natural gas, and/or renewables	WAETH100T	90 <sup>7</sup>
	Sorghum	Grid electricity, natural gas, and/or renewables	WAETH101T	95 <sup>8</sup>
	Sugarcane and Molasses	Bagasse and straw only, no grid electricity	WAETH102T	55
	Any other starch or sugar feedstock	Any	WAETH103T	98.93 <sup>1</sup>
	Any cellulosic biomass including Corn Stover, Wheat Straw, or Sugarcane Straw	As specified in WA-GREET	WAETH104T	50
Biodiesel	Any feedstock derived from animal fats, corn oil, or a waste stream	Grid electricity, natural gas, and/or renewables	WABIOD200T	45
	Any feedstock derived from plant oils except for Palm-derived oils	Grid electricity, natural gas, and/or renewables	WABIOD201T	65
	Any feedstock	Any	WABIOD202T	100.11 <sup>2</sup>
Renewable Diesel	Any feedstock derived from animal fats, corn oil, or a waste stream	Grid electricity, natural gas, and/or renewables	WARNWD300T	45
	Any feedstock derived from plant oils except for Palm-derived oils	Grid electricity, natural gas, and/or renewables	WARNWD301T	65
	Any other feedstock	Any	WARNWD302T	100.11 <sup>3</sup>
Biomethane CNG	Landfill or Digester Gas	Grid electricity, natural gas, and/or renewables	WACNG500T	70
	Municipal Wastewater sludge, Food Waste, Green Waste, or Other Organic Waste	Grid electricity, natural gas, and/or parasitic load	WACNG501T	45
Biomethane LNG	Landfill or Digester Gas	Grid electricity, natural gas, and/or renewables	WALNG501T	85
	Municipal Wastewater sludge, Food Waste, Green Waste, or Other Organic Waste	Grid electricity, natural gas, and/or parasitic load	WALNG502T	60

Fuel	Feedstock	Process Energy	FPC	CI (gCO <sub>2</sub> e/MJ)
Biomethane L-CNG	Landfill or Digester Gas	Grid electricity, natural gas, and/or renewables	WALCNG502T	90
	Municipal Wastewater sludge, Food Waste, Green Waste, or Other Organic Waste	Grid electricity, natural gas, and/or parasitic load	WALCNG503T	65
Biomethane CNG, LNG, L-CNG	Dairy and Swine Manure	Grid electricity, natural gas, and/or parasitic load	WALCNG504T	-150
Hydrogen	Centralized SMR of fossil natural gas or LNG	Grid electricity, natural gas, and/or renewables	WAHYG601T	185
Renewable LPG	Fats, Oils, and Grease residues	Grid electricity, natural gas, and/or renewables	WARNWP400T	45
	Any feedstock derived from plant oils (excluding palm and palm derivatives)	Grid electricity, natural gas, and/or renewables	WARNWP401T	65
Alternative Jet Fuel	Any feedstock derived from animal fats, corn oil, or a waste stream	Grid electricity, natural gas, and/or renewables	WAAJF701T	50
	Any feedstock derived from plant oils (excluding palm oil and palm derivatives, as a sole feedstock or blended with other feedstocks)	Grid electricity, natural gas, and/or renewables	WAJF702T	70
	Any other feedstock	Grid electricity, natural gas, and/or renewables	WAAJF703T	100.11
Any Gasoline Substitute Feedstock-Fuel Combination Not Included Above	Any	Any	WASG800T	98.93 <sup>4</sup>
Any Diesel Substitute Feedstock- Fuel Combination not Included Above	Any	Any	WASD801T	100.11 <sup>5</sup>

<sup>1</sup> 2017 baseline carbon intensity for Washington gasoline is 98.85 gCO<sub>2</sub>e/MJ.

<sup>2</sup> 2017 baseline carbon intensity for Washington diesel is 100.02 gCO<sub>2</sub>e/MJ.

<sup>3</sup> 2017 baseline carbon intensity for Washington diesel is 100.02 gCO<sub>2</sub>e/MJ.

<sup>4</sup> 2017 baseline carbon intensity for Washington gasoline is 98.85 gCO<sub>2</sub>e/MJ.

<sup>5</sup> 2017 baseline carbon intensity for Washington diesel is 100.02 gCO<sub>2</sub>e/MJ.

<sup>7</sup> Reflects an iLUC value of 19.8. If iLUC value under WA CFS is modified, this may be adjusted accordingly.

<sup>8</sup> Reflects an iLUC value of 19.4. If iLUC value under WA CFS is modified, this may be adjusted accordingly.

**Table 9. Summary Checklist of Quarterly and Annual Reporting Requirements**

Parameters to report	Gasoline & Diesel Fuel	Ethanol, Biomass based diesel, Renewable Diesel, Alternative Jet Fuel, Other alternative fuels	Natural Gas and Propane	Electricity	Hydrogen
For Quarterly Reporting					
Organization/Company	x	x	x	x	x

Parameters to report	Gasoline & Diesel Fuel	Ethanol, Biomass based diesel, Renewable Diesel, Alternative Jet Fuel, Other alternative fuels	Natural Gas and Propane	Electricity	Hydrogen
Organization FEIN	x	x	x	x	x
Fuel Pathway Code	x	x	x	x	x
Transaction Type	x	x	x	x	x
*Transaction Date	x	x	x	x	x
Business Partner (if applicable)	x	x	x	x	x
Production Company ID and Facility ID	x**	x**	x**	n/a	x**
Fuel Supplying Equipment ID	n/a	n/a	x	x	x
Vehicle Identifier (if applicable)	n/a	n/a	n/a	x	n/a
Physical Transport Mode Code (all)	x	x	x	x	x
Aggregated Transaction Indicator (T/F)	x	x	x	n/a	x
Fuel Application/EER	x	x	x	x	x
Amount of each gasoline and diesel blendstock	x	n/a	n/a	n/a	n/a
Amount of each fuel used as gasoline or diesel replacement	n/a	x	x	x	x
Amount of each fuel used as a jet fuel replacement	n/a	x	n/a	n/a	n/a
MCON or other crude oil name designation, volume (in gal), and country (or state) of origin for each crude supplied to the refinery	x	n/a	n/a	n/a	n/a
Credits/deficits generated per quarter (MT)	x	x	x	x	x
For Annual Compliance Reporting (in addition to the items above)					
***Credits/deficits generated per year (MT)	x	x	x	x	x
***Credits/deficits carried over from the previous year (MT), if any	x	x	x	x	x
***Credits acquired from another entity (MT), if any	x	x	x	x	x
***Credits sold to another entity (MT), if any	x	x	x	x	x
***Credits pledged for sale into CCM (MT) from another entity, if any	x	x	x	x	x
***Credits retired within CFP (MT) to meet compliance obligation, if any	x	x	x	x	x
MCON or other crude oil name designation, volume (in gal), and country (or state) of origin for each crude supplied to the refinery.	x	n/a	n/a	n/a	n/a
<p>* Same as Title Transfer Date; For Aggregated Transactions enter the last day of the reporting period.  ** Does not apply to Gasoline blendstock, Diesel Fuel, Fossil Propane, or Fossil NG.  *** Value will be calculated, stored and displayed in the WFRS.</p>					

**Table 10. Utility-Specific Carbon Intensity of Electricity<sup>1</sup>**

<b>Fuel Mix Disclosure Claimant ID</b>	<b>Claimant Utility Name</b>	<b>2020 Carbon Intensity of electricity, gCO<sub>2</sub>e/MJ</b>
1	Alder Mutual Light	7.06
4	Benton County PUD #1	6.43
5	Benton Rural Electric Assn.	7.07
6	Big Bend Electric Coop	16.19
12	City of Blaine	7.07
18	Centralia City Light	48.63
19	Chelan County PUD #1	0.00
20	Cheney Light Department	16.21
21	Chewelah Electric Department	7.07
22	Clallam County PUD #1	6.97
23	Clark County PUD #1	61.14
26	Clearwater Power (WA)	7.09
30	Columbia Rural Electric Assn. (WA)	20.01
32	Coulee Dam, Town of	7.06
33	Cowlitz County PUD #1	16.10
35	Douglas County PUD #1	41.01
38	Eatonville Electric Department	7.07
39	Elmhurst Mutual Power & Light	7.07
41	Ellensburg Electric Division	7.07
44	Ferry County PUD #1	7.07
46	Franklin County PUD #1	10.83
47	Grays Harbor County PUD #1	7.17
48	Inland Power & Light	14.19
51	Kittitas County PUD #1	7.31
52	Klickitat County PUD #1	25.18
53	Kootenai Electric Coop	0.00
54	Lakeview Light & Power	7.07
56	Lewis County PUD #1	6.59
59	McCleary Light & Power	7.06
63	Milton Electric Division	7.07
64	Modern Electric Water Company	7.07
66	Nespelem Valley Electric Coop	7.07
69	Northern Lights (WA)	6.61
71	Ohop Mutual Light	7.07
72	Okanogan County PUD #1	10.63
73	Okanogan County Electric Coop	0.00
75	Orcas Power & Light Coop	0.00
76	Pacific County PUD #2	14.65
81	Parkland Light & Water	7.07
82	Grant County PUD #2	118.63
83	Pend Oreille County PUD #1	11.73
84	Peninsula Light	6.27
85	Asotin County PUD #1	7.03
86	Port Angeles Light Operations	7.07

<b>Fuel Mix Disclosure Claimant ID</b>	<b>Claimant Utility Name</b>	<b>2020 Carbon Intensity of electricity, gCO<sub>2</sub>e/MJ</b>
88	Wahkiakum County PUD #1	7.07
89	Mason County PUD #3	6.78
90	Puget Sound Energy	134.79
91	Richland Energy Services	18.21
92	Ruston, Town of	0.53
95	Seattle City Light	4.45
96	Skamania County PUD #1	7.07
97	Snohomish County PUD #1	6.22
99	Steilacoom Electric Utility	7.07
101	Sumas, City of	7.07
102	Tacoma Power	4.02
103	Tanner Electric Coop	7.07
106	Vera Water & Power	14.57
109	Avista (WA)	113.08
111	Mason County PUD #1	6.60
117	Whatcom County PUD #1	7.07
118	Jefferson County PUD #1	7.07
119	Port of Seattle	7.07
120	Yakama Power	7.07
124	Port Townsend	0.00
130	Pacific Power (WA)	178.47
143	Solar City (WA)	0.00
144	Kalispel Tribal Utility	7.07
157	Okanogan County Electric Coop	15.64
158	Orcas Power & Light Coop	7.07
160	Energy Northwest	7.06
161	Consolidated Irrigation District #19	7.11
162	Fairchild Airforce Base	7.07

<sup>1</sup> Updates to this table will be provided annually on the CFS website.

[Statutory Authority: Chapter 70A.535 RCW. WSR 22-24-004 (Order 21-04), § 173-424-900, filed 11/28/22, effective 12/29/22.]