



## **Claiming Utility-Specific Carbon Intensities for Electricity Used to Produce Sustainable Aviation Fuel**

**Policy Number: Chapter 173-424 WAC**

**Program Name: Climate Pollution Reduction Program**

**Date Issued: January 4, 2024**

### **References:**

- [Chapter 70A.535 RCW](#)
- [Chapter 173-424 WAC](#)

### **Purpose:**

Aviation fuel is a difficult to decarbonize sector of transportation fuel. In 2023, the Legislature amended the Clean Fuels Standard (CFS) to more directly incentivize the production of Sustainable Aviation Fuel (SAF) in Washington. To those ends, the Legislature directed Ecology to allow one or more fuel pathways for the production of SAF by December 31, 2023. Further, the CFS statute and Ecology's CFS rule allow use of a utility-specific carbon intensity when electricity is used as a transportation fuel. Ecology has previously interpreted these provisions in the CFS rule to apply to the electricity used to produce hydrogen via electrolysis for use in fuel cell vehicles. ([Concise Explanatory Statement](#) (p. 99), [Electric utility-specific carbon intensity guidance](#)). Questions have arisen regarding whether utility-specific carbon intensities should also apply to electricity used in the production of SAFs, including, but not limited to, hydrogen generated via electrolysis that is subsequently used in SAF production. Ecology expresses through this Interpretive Statement its opinion that the CFS statute does not prohibit the use of a utility-specific Carbon Intensity for electrolysis processes used to generate the renewable feedstocks of SAF.

### **Application:**

This interpretive statement applies to producers of Sustainable Aviation Fuel (SAF) participating in the Clean Fuel Standard.

### **Limitations**

This Interpretive Statement is not a regulation; it is advisory only and is not intended to be inclusive of or address every facility and circumstance. Ecology plans to include this in the upcoming rulemaking for public review and comments.

## **Glossary**

**Alternative jet fuel (AJF) or Sustainable aviation fuel (SAF)** means a fuel that can be blended and used with conventional petroleum jet fuels without the need to modify aircraft engines and existing fuel distribution infrastructure, and that has a lower carbon intensity than the applicable annual carbon intensity standard in Table 2 of WAC 173-424-900. Alternative jet fuel includes jet fuels derived from co-processed feedstocks at a conventional petroleum refinery.

**Biomethane** means methane derived from biogas, or synthetic natural gas derived from renewable resources, including the organic portion of municipal solid waste, which has been upgraded to meet standards for injection to a natural gas common carrier pipeline, or for use in natural gas vehicles, natural gas equipment, or production of renewable hydrogen. Biomethane contains all of the environmental attributes associated with biogas and can also be referred to as renewable natural gas. [WAC 173-424-110](#)(24)

**Renewable hydrogen** means hydrogen produced using renewable resources both as the source for the hydrogen and the source for the energy input into the production process, as defined in RCW [19.405.020](#)(32). It includes hydrogen derived from: (a) Electrolysis of water or aqueous solutions using renewable electricity; (b) Catalytic cracking or steam methane reforming of biomethane; or c) Thermochemical conversion of biomass, including the organic portion of municipal solid waste (MSW). Renewable electricity, for the purpose of renewable hydrogen production by electrolysis, means electricity derived from sources that qualify as renewable energy resources as defined in RCW [19.405.020](#)(34). ([WAC 173-424-110](#)(128))

## **Background**

Adopted by the Legislature in 2021, the [Clean Fuel Standard](#) (CFS), Chapter 70A.535 RCW, is designed to: (1) lower the carbon intensity of transportation fuels in Washington; (2) reduce greenhouse gas and conventional air pollutant emissions; and (3) spur economic growth. RCW 70A.535.005(3). At its core, the CFS program seeks to achieve these goals by requiring fuel suppliers to gradually reduce the carbon intensity of transportation fuels to 20% below 2017 levels by 2034. It does so by creating market-based incentives that encourage fuel suppliers to either reduce the carbon intensity of their fuels or purchase credits from low-carbon fuel providers. The statute also directs Ecology to seek to harmonize Washington's CFS program with the regulatory standards, exemptions, reporting obligations, and systems of credit generation contained in other states' clean fuels programs, except where doing so would directly conflict with the Washington CFS. RCW 70A.535.060(1). Washington's CFS is expected to provide an increasing range of low-carbon and renewable alternative transportation fuels that reduce dependency on petroleum and improve air quality. The Department of Ecology adopted the CFS rule, Chapter 173-424 WAC, in November, 2022, and began implementing the program on January 1, 2023.

### **2023 Sustainable Aviation Fuel Amendments**

Aviation fuels remain a difficult to decarbonize sector of transportation fuel. Following adoption of the CFS rule, the Legislature amended the CFS statute ([Senate Bill 5447](#)) to further promote

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and accelerate the production and use of sustainable aviation fuels (SAF) in Washington.<sup>1</sup> In doing so, the Legislature noted that SAFs “represent the most significant near and midterm opportunity for aviation to reduce its greenhouse gas emissions.” 2023 c 232 § 1.

Following these amendments, the CFS statute defines “alternative jet fuel” as fuels “that can be blended and used with conventional petroleum jet fuels without the need to modify aircraft engines and existing fuel distribution infrastructure, and that have a lower carbon intensity than the applicable annual carbon intensity standard” set out in Ecology’s CFS rule as of the date of the amendment.<sup>2</sup> 2023 c. 232 § 2(16). The statute directs Ecology to allow one or more carbon intensity pathways for alternative jet fuels by no later than December 31, 2023. 2023 c. 232 § 3. The statute further directs that Ecology must allow biomethane to be claimed as a feedstock for alternative jet fuel “consistent with that allowable for compressed natural gas, liquefied natural gas, liquefied compressed natural gas, or hydrogen production.” *Id.*

### Use of Utility-Specific Carbon Intensities for SAF Production

The CFS statute includes a non-exhaustive list of policies and priorities that must be reflected in the CFS rule. RCW 70A.535.030. Among these priorities, the statute directs Ecology to adopt rules that “measure greenhouse gas emissions associated with electricity and hydrogen based on a mix of generation resources specific to each electric utility participating in the clean fuels program.” *Id.* The statute also directs Ecology to include mechanisms that allow the assignment of credits based on the use of electricity to directly fuel vehicles. See RCW 70A.535.030(6).

Accordingly, Ecology’s rule determines the carbon intensity of electricity, both utility-specific and statewide average, based on the annual fuel mix disclosure report published by the Washington State Department of Commerce. In the CFS rule, [173-424-630](#)(6) states that “the carbon intensity of solar, wind, geothermal, hydropower, and ocean power renewable electricity is deemed to be zero.” And, as directed in [RCW 70A.535.030](#)(6), the CFS rule allows CFS participants to use the utility-specific carbon intensity for electric vehicle charging or fueling, rather than the statewide average carbon intensity of the electric grid.

Ecology has previously interpreted the CFS statute and rule to also allow CFS participants to use the utility-specific carbon intensity for hydrogen production via electrolysis when used to power fuel cell vehicles.<sup>3</sup> For electricity used as a process energy in the production of participating fuels, however, (other than electricity and hydrogen that is used refuel vehicles) Ecology has determined that fuel producers should use the statewide average carbon intensity. This was explained in the [Concise Explanatory Statement](#) (p. 99) during the 2021-2022 Clean Fuel Standard rulemaking. This requirement is harmonized with the requirements in the similar

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<sup>1</sup> The amendment was based in part on recommendations from Washington State University’s Sustainable Aviation Biofuels Workgroup. Among its recommendations, the Workgroup noted that SAF “[e]fforts should focus on the early-action pathways to decarbonize the energy sector and should not prioritize any particular feedstocks, process technologies, or fuel type over others.”

<sup>2</sup> Senate Bill 5447 uses the terms “sustainable aviation fuel” and “alternative jet fuel” somewhat interchangeably. For purposes of this policy document, Ecology interprets the term “alternative jet fuel” as incorporated within the scope of “sustainable aviation fuel.”

<sup>3</sup> Electric Utility-Specific Carbon Intensity: Clean Fuel Standard Program Utility-Specific Electricity for 2023; *available at*: <https://apps.ecology.wa.gov/publications/SummaryPages/2302040.html>.

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programs implemented in California and Oregon. In 2023, the carbon intensity score of statewide average grid is [69.01 gCO<sub>2</sub>e/MJ](#). This score is updated annually based on the fuel mix used to generate the electricity consumed in Washington State, as published by the Washington State Department of Commerce in their annual Fuel Mix Disclosure report.

In 2023, the Legislature amended ([Senate Bill 5447](#)) the Clean Fuels Standard (CFS) to more directly incentivize the production of Sustainable Aviation Fuel (SAF) in Washington. To those ends, the Legislature directed Ecology to allow one or more fuel pathways for the production of SAF by December 31, 2023. The CFS rule also expressly contemplates that Ecology can approve active fuel pathways that involve the use of renewable or low-CI process energy, including electricity used in the production of electrolytic hydrogen. See WAC 173-424-610(9)(g). Further, and as noted above, the CFS statute and Ecology's CFS rule allow use of a [utility-specific carbon intensity](#) when electricity is used as a transportation fuel. Given that Ecology has previously interpreted these provisions to apply to the electricity used to produce hydrogen via electrolysis for use in fuel cell vehicles, questions have arisen regarding whether utility-specific carbon intensities should also apply to electricity used for SAF production, including hydrogen generated via electrolysis that is subsequently used in SAF production.

Consistent with the intent of SB 5447, Ecology finds it necessary to issue this specific Interpretive Statement on the use of utility-specific carbon intensity of electricity for electrolytic hydrogen used as a feedstock to produce SAF, characterized by rapidly evolving fuel production technologies to decarbonize the aviation sector. The utility specific carbon intensity of electricity can be low-CI or zero-CI by allocating the renewable component of the fuel mix used for electricity generation or through the retirement of renewable energy certificates (RECs) provided that the RECs meet the Washington eligibility criteria so that the GHG reduction benefits from electricity generation are real and achieved in Washington State. The utility-specific carbon intensity can be used for the total electricity consumed by electrolysis equipment in an integrated SAF production process, if the equipment co-produces other chemicals, in addition to electrolytic hydrogen, that are used as feedstock to produce SAF.

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### **ADA Accessibility**

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